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Environmental Protection
Agency

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FINAL

Environmental Impact Statement

Volume II: Report and Appendices

Tampa Electric Company - Polk Power Station

FINAL
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Tampa Electric Company - Polk Power Station

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VOLUME II

ACRONYMS AND ABBREVIATIONS

°C	Degrees Celsius
°F	Degrees Fahrenheit
µg/g	Micrograms Per Gram
µg/kg	Micrograms Per Kilogram
µg/L	Micrograms Per Liter
$\mu g/m^2/yr$	Micrograms Per Square Meter Per Year
$\mu g/m^3$	Micrograms Per Cubic Meter
µm	Micrometer (micron)
µmhos/cm	Micromhos Per Centimeter
7Q10	Minimum 7-day Average with a 10-year Recurrence
AADT	Average Annual Daily Trips
AAQS	Ambient Air Quality Standards
AGL	Above Ground Level
AMSL	Above Mean Sea Level
ANSI	American National Standards Institute
API	American Petroleum Institute
AQRV	Air-Quality—Related Value
A/RR	Agricultural/Residential Rural
BACT	Best Available Control Technology
BCF	Bioconcentration Factor
BEBR	Bureau of Economic and Business Research
BLIS	BACT/LAER Information System
bls	Below Land Surface
BMP	Best Management Practices
BOCC	Board of County Commissioners
BOD	Biochemical Oxygen Demand
BOD_5	5-Day Biochemical Oxygen Demand
Btu	British Thermal Unit
Btu/gal	British Thermal Units Per Gallon
Btu/lb	British Thermal Units Per Pound
Btu/scf	British Thermal Units Per Standard Cubic (Foot) Feet
CAA	Clean Air Act
$CaCO_3$	Calcium Carbonate
CC	Combined Cycle
CCT	Clean Coal Technology

ACRONYMS AND ABBREVIATIONS

CCT	Clean Coal Technology
CDBG	Community Development Block Grant
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act, 1980
CFC	Chlorofluorocarbons
CFR	Code of Federal Regulations
CFRPC	Central Florida Regional Planning Council
cfs	Cubic Foot (Feet) Per Second
CG	Coal Gasification
CGCU	Cold Gas Cleanup
cm/sec	Centimeters Per Second
CO	Carbon Monoxide
CO_2	Carbon Dioxide
COD	Chemical Oxygen Demand
COS	Carbonyl Sulfide
CPC	Clean Power Cogeneration
CR	County Road
CSM	Cubic Foot (Feet) Per Second Per Square Mile
CT	Combustion Turbine
CTC	Control Technology Center
CUP	Conditional Use Permit or Consumptive Use Permit
CWA	Clean Water Act
$\bar{d}$	Shannon Diversity Index
DAF	Dissolved Air Floatation
dB	Decibel
DEIS	Draft Environmental Impact Statement
DNL	Day-Night Average Sound Levels
DO	Dissolved Oxygen
DOE	U.S. Department of Energy
DOI	U.S. Department of the Interior
DRI	Development of Regional Impact
DSM	Demand-Side Management
ECT	Environmental Consulting & Technology, Inc.
*E*Hg	Expected Mercury Concentrations
EIS	Environmental Impact Statement

ACRONYMS AND ABBREVIATIONS

EMF	Electromagnetic Fields
EMS	Emergency Medical Services
EPA	U.S. Environmental Protection Agency
EPRI	Electric Power Research Institute
ESA	Endangered Species Act
ESP	Electrostatic Precipitator
FAA	Federal Aviation Administration
FAC	Florida Administrative Code
FCG	Florida Electric Power Coordinating Group
FCREPA	Florida Committee on Rare and Endangered Plants and Animals
FDACS	Florida Department of Agriculture and Consumer Services
FDCA	Florida Department of Community Affairs
FDEP	Florida Department of Environmental Protection
FDER	Florida Department of Environmental Regulation
FDHR	Florida Division of Historical Resources
FDLES	Florida Department of Labor and Employment Security
FDNR	Florida Department of Natural Resources
FDOT	Florida Department of Transportation
FEECA	Florida Energy Efficiency and Conservation Act
FEIS	Final Environmental Impact Statement
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
FFPI	Florida First Processing, Inc.
FGD	Flue Gas Desulfurization
FGFWFC	Florida Game and Fresh Water Fish Commission
FGT	Florida Gas Transmission
FHWA	Federal Highway Administration
FICON	Federal Interagency Committee on Noise
FICUN	Federal Interagency Committee on Urban Noise
FIPR	Florida Institute for Phosphate Research
FLM	Federal Land Manager
FLUCCS	Florida Land Use and Cover Classification System
FNAI	Florida Natural Areas Inventory
FPC	Florida Power Corporation
FPSC	Florida Public Service Commission
FR	Federal Register

ACRONYMS AND ABBREVIATIONS

FRG	Floridians for Responsible Utility Growth
F.S.	Florida Statutes
FSRI	Florida Sinkhole Research Institute
ft	Foot (Feet)
ft-bls	Foot (Feet) Below Land Surface
ft/day	Foot (Feet) Per Day
ft/ft	Foot (Feet) Per Foot
ft-msl	Foot (Feet) Above Mean Sea Level
ft-NGVD	Foot (Feet) Above National Geodetic Vertical Datum of 1928
ft^2/day	Square Foot (Feet) Per Day
ft^3/day	Cubic Foot (Feet) Per Day
$ft^3/day/ft^3$	Cubic Foot (Feet) Per Day Per Cubic Foot
ft^3/hr	Cubic Foot (Feet) Per Hour
FTE	Full-Time Equivalent
FWS	U.S. Fish and Wildlife Service
g	Gram
g/m^2	Grams Per Square Meter
$g/m^2/yr$	Grams Per Square Meter Per Year
g/sec	Grams Per Second
GATX	General American Transportation Corporation
GC-MS	Gas Chromatograph-Mass Spectrometer
GE	General Electric
GEESI	General Electric Environmental Systems, Inc.
gpd	Gallons Per Day
gpm	Gallons Per Minute
gpm/ft	Gallons Per Minute Per Foot (Feet)
gpm/ft^2	Gallons Per Minute Per Square Foot
gr	Grains
gr/scf	Grains Per Standard Cubic Feet
GWH	Gigawatt Hours
H_2S	Hydrogen Sulfide
H_2SO_4	Sulfuric Acid
HCC	Hillsborough Community College
HEAST	Health Effects Assessment Summary Tables
HEC	Hydrologic Engineering Center
HEP	Habitat Evaluation Procedure

ACRONYMS AND ABBREVIATIONS

HGCU	Hot Gas Cleanup
HHV	Higher Heating Value
HRS	Health and Rehabilitative Services
HRSG	Heat Recovery Steam Generator
HSH	Highest–Second Highest
HUD	U.S. Department of Housing and Urban Development
Hz	Hertz (cycles per second)
I-75	Interstate 75
IAF	Induced Air Floatation
ICC	Interstate Commerce Commission
IGCC	Integrated Gasification Combined Cycle
IRIS	Integrated Risk Information System
ISC	Industrial Source Complex Model
ISC2	Industrial Source Complex Model 2
ISCLT2	Industrial Source Complex Long-Term Model
ISCST2	Industrial Source Complex Short-Term Model
IWT	Industrial Wastewater Treatment
KBN	KBN Engineering and Applied Science, Inc.
kg	Kilograms
kg/km^2	Kilograms Per Square Kilometer
km	Kilometers
km^2	Square Kilometers
kV/m	Kilovolts Per Meter
kV	Kilovolts
kWh	Kilowatt-hour
LAER	Lowest Achievable Emission Rate
lb/ft^3	Pound Per Cubic Foot
lb/gal	Pounds Per Gallon
lb/hr	Pounds Per Hour
lbs	Pounds
lb/yr	Pounds Per Year
LEAF	Legal Environmental Assistance Foundation
L_{eq}	Equivalent Sound Level
$L_{eq(1)}$	Equivalent Sound Level for a 1-hour Period
$L_{eq(24)}$	Equivalent Sound Level for a 24-hour Period
LHV	Lower Heating Value

ACRONYMS AND ABBREVIATIONS

L_{max}	Maximum Level (of Noise)
LOLP	Loss of Load Probability
LOS	Level of Service
m	Meter
m^2	Square Meter
m^3/yr	Cubic Meters Per Year
M-1	Code for Industrial Land Use
MCL	Maximum Contaminant Level
MCR	Maximum Current Rating
MDL	Method Detection Limit
mG	Milligausses
mg	Milligrams
mgd	Million Gallons Per Day
mg/kg	Milligrams Per Kilogram
mg/L	Milligrams Per Liter
mg/m^2	Milligrams Per Square Meter
$mg/m^2/yr$	Milligrams Per Square Meter Per Year
mi^2	Square Miles
MIR	Maximum Individual Risk
MIT	Mechanical Integrity Test
mL	Milliliters
MMBtu	Million British Thermal Units
MMcf	Million Cubic Feet
MODFLOW	Modular Three-Dimensional Finite Difference Groundwater Flow Model
MOU	Memorandum of Understanding
mph	Miles Per Hour
MPN	Most Probable Number
MSA	Metropolitan Statistical Area
msl	Mean Sea level
MSW	Municipal Solid Waste
Mton	Thousand Tons
MW	Megawatts
N_2O	Nitrous Oxide
NAACP	National Association for Advancement of Colored People
NAAQS	National Ambient Air Quality Standards

ACRONYMS AND ABBREVIATIONS

$NaHCO_3$	Sodium Bicarbonate
NAS	National Audubon Society
NCA	Noise Control Act
NEC	National Electric Code
NEPA	National Environmental Policy Act
NESC	National Electrical Safety Code
NESHAPS	National Emission Standard for Hazardous Air Pollutants
NFPA	National Fire Protection Association
ng	Nanogram(s)
NGVD	National Geodetic Vertical Datum of 1928
NH_3	Ammonia
NOA	Notice of Availability
NOI	Notice of Intent
NO_x	Nitrogen Oxides
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NSPS	New Source Performance Standards
NSR	New Source Review
NTU	Nephelometric Turbidity Units
NWA	National Wilderness Area
NWI	National Wetlands Inventory
NWS	National Weather Service
O_3	Ozone
OSHA	Occupational Safety and Health Administration
PAH	Polynuclear Aromatic Hydrocarbon
PC	Pulverized Coal
PCB	Polychlorinated Biphenyls
pCi/L	Pico Curies Per Liter
PhM	Phosphate Mining
PHX	Primary Heat Exchanger
PM	Particulate Matter
PM_{10}	Particulate Matter less than or equal to 10 micrometers in diameter
POM	Polycyclic Organic Matter
PON	Program Opportunity Notice
POTW	Publicly-Owned Treatment Works
PPA	Pollution Prevention Act

ppb	Parts Per Billion
ppm	Parts Per Million
PPP	Pollution Prevention Plan
PPSA	Florida Power Plant Siting Act
ppt	Parts Per Trillion
PSD	Prevention of Significant Deterioration
PSES	Point-Source Evaluation Section
psig	Pounds Per Square Inch Gauge
Pt-Co	Platinum Cobalt
PVC	Polyvinyl Chloride
PWRR	Present Worth Revenue Requirements
QUAL2E	Enhanced Stream Water Quality Model
R-1	Code for Residential Land Use
Ra	Radium
RC	Rural Conservation
RCC	Rural-Cluster Center
RCRA	Resource Conservation and Recovery Act
RMS	Root Mean Square
RO	Reverse Osmosis
ROD	Record of Decision
ROW	Right-of-Way
RSC	Radiant Syngas Cooler
SAR	Staff Analysis Report
SARA	Superfund Amendments and Reauthorization Act
SCA	Site Certification Application
scf	Standard Cubic Feet
SCR	Selective Catalytic Reduction
SCS	Soil Conservation Service
SEL	Sound Exposure Level
SF-1M	Single Family-Mixed
SHPO	State Historic Preservation Officer
SIA	Significant Impact Areas
SIC	Standard Industrial Classification
SMSA	Standard Metropolitan Statistical Area
SNCR	Selective Noncatalytic Reduction
SO_2	Sulfur Dioxide

ACRONYMS AND ABBREVIATIONS

SO_3	Sulfur Trioxide
SO_x	Sulfur Oxides
SPCC	Spill Prevention Control and Countermeasure Plan
SR	State Road
ST	Steam Turbine
STORET	Storage and Retrieval of Parametric Data
stpd	Short Tons Per Day
SU	Standard Units
SUS	Saybolt Universal Seconds
SWCFGWB	South West-Central Florida Ground-Water Basin
SWFWMD	Southwest Florida Water Management District
SWUCA	Southern Water Use Caution Area
TCLP	Toxicity Characteristic Leaching Procedure
TDS	Total Dissolved Solids
TEC (or TECO)	Tampa Electric Company
TIA	Tampa International Airport
TN	Total Nitrogen
TP	Total Phosphorous
tpd	Tons Per Day
TPR	Total Population Risk
TPS	TECO Power Services
tpy	Tons Per Year
TSP	Total Suspended Particulates
TSS	Total Suspended Solids
UE&C	United Engineers & Constructors, Inc.
UIC	Underground Injection Control
URF	Unit Risk Factor
USACOE	U.S. Army Corps of Engineers
USC	U.S. Code
USGS	U.S. Geological Survey
VISCREEN	Visual Impact Screening
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compound
WAR	Water and Air Research, Inc.
WET	Wetland Evaluation Technique
WUCA	Water Use Caution Area
WUP	Water Use Permit
WWF	World Wildlife Fund

CHAPTER 5.0

Summary of Potential Adverse Impacts of the Proposed Project and Identification and Evaluation of Impact Avoidance, Minimization, and Mitigative Measures

5.0 SUMMARY OF POTENTIAL ADVERSE IMPACTS OF THE PROPOSED PROJECT AND IDENTIFICATION AND EVALUATION OF IMPACT AVOIDANCE, MINIMIZATION, AND MITIGATIVE MEASURES

5.1 SUMMARY OF ADVERSE IMPACTS

The potential effects of construction and operation of the proposed Polk Power Station are described in Section 4.0 of this EIS. Adverse effects are summarized below for reference during review of the mitigative measures described in Section 5.2.

5.1.1 Air Resources

During construction, potential adverse effects to air quality would result from emissions generated during land clearing and site preparation, from vehicle movement, from open burning of cleared land debris, and from the use of internal combustion engines.

Fugitive dust emissions would be greatest during the initial 27-month construction phase land clearing, site preparation, reclamation, and facilities construction activities. Occasional open burning of cleared debris would result in emissions of PM, CO, NO_x, and hydrocarbons for short periods of time. Some emissions of CO and NO_x from combustion engines would occur during site preparation and facility construction due to the use of large mechanized equipment. There would be minor sources of VOCs from on-site painting, refueling of construction equipment, and the application of adhesives and waterproofing chemicals.

The quantity of these emissions would vary on an hourly and daily basis as construction progresses. However, as the quantity of these emissions would generally be low, and no violation of the National and State of Florida AAQS should occur.

During the operation of the proposed project, the primary emissions sources would be from the combustion and process sources outlined in Section 2.3.5.1. These sources are the advanced 7F CT, HGCU thermal oxidizer, H_2SO_4 plant, and auxiliary boiler associated with Polk Unit 1, and the CC and simple-cycle CTs. The exhaust gases from these sources would consist primarily of NO_x, CO, SO_2, and small quantities of VOCs, PM, and other trace constituents present in the fuel or created during combustion. There would also be potential fugitive emissions caused by materials handling and storage operations.

Detailed air quality impacts analyses (see Section 4.1.1.2) using ISC2 models showed no significant effects to any Class I or II PSD increments or AAQS would occur due to the proposed project operations. Results of an air toxic emissions study (as detailed in Section 4.12.2) also indicated that, under proposed normal operating conditions, the proposed project is not expected to have significant adverse risk effects on human health as a result of direct human inhalation of emissions from the proposed project. Based on the human health analysis

results presented in Section 4.12.2, no adverse impacts to wildlife are anticipated from air emissions from the proposed project.

5.1.2 Surface Water Resources

Construction of the Polk Power Station would not have any adverse effects on surface water resources since storm water runoff and dewatering water from areas under construction would be retained on site under normal rainfall conditions. The operation of the station could result in potential adverse impacts from three types of discharges to surface waters:

- Cooling water reservoir discharge
- Storm water runoff associated with industrial activity
- Storm water runoff not associated with industrial activity

Based on the results of the long-term modeling efforts conducted by Tampa Electric Company (see Section 2.3.6), discharges from the cooling reservoir and storm water discharges are expected to meet all FDEP Class III surface water quality standards. Since no water quality standard exists for some parameters, the estimated water quality of discharge from the cooling reservoir values were compared to typical values for Florida streams (FDER/PSES, 1989) to estimate potential effects from the discharges. The estimated concentrations of BOD (0.7 mg/L), TN (1.53 mg/L), TP (1.49 mg/L), and TSS (10.9 mg/L) in the discharge water rank in approximately the best 10^{th}, 65^{th}, 92^{nd}, and 67^{th} percentiles, respectively, for Florida streams. The BOD concentration in discharge water would be low. Percentiles for certain other parameters ranked in the lowest two-thirds of Florida streams in the database used by FDEP (FDER/PSES, 1989). However, since these values fell within the range of existing water quality measured by Tampa Electric Company (TEC, 1992a) and FDER/PSES (1989) at nearby lakes and streams (see Section 3.2.3), these concentrations do not indicate that a significant impact would occur. The TP concentration in the discharge (1.49 mg/L) is approximately three times the typical concentrations in Little Payne Creek (SW-5, 0.37 to 0.61 mg/L). During periods of low flow in Little Payne Creek, the 3.1-mgd discharge would contribute almost half of the stream flow where the creek crosses Fort Green Road and would produce a composite concentration of approximately 1.0 mg/L. This concentration of TP is not sufficient to result in nuisance conditions in Little Payne Creek nor interfere with the Class III water uses since the composite concentration under low flows is near the low end of existing, ambient observations for streams in the vicinity. Flows typically range 3 to 10 times higher, so the contribution of discharged TP would be proportionately reduced.

FDEP water quality standards (Chapter 17.302, FAC) state that thermal discharges should not exceed 92°F and should not be more than 3°F higher than the ambient temperature of a receiving lake. Under normal operating conditions, the cooling reservoir discharge is expected to meet these standards and not adversely impact the receiving water (the on-site unnamed reclaimed lake to the east of the cooling reservoir which flows into Little

Payne Creek). Under the worst-case conditions (long-term, full load in December), a mixing zone within the on-site reclaimed lake of only approximately 250-ft radius from point of discharge would be needed. Thus, the cooling reservoir discharge would have no thermal impacts on off-site receiving water bodies since FDEP thermal standards would be met within the mixing zone in the on-site reclaimed lake.

The storm water runoff associated with industrial activity (i.e., runoff from slag, fuel oil, and H_2SO_4 storage areas) would be appropriately treated in the IWT system prior to being routed to the cooling reservoir. Storm water runoff from areas not associated with industrial activity would be routed to the detention basin to allow appropriate sediment settling control prior to being discharged to on-site reclaimed wetland areas and eventually off site. Therefore, storm water runoff from the proposed project site is not expected to adversely impact off-site water bodies.

5.1.3 Groundwater Resources

The proposed site preparation and facility construction activities for the proposed Polk Power Station would have short-term effects on groundwater in the surficial aquifer within and adjacent to the site due to temporary dewatering activities. Dewatering would last for approximately 1 year and would occur primarily during the excavation and construction activities for the cooling reservoir and reclaimed wetland areas within mined-out areas on the site. Some additional temporary (3 to 7 months) dewatering would also be required for several plant facilities that have foundations or locational requirements below the water table (TEC, 1992a). These temporary dewatering activities are expected to be of similar magnitude and have similar effects on the surficial aquifer system as the previous and ongoing phosphate mining activities, and during the required land reclamation activities for mined-out lands in the central Florida phosphate district.

The site preparation and construction activities for the cooling reservoir, main plant facilities, and adjacent reclaimed wetland areas on the site tract to the east of SR 37 would involve the sequential dewatering of five subareas. The proposed withdrawals from the surficial aquifer system would be approximately balanced by the increased infiltration of water from the adjacent water storage subareas, since withdrawn water would be retained on site.

Since the surficial aquifer in the site area is not used for potable water supply purposes and due to the confining layer between the aquifers, the temporary surficial aquifer drawdowns would not affect drinking water supplies and other uses of deeper aquifer systems in the vicinity of the Polk Power Station site.

During the operation of the proposed project, potential adverse chemical effects to the surficial aquifer would involve accidental spills and the quality of the seepage water from the cooling reservoir. To prevent or manage potential spills from the chemical handling and storage areas and potential pollution from project operations, a preliminary SPCC Plan, preliminary RCRA Contingency Plan, BMP Plan, and PPP have been

developed by Tampa Electric Company. The measures outlined in these plans are intended to limit the possibility of an accidental spill and discharges from plant operations from affecting groundwater.

The modeled long-term water quality within the cooling reservoir can be used to evaluate the potential effect to surficial aquifer water quality from reservoir seepage. The reservoir water quality meets all primary drinking water standards.

Secondary drinking water standards for iron (0.3 mg/L) and color (15 color units) are exceeded by predicted concentrations in the reservoir (0.627 mg/L and 50.49 color units). However, no adverse effects to surficial water quality are anticipated since predicted reservoir iron and color concentrations are well below averages for Polk County and the naturally occurring, on-site concentrations of these parameters.

Based on the results of the regional groundwater modeling analysis, no potential adverse impacts would occur due to groundwater withdrawals from the Floridan aquifer to supply process, potable, and cooling reservoir makeup water needs for the proposed project. The potential groundwater drawdown at the site boundaries are predicted to be less than 5 ft in compliance with SWFWMD regulatory requirements.

5.1.4 Aquatic and Terrestrial Ecology

Approximately 1,090 acres of land would be affected by construction of the power plant, cooling water reservoir, and other associated on-site power facilities. The main power plant facilities would occupy approximately 150 acres. The cooling reservoir would occupy approximately 860 acres (including the surrounding earthen berms). However, most of these facilities would be located on mined or highly disturbed lands through mining and otherwise altered/converted land.

Approximately 31 acres of mine cuts and 41 acres of USACOE jurisdictional small, isolated marsh and willow/elderberry swamp wetlands would be eliminated by construction of the power plant facilities. These small wetlands are in scattered locations in the unmined area of the proposed plant site (excluding the proposed cooling reservoir) and have been disturbed by the adjacent mining activities.

Construction of the approximately 860-acre cooling reservoir would require the filling of approximately 181 acres of mine cuts determined as jurisdictional wetlands by USACOE. Ecological effects of the reservoir construction would be minimized by the phased development of the storage cells and the proposed wetland mitigation plan. Areas proposed for fill placement are either currently unvegetated or are narrow littoral zones vegetated with a dominance of cattails.

The loss and alteration of approximately 1,090 acres of land for construction of the proposal power station should not significantly reduce species diversity or wildlife abundance in the site area or in Polk County.

However, some fossorial and less mobile species (such as moles, snakes, mice, rats, lizards, frogs, and toads) can be expected to be lost during earthmoving activities. Species inhabiting areas in and adjacent to the proposed power plant facility and reservoir areas may be temporarily displaced while construction activities are underway. If ecological carrying capacities of adjacent areas permit, the remaining habitats and newly created habitats would again attract similar species once the development and reclamation activities are completed. For example, the water-dependent birds and wading birds associated with the reclaimed and unreclaimed mine cuts on the eastern portion of the site may move elsewhere for feeding and roosting during construction, but may return and utilize these areas once construction is completed. Wading birds would require shallow areas of 18 inches or less in depth to allow for foraging.

According to the studies conducted by Tampa Electric Company, construction of the Polk Power Station is not expected to affect regional populations of any endangered, threatened, or species of special concern. The majority of listed plant species that were found on site or that have a high probability of occurrence, occur or are likely to occur in areas not proposed for power plant development. FWS biologists inspected the site on December 23, 1993. As a result of this visit, previous FWS concerns with the occurrence of the red-cockaded woodpecker and the Florida scrub jay on the site have been resolved (see Appendix B).

The state-listed prickly pear cactus and the federally listed candidate species, wild coco orchid, were observed within the unmined area proposed for the main power facilities. The prickly pear cactus is common throughout the state and no significant adverse effects to regional populations are expected. Small populations of the wild coco orchid were also observed within the unmined parcel of the southwestern area of the eastern tract. Since this southwestern area is not scheduled for mining or power station development, the wild coco orchid should persist and eventually extend into the open, wooded communities to be reclaimed on the site.

Of the 46 important wildlife species evaluated for this proposed project (Section 3.5.5), 22 were observed on site or considered to have a moderate to high likelihood of occurring on the site. Of those, at least temporary displacement of wetland-dependent species can be expected during plant construction activities.

The presence of bald eagles in the proposed site vicinity is exhibited by the location of one active nest adjacent to the site, and one inactive nest and one abandoned nest on site. The two latter nest sites are located on site, but in areas not scheduled for power plant development or disturbance by reclamation activities. Since the one active nest is located off site, approximately 1.5 miles from the main power block area and 2,500 ft from the cooling reservoir, construction activities would not be expected to affect the nest. The pair of eagles are accustomed to human presence and noise since the nest is located on a farmstead and close to a county road and active railroad.

Vegetation communities/wildlife habitats that would not be directly affected by the development of the Polk Power Station or site reclamation have the potential to be indirectly affected. These secondary effects could include a temporary lowering of surface and groundwater levels, increased sedimentation, increased surface water runoff, erosion, fugitive dust, and mechanical damage.

Trees and brush in the transmission line, natural gas pipeline, fuel oil pipeline, and railroad spur rights-of-way would be cleared. Wildlife temporarily displaced from the immediate right-of-way areas during construction activities are expected to reuse portions of the areas when construction is completed.

Habitat use would decline during construction of the proposed project due to noise and physical activity. This decline in habitat use would be similar to the effects resulting from the phosphate mining activities in the area. Such avoidance behavior would enable most mobile wildlife to escape direct effects from construction activities, although some losses of individual vertebrates (e.g., rodents, amphibians) can be expected to occur during right-of-way clearing. Wildlife displaced into adjacent areas would survive if they can be assimilated into the nearby habitat. The location of the preferred alternative for the transmission line corridor along SR 37 and through land impacted by mining and associated activities would further limit the potential for wildlife disturbance.

Effects on surface water and wetland systems would be minor since the proposed transmission line structures would avoid or span ecologically valuable aquatic habitats. The only major aquatic system within the northern corridor is the South Prong Alafia River. This crossing is already affected by SR 37. To minimize further effects to the river, the transmission line would be located parallel and as near to the road as practical.

Construction of the transmission line may involve installation of culverts and placement of fill, resulting in temporary increases in turbidity and silt deposition. However, potential effects would be local and temporary, minimized by the use of appropriate erosion and sedimentation control measures, and therefore, would not be expected to affect aquatic resources.

No federally designated Critical Habitat or Wild and Scenic Rivers are crossed by the corridors, and terrestrial or aquatic habitats critical to the continued regional presence of important species would not be affected.

Tampa Electric Company has committed to implement appropriate BMPs and PPPs to minimize effects to the environment due to the site and transmission line construction activities.

During the proposed project operations, terrestrial or wetland communities within the property boundaries would not be adversely affected. Also, none of the listed plant species discussed in Section 3.5.5 would be impacted by plant operations.

The thermal effect of the cooling reservoir operation on the receiving water via the discharges at Outfall 001 would be negligible during the warm seasons of the year. During the winter season, a mixing zone with an approximately 250-ft radius from the point of discharge may be required to meet FDEP Class III thermal discharge standards. The size of the mixing zone represents 2.9 percent of the total receiving reclaimed lake area. Beyond the short mixing zone, all Class III water quality standards would be met based on the results of the long-term, predictive modeling of the reservoir water quality (see Section 2.3.6).

Operation and maintenance of the transmission line would have no significant effects on vegetation, wildlife, or aquatic life in the corridor area. The avoidance of ecologically unique or valuable habitats would be achieved by locating the final right-of-way primarily along the SR 37 right-of-way and/or crossing lands that have been previously altered by phosphate mining activities.

5.1.5 Noise

Construction noise modeling was performed to determine effects at the nearest residential receptor. Due to the large distance between the plant site and the nearest residence (1.6 miles), the construction noise levels at the nearest residence would be reduced to approximately an $L_{eq(1)}$ level of 35 to 40 dB. These levels are significantly below the existing ambient $L_{eq(24)}$ of 51 dB measured near the residence. Consequently, normal construction activities at the plant site, even with multiple sources in operation would have only minor and temporary effects on the noise environment at residences around the plant site (UE&C, 1992).

Based on available literature, earthmoving equipment performing site preparation and reclamation activities throughout the site can be expected to produce noise levels up to 91 dB at 50 ft (UE&C, 1992). Earthmoving equipment of the type normally used for mining reclamation would be used to construct cooling reservoir and reclaim the wetland and upland areas. The highest concentration of construction equipment and activities would be limited to the power block and cooling reservoir areas. Typical maximum cumulative noise levels in this area could reach 95 dB at 50 ft. There would also be 12 to 30 rail deliveries for the IGCC unit construction and 6 to 12 for the CC and CT units. Diesel locomotives would produce a maximum of 97 dB at 50 ft (UE&C, 1992).

Site cleanup and plant start-up would be expected to have noise levels approximately 10 dB lower than the construction stages, except during the short periods of time when the steam lines would be cleaned. Cleaning of the steam lines would require approximately 3 to 10 blows of 1 to 15 minutes per blow over 2 to 5 days and would produce a significant peak sound pressure level of 131 dB at 50 ft. This sound level exceeds the OSHA maximum noise exposure limits, which would require evacuation and/or hearing protection for workers in the vicinity of the source. The temporary steam line blow-out activity would produce a maximum instantaneous noise level of 85 to 80 dB at the nearest residences. This level would represent a noticeable increase from background levels. The steam blow out activities would also likely cause a "startle effect" to

nearby wildlife and human receptors. Reactions by wildlife would be species-specific with sensitive species more likely to be affected and possibly displaced.

Noise related to truck traffic during construction would be minimized since most heavy trucks and earthmoving equipment would remain on site during the first year or two of construction instead of making daily trips on nearby roadways. Truck traffic noise during project construction is expected to be less than during project operation. Therefore, project construction-related truck traffic should not cause or significantly contribute to exceedances of the FHWA peak-hour $L_{eq(1)}$ guidelines of 67 dB for nearby residential areas and 72 dB for commercial areas. Also, the majority of construction would last 27 months, with smaller-scale construction activities for proposed generating units continuing for approximately 14 years.

Infrequent operation of the flare stack during plant operation would temporarily increase noise levels to maximum instantaneous levels of 63, 77, and 75 dB at Residential Areas 1, 2, and 3, respectively. The flare stack operations for the IGCC unit would not occur more than 24 hours per year. As in the case of the steam blow-out activity during construction, the intermittent use of the flare stack would likely cause a startle effect to nearby wildlife and human receptors.

At Residential Area 3, the residence closest to the railroad, the noise maximum instantaneous level produced by a train entering the site would be 54 dB, which is comparable to the nearby observed ambient noise levels ($L_{eq(24)}$ of 51.7 dB. However, single-event pass-bys noise levels can be expected to be significant (97 dB at 50 ft for diesel locomotives). Additional single-event noise levels would be produced by train whistles.

In regard to noise generated from project trucks transporting coal, oil, slag, and by-products, peak-hour $L_{eq(1)}$ noise levels at the nearest residence from the edge of the proposed delivery route (85 ft away) is predicted to be 57.5 dB $L_{eq(1)}$ at full build-out compared to the existing peak-hour traffic noise level of 64 dB $L_{eq(1)}$. The added project truck traffic would increase the peak-hour overall traffic by approximately 1 dB, which is typically not a detectable increase. The predicted and overall resultant noise levels are also below the FHWA peak-hour $L_{eq(1)}$ guidelines of 67 dB for residential areas and 72 dB for commercial areas (although FHWA guidelines additionally consider background noise contributions not considered here). However, coal truck noise during pass-bys are calculated to be significant, 86 dB at the nearest residences and 77 dB at the most distant (250 ft away) residence considered. At full build-out, 302 truck trips (i.e., 151 trips entering the site and 151 trips exiting the site) are expected per day (24 hr) for coal trucks and other project trucks combined (excluding approximately 100 total trips per year for general consumables).

5.1.6 Cultural Resources

Based on the cultural resources assessment conducted for the site and confirmation of those results by FDHR, the construction of the Polk Power Station is not expected to affect any known archaeological or historical

features listed or eligible for listing on the *National Register of Historic Places*, or any other known cultural resources.

Coordination with FDHR to assess potential effects to cultural resources along the right-of-way alignments of project off-site linear facilities (transmission line and possible natural gas pipeline) is pending until the final alignments are determined by Tampa Electric Company. Coordination for the adjoining rail spur has been conducted (see Appendix B; also DEIS, Appendix Q).

5.1.7 Socioeconomic Conditions

No significant increases in the regional study area population would result from construction and operation of the proposed Polk Power Station, since 95 percent of the workforce is projected to be drawn from within the regional study area. The demands for housing, schools, and other public services and facilities in the region are also expected to be minimal. During construction, a maximum of 70 employees, plus their dependents, are expected to relocate to the area. At proposed full build-out of the proposed project in 2010, only 11 of the 210 operational employees, and their dependents, are projected to relocate from outside the region. These predicted relocations during construction and operation are based on typical commuting patterns of power plant employees with major regional population centers within a 30-mile commuting distance to the proposed Polk Power Station site (EPRI, 1982). In contrast, population in the four-county region is projected to increase by 490,000 persons from 1990 to 2010 (BEBR, 1992a).

Additional public costs incurred as a result of additional demands for public services would be insignificant since the majority of the workforce currently resides in the region. Significant positive economic effects to the region would result from construction and operational workforce payrolls, local purchases of goods and services, and from taxes on land and land improvements. Polk County would receive a significant positive net fiscal impact from the construction and operation of the proposed Polk Power Station.

5.1.8 Land Use, Recreation, and Aesthetics

Development of the Polk Power Station and related facilities is consistent with existing land use, future land-use classification, and regulations. A CUP, required for compliance with the Polk County Zoning Code, was approved by the Polk County BOCC in May 1992. Construction and operation of the site is not expected to adversely affect surrounding land use since phosphate mining is the predominant land use in the area and the project would be well bufferred from residential or other potentially sensitive land use.

Development and operation of the site would not adversely affect off-site recreational facilities. The nearest facility is a 1.5-acre neighborhood park located approximately 5 miles from the proposed power plant.

Because the proposed site development/reclamation plans would include the creation of planted vegetative buffer areas along public roadways around the site, any perceived adverse effects on aesthetics and visual qualities of the site vicinity due to construction of the proposed Polk Power Station would be minimized. The main plant structures would be set back a minimum of 2,500 ft from the nearest public viewshed. After construction, only the taller plant structures would be potentially visible from nearby public viewpoints. Development of the property tract to the west of SR 37 as a wildlife habitat/corridor area should enhance aesthetic and visual qualities of that portion of the site.

5.1.9 Transportation

Some construction-related transportation effects would result from the movement of construction workers, machines, and equipment to and from the site during the initial construction phase for the IGCC unit and overall site development/reclamation. The transportation effects would be temporary and would not have significant adverse effects on the LOS ratings of roadway links and intersections in the vicinity of the site (Lincks 1993). Effects of future phase construction- and operation-related traffic on roadway links and intersections in the vicinity of the site are not expected to degrade the LOS on roadway links and intersections to unacceptable levels.

5.1.10 Nonhazardous Solid Wastes

Nonhazardous construction-related wastes generated at the proposed Polk Power Station site would be appropriately collected, managed, and disposed in accordance with applicable rules and regulations. As such, the wastes are not expected to cause adverse environmental effects.

The major potential for adverse environmental effects arising from operation-related solid waste handling and disposal areas are due to possible runoff and leachate migration. Specifically, there are two areas of concern: the brine and HGCU solids disposal area and the slag by-product temporary storage area. Potential adverse consequences due to leachate migration would be greatly minimized, as all three areas would be designed with liners and leachate collection systems in accordance with Chapter 17-701 FAC. Groundwater monitoring would also be conducted to provide for detection of any potential leachate migration.

Tampa Electric Company would take appropriate precautions to minimize runoff effects from solid waste storage areas. Storm water runoff from the slag disposal area would be collected in a detention basin and routed to the IWT system for treatment. Any collected leachate from the active brine or HGCU cells would be collected for treatment in the brine concentrator, and any runoff from the permanently capped brine storage cells would be routed to the storm water detention basin. The storm water runoff basins for the slag storage areas would be sized to detain runoff in excess of the 25-year, 24-hour storm event.

A significant portion of the solid wastes produced at the power station (waste oil, worn gasifier refractory, and refractory backup brick, and spent H_2SO_4 plant catalysts) would be reclaimed at off-site facilities. Another significant portion of the wastes would be of marketable-grade quality by-products (slag and H_2SO_4). These reclamation and reuse activities would reduce the potential effects associated with the on-site and off-site storage and disposal of these materials.

Measures to minimize the potential for adverse effects from nonhazardous solid waste storage and disposal areas have been incorporated in the facility design. The only foreseeable adverse consequences due to nonhazardous solid waste management would be the land requirements for the waste storage units.

5.1.11 Hazardous Wastes

During operation of the proposed project, the routine hazardous waste generation rate would be between 10 to 1,000 kg per calendar month (i.e., small quantity generator status under RCRA regulations). During periods of shutdowns or high maintenance; however, the facility could generate greater than 1,000 kg per month. The amount of waste generated would be minimized through the use of source reduction techniques, such as product substitution, and waste reduction techniques, such as recycling and regeneration. Hazardous wastes would be managed on site and shipped off site to permitted waste disposal or recycle facilities in accordance with local, state, and federal hazardous waste regulations. Consequently, the potential for adverse environmental effects associated with the on-site management and storage of hazardous wastes would be minimized.

5.1.12 Human Health and Risk to Wildlife

Based on the analyses presented in Section 4.12, no significant adverse human health effects are anticipated as a result of the direct inhalation of the proposed Polk Power Station air emissions. Projected facility air emission levels would not significantly degrade ambient air quality (with respect to AAQS), and all potential air toxic emissions would result in concentrations below Florida No-Threat Levels developed to protect human health. Therefore, chronic human health effects due to the proposed project air emissions are unlikely.

The results of an inhalation human health analysis were summarized in Section 4.12.1. The predicted increased risk of cancer to an individual due to the proposed facility emissions would be 1.8×10^{-6}, or less than two persons out of every one million (one cancer case per 556,000 persons). Although there is always some degree of uncertainty as to the assessment of risk, it is reasonable to assume that the true risk would not be greater than the calculated values for direct inhalation, and therefore, considering the protective methodology employed in the human health analysis outlined in Section 4.12.1, public health in the vicinity of the site should not be jeopardized due to any potential carcinogenic emissions from the proposed facility.

Wastewater would be discharged from the cooling reservoir to the Little Payne Creek drainage system. Human exposure to the facility wastewater constituents could potentially occur through direct contact resulting from recreation within Little Payne Creek, Payne Creek, and/or the Peace River (all interconnected water bodies), or through contact from the ingestion of fish or other aquatic life containing a bioaccumulation of constituents. These surface waters are all designated Class III waters under State of Florida regulations. Numeric water quality standards for Class III waters were developed to provide for safe recreation and the propagation of healthy fish and wildlife. Therefore, unless discharges from the cooling reservoir to these water bodies exceed Class III standards, adverse human health effects are unlikely. Based on modeling analyses, the water quality of discharges from the cooling reservoir would comply with Class III surface water quality standards. Thus, no adverse human health consequences are anticipated (see Section 4.12.1.2 for further discussion).

During the proposed project operations, there would be a net flow of water from the cooling reservoir into the surficial aquifer because the normal operating level in the reservoir would generally be higher than the surficial aquifer water level. Presently, there are no potable water wells in the site vicinity using this aquifer as a drinking water supply. The water quality in the cooling reservoir is predicted to meet the drinking water standards, except for the iron and color secondary drinking water standards. A condition for approval of the SCA was an on-site groundwater monitoring plan to ensure drinking water standards are met. Consequently, no adverse human health consequences are anticipated due to the inadvertent consumption of water from the surficial aquifer in the site vicinity (see Section 4.12.1.3 for further discussion).

The EMF associated with the proposed transmission lines and those transmission lines that will be interconnected would comply with the State of Florida EMF Rule (Chapter 17-274, FAC), which requires 230-kV lines to not exceed 2.0 kV/m for electric fields and 150 mG for magnetic fields at the edge of the right-of-way. Both the proposed and interconnected transmission lines would be 230-kV lines.

Phosphogypsum, a by-product of the chemical processing of the ore, becomes enriched with radium (Ra^{226}, Ra^{228}) and disposal on mined lands can represent a health risk. Human health risk from radiation associated with phosphate mining is considered to be negligible due to the absence of phosphogypsum on the site.

Ecological health effects from plant operation include impacts to wildlife from the deposition of metals associated with air emissions. Using the reclaimed lake as the environmental receptor and mercury as the most toxic element, an increase above background levels of this element in fish may occur. The federal ambient water quality criteria for mercury indicate that, except possibly where a locally important species is very sensitive, freshwater aquatic organisms and their uses should not be affected unacceptably if the four-day average concentration of mercury does not exceed 0.012 µg/L more than once every three years on the average and if the one-hour average concentration of mercury does not exceed 2.4 µg/L more than once every three years on the average. Based on modeling estimates, the cumulative impact from all present and

proposed sources (at full build-out) within a 15-km radius of the Polk Power Station would elevate ambient levels of mercury in the reclaimed lake above the 0.012-μg/L criteria by 0.005 μg/L. The analysis of this increase, based on a bioconcentration factor of 81,700, shows that the total methyl mercury in catfish could increase 72.2 μg/kg above the ambient 160-μg/kg level. This would result in a predicted daily dose per kg of body weight in foraging eagles of 28.34 μg. The results show that daily dietary exposure to foraging eagles in waters of the reclaimed lake is less than 4 percent of the protective criterion established by FWS review documents (Eisler, 1987). Therefore, the increase in mercury levels should not elevate the body burden in resident fish sufficient to cause adverse accumulations in foraging birds. This conclusion is based on an analysis of the effects to the southern bald eagle as the most sensitive receptor.

Impacts to wildlife from particulate deposition relate to toxic effects from metals. Those metals associated with emission from the proposed Polk Power Station include arsenic, beryllium, cadmium, chromium, lead, mercury, and nickel. Based on the ISC2 modeling analysis using conservative assumptions for maximum emission rates and operating scenarios (see Section 4.12.2.5), the maximum levels of these metals expected from air emissions at full build-out and operating at full capacity should be below threshold limits for wildlife based on FWS contamination hazard review information.

5.1.13 Energy Impacts

No adverse effects on energy resources are anticipated from the construction or operation of the proposed Polk Power Station since the facility is a net producer of electrical energy. The proposed generating units would utilize the most efficient generation technologies currently available to convert energy in fuels to electrical energy. Also, the proposed IGCC unit would use coal as its primary fuel, which is the most abundant energy resource in the United States.

5.2 IDENTIFICATION AND EVALUATION OF IMPACT AVOIDANCE, MINIMIZATION, AND MITIGATIVE MEASURES

This section describes Tampa Electric Company's commitment to mitigation of potential impacts from the proposed project construction and operation should the Polk Power Station be permitted and constructed. Tampa Electric Company's commitment also includes the avoidance of potential impacts by: (1) use of a site selection process that incorporated the protection of environmental resources, (2) effective design of field alternatives prior to construction, (3) minimization of construction and operation noise to population centers, (4) selection of a site located a considerable distance from PSD Class I areas, and (5) use of transmission line alignments that avoid sensitive environmental areas.

Tampa Electric Company's commitment to impact minimization includes pollution prevention through: (1) conservation of energy policies for customers within its service area, (2) recycling, (3) more efficient use of resources, and (4) use of CCT for operation. Furthermore, minimization is achieved through use of BACT, an additional Tampa Electric Company commitment whereby emission or discharge of solid, liquid, or gaseous wastes are reduced by the use of effective pollution control equipment and operation strategies currently available. In addition, construction BMPs for erosion control would be consistent with EPA, FDEP, and SWFWMD requirements.

The level of reclamation, restoration, and mitigation offered by Tampa Electric Company is described in the applicant's SCA (TEC, 1992a) and is subject to resource agency review during NEPA and/or permitting processes. The compensation for unavoidable impacts includes wetland creation and enhancement, wildlife corridor creation, upland creation, tree planting, and other mitigative measures.

5.2.1 Proposed Impact Avoidance and Pollution Prevention Measures

Pollution prevention measures are practices that reduce or eliminate the creation of pollutants through:

- Increased efficiency in the use of raw materials, energy, water, or other resources
- Protection of natural resources by conservation
- Source reduction

The PPA of 1990 defines source reduction as any practice that "reduces the amount of any hazardous substances, pollutant, or contaminant entering any waste stream or otherwise released into the environment (including fugitive emissions) prior to recycling, treatment, or disposal; thereby reducing the hazards to public health and the environment associated with the release of such substances, pollutants, or contaminants."

In the development of plans for this proposed project, Tampa Electric has incorporated several impact avoidance and pollution prevention features or measures. These factors started with the site selection study. In the search for a location for the proposed power station, potential environmental impacts played a prominent role in the rejection of possible sites. The site selection process provided a systematic analysis and comparison of possible sites to balance the needs of the Tampa Electric Company system and avoidance of as many environmental impacts as possible. The goal of the Siting Task Force participation in the siting process was to ensure that public concerns and issues relative to power plant development within the study area were adequately and accurately considered in the siting assessment program.

Additional efforts by Tampa Electric Company to avoid impacts and prevent pollution at the proposed power station are as follows:

- Implementation of existing conservation, load management and cogeneration programs to avoid construction of power plants to meet a significant portion of its power resources needs, thereby avoiding impacts of the additional plants
- Selection of a proposed site which has been already highly impacted by phosphate mining activities to avoid potential impacts to an undisturbed "greenfield" land area
- Use of DOE CCT for Polk Unit 1 to reduce emissions of metals, acid gases, and organics from use of coal as a fuel source by treatment of the syngas before combustion to remove potential pollutants
- Directions to design engineers to review ongoing design efforts and to modify designs and systems which could decrease impacts by pollution prevention or measures to avoid impacts
- Extensive reuse of water in the proposed gasification facilities and extensive treatment of the wastewater to avoid discharges of potentially contaminated water
- Construction of the cooling reservoir in mined-out areas as a primarily below grade facility to reduce groundwater withdrawals and to avoid potential impacts due to unexpected berm failure
- Use of lined material storage areas (i.e., slag and brine storage areas) with storm water runoff and leachate collection and treatment systems to avoid potential contamination impacts to groundwater and surface water
- Conversion of waste sulfur compounds removed from the syngas to a saleable H_2SO_4 by-product with productive off-site uses to avoid the need for permanent storage facilities
- Storage of coal in enclosed silos to prevent fugitive dust and storm water runoff/leachate

- Selection of a route for coal trucks between Big Bend Power Station and the proposed Polk Power Station that passes through primarily industrial and rural land uses to avoid potential impacts to large residential areas
- Use of specially designed trucks for coal delivery with aluminum covers to avoid fugitive dust emissions during transport
- Siting of facilities within the proposed site to avoid potential impacts to sensitive environmental resources such as high-quality wetlands

5.2.2 Proposed Impact Control Technologies

Several systems and pieces of equipment have been incorporated into the design of individual units which would control the amount of pollutants generated and/or released to the environment. Generally, these control technologies represent the BACT for power generating units. Controls for potential air pollution and water pollution releases are mandated by state and federal regulations. Therefore, a key consideration in the agency review and potential approval procedures for the proposed project under the state certification and the EPA NPDES permitting processes is the implementation of appropriate BACT for the proposed project. These BACTs are presented in Section 2.3.5.2 for air emissions and Section 2.3.8 for wastewater. Examples of BACT for the proposed project for air emission control would include water scrubber, filters, and cyclones for PM removal; low-sulfur fuels and the CGCU and HGCU systems to control SO_2 emissions; and advanced, efficient combustion technologies and nitrogen and water injection to control NO_x emissions. Examples of BACT wastewater treatment systems for the proposed project would include sedimentation basins, neutralization and filtration. In addition to BACT, Tampa Electric Company would also implement BMP plans incorporating pollution prevention measures during construction and operation of the facilities to minimize or avoid potential air, water, and ecological impacts. Construction BMPs for the proposed facilities and site development and reclamation activities are discussed in Section 5.2.3.6 and would include the use and maintenance of soil erosion filtration and sedimentation control devices as settling basins, silt fences, staked hay bales, swales, and revegetation/mulching of disturbed areas. The construction BMPs and erosion control measures would be consistent with the preliminary PPP presented in the DEIS as Appendix K. Prior to initiation of construction activities on the site, this PPP would be finalized in accordance with EPA requirements for the NPDES General Permit for Storm Water Discharges from Construction Sites and FDEP and SWFWMD requirements under Chapters 17-25 and 40D-4, FAC, respectively.

In addition to the control measures discussed above, Tampa Electric Company would implement other BMPs and pollution prevention and avoidance plans during construction and operation of the proposed Polk Power Station. These plans would include:

- BMPs and Pollution Prevention Conditions in accordance with the requirements of the EPA draft NPDES permit (see Appendix A)

- Construction dewatering, monitoring, and mitigation plan and operational groundwater monitoring plan (see DEIS, Appendix S)
- SPCC Plan (see DEIS, Appendix T)
- RCRA Contingency Plan (see DEIS, Appendix T)

Further, Tampa Electric Company has incorporated certain other measures to control or minimize potential environmental impacts in the design and operational practices and plans for the proposed Polk Power Station. These measures would include:

- Use of the IGCC generation technology, including the conventional CGCU and demonstration HGCU systems, to demonstrate a more efficient use of coal as an energy source and to reduce potential environmental impacts compared to other coal-based technologies
- Maximum recycling and reuse of treated wastewaters to minimize groundwater withdrawals
- Use of fuels (i.e., natural gas and fuel oil) with low-sulfur and ash contents to limit air pollutants such as SO_2 and PM
- Use of nitrogen and water injection to minimize the formation and emission of NO_x
- Purchase of a site area which is much larger in size than actually needed for the proposed power station to provide for some buffering of potential impacts to adjoining lands
- Development of plans to handle hazardous wastes, control chemical spills, protect worker health, and control releases of process streams to the air and water
- Use of planted vegetation buffer strips around the proposed facilities to limit potential visual impacts and noise pollution

5.2.3 Proposed Impact Mitigative Measures

5.2.3.1 Goals and Approaches to Wetland Mitigation

The federal wetland policy of the Clinton Administration consists of five principals. For example, the President "...supports the interim goal of no overall net loss of the Nation's remaining wetlands, and the long-term goal of increasing the quality of the Nation's wetlands resource base." The President has also stated that "regulatory programs must be efficient, fair, flexible, and predictable..." and that the "federal wetlands policy should be based upon the best scientific information available" (President Clinton, 1993).

Projects proposing wetland impacts should be reviewed on a case-by-case basis. Generally, under Section 404(b)(1) review pursuant to the CWA, the following categories are considered:

Ecological Assessment of Original Wetland

- Involves an evaluation of the habitat types, vegetative diversity, nutrient retention and sediment-trapping properties, flood-storage capacity, groundwater influences and other site-specific functions
- Evaluation techniques may be qualitative and, if possible, quantitative, using Habitat Evaluation Procedure (HEP) and Wetland Evaluation Technique (WET) methodologies
- Visual documentation (i.e., photographs, slides, videotapes, site maps, and soil surveys) should be obtained prior to dredge-and-fill activities

Statement of Mitigation Goals

- Involves a written, approved statement of mitigation objectives in the 404 permit
- Approval of the final 404 permit should be contingent upon acceptance of the mitigation plan

Methodology, address the following parameters in mitigation proposal

- Acreage of mitigation
- Ecological description of mitigation area prior to conversion
- Baseline photographic record of proposed mitigation area and proposed permit area
- Description of wetland habitat to be developed; including vegetative cover, tree type, soil types, soil saturation profile, and hydrological source; vegetation distribution plan should be drawn up to avoid nonhomogeneous planting patterns
- Beginning and end points of mitigation should be clearly defined

Monitoring Strategy

- Development and succession of the constructed wetlands should be monitored at planned, consistent intervals, which indicate the ecological success of the mitigation area (i.e., growing season, flood periods, etc.)
- Walk-overs and photographic documentation of growth success and failure should be prescheduled (to coincide with natural growing seasons)
- Quantitative measures of plan growth, cover density, terrestrial species diversity, etc. should be prescheduled for monitoring; results should be plotted to aid in site comparison

Contingency Plan

- Plan outlining restorative measures to be taken in the event that this original mitigation plan does not fully succeed

The Tampa Electric Company mitigation plan for USACOE jurisdictional wetlands which would be impacted by the proposed project construction has been submitted to EPA, USACOE, and FDEP for review and is presently pending final review as a part of the Section 404 permit process.

5.2.3.2 EPA Approach to Wetland Mitigation

As part of EPA's 404 permit application review process, EPA typically requests compensatory mitigation for unavoidable wetland impacts. The goal for such mitigation is that no net loss of wetland functions and values is incurred due to project implementation. EPA-preferred methods of wetland compensation include: restoration of former wetlands (such as an applicant purchase of nearby farmed wetlands or prior-converted wetlands at an appropriate site within the project area and the subsequent restoration of those wetlands); enhancement of existing wetlands (such as the improvement of wetland circulation), and creation of new wetlands. Also, if a mitigation bank has been established in the general area, the applicant could purchase bank credits to compensate for wetland impacts at a determined compensation ratio. In general, in-kind mitigation (e.g., functional replacement of, for example, tidal wetlands with tidal wetlands) on site (same watershed) is considered desirable by EPA. For wetland enhancement, restoration, and creation methods, EPA also recommends applicant monitoring of the wetlands for three to five years (depending on the wetland type) to ensure successful establishment of the wetland system.

Functional assessment of the existing wetlands to be affected should be conducted. The assessment should evaluate the quality of wetland components, such as wetland hydrology, diversity, values, functions, and habitat suitability. A HEP could be requested in association with the habitat quality assessment. The relative quality of the wetlands to be affected as well as the corresponding level of appropriate wetland compensation can then be determined.

Draft EPA mitigative guidance for appropriate compensation ratios (i.e., wetlands gained during compensation versus wetlands affected during construction) are as follows: the ratio for functional restoration of former wetlands is 2:1; for functional enhancement of existing wetlands is 4:1; and for functional creation of new wetlands is 3:1. These ratios concerning the amount of mitigation can be used as a baseline; however, depending on the determined relative quality of the wetlands to be converted and various resource agency inputs and policies, these ratios could increase or decrease.

The above is a generic summary of general EPA Section 404 procedures. Specific recommendations can vary by project. The mitigation plan proposed by Tampa Electric Company for the proposed Polk Power Station is provided in Section 5.2.3.4 (also see Appendix C).

5.2.3.3 Wetlands at the Proposed Site

The site proposed by Tampa Electric Company for the construction of the Polk Power Station is a highly-disturbed site due to previous and ongoing phosphate mining activities. A portion of the site east of SR 37 has been determined by USACOE as jurisdictional wetlands. However, the majority of the USACOE jurisdictional wetlands is located in open water and littoral zone areas of unreclaimed mine cuts which were created when draglines excavated below natural grade and surficial aquifer water table to access phosphate

reserves. The remainder of the USACOE jurisdictional wetlands is located in an unmined portion of the eastern tract of the site. These wetlands consist of small, isolated herbaceous and early successional forested wetlands which have experienced some disturbance by adjacent mining activities. Although the proposed site construction plan involves a large acreage of mine cut wetland displacement, most would be retained (although reconfigured) within the design of the cooling reservoir as shown in Appendix C.

Due to existing conditions on the proposed site, the placement of fill for plant site construction in the disturbed areas that contain jurisdictional wetlands is necessary for the development of a workable site plan. Wetland areas that are not located in the plant site and cooling reservoir areas would remain intact after the proposed construction (e.g., the southwestern corner of the eastern tract). Subject to USACOE and other resources agency review, functions and values of wetland areas to be displaced would be compensated by Tampa Electric Company by the proposed construction of the large, interconnected wetland compensation areas containing diverse habitats and mosaics of wetland and upland communities.

Tampa Electric Company has submitted a dredge-and-fill permit application ("Joint Application for Works in Waters of Florida") dated July 24, 1992, to USACOE and the State of Florida (see Appendix C). Subsequently, the Jacksonville District of USACOE performed a jurisdictional determination for the proposed site for the Tampa Electric Company Polk Power Station. Based on this jurisdiction determination, USACOE has claimed jurisdiction over approximately 253.11 acres of wetlands (approximately 211.78 acres of phosphate mine cuts and approximately 41.33 acres of highly stressed wetlands) located on the proposed project site (also see Section 4.5.1.1). USACOE issued a Public Notice of this determination on October 7, 1992 (see Appendix C). A map showing the limits of the USACOE jurisdictional determination is provided as part of the Tampa Electric Company Section 404 permit application (see Appendix C). Official USACOE notification of Tampa Electric Company of the jurisdictional determination was provided on November 4, 1992. The jurisdictional determination has a three-year expiration date after notification. Appropriate compensation for the proposed filling of jurisdictional wetlands by Tampa Electric Company would need to be determined by USACOE in consultation with EPA and other agencies during the Section 404 permitting process. Since EPA has requested and USACOE has agreed to hold the Tampa Electric Company 404 permit application in abeyance until after the NEPA process for this EIS is completed. More recently, Tampa Electric Company has submitted an update (May 9, 1994) to its original permit application to USACOE, and EPA has provided a comment letter (May 11, 1994) to the USACOE on their Public Notice of October 7, 1992 (see Appendix C). The USACOE permitting decision will follow after the completion of the NEPA process.

SWFWMD has evaluated certain remnant wetlands on the unmined portion of the proposed site which would be filled for the main power plant facilities. Based on a site visit on June 29, 1992, SWFWMD confirmed that these wetlands are under SWFWMD's jurisdiction and that Tampa Electric Company would need to

provide compensation for the loss of these wetlands. A letter and map confirming their jurisdiction are provided in Appendix C.

Based on the disturbed nature of this site, FDEP determined that a formal FDEP Jurisdictional Declaratory Statement determination would not be required (see Appendix C, correspondence with FDEP, April 20, 1992). FDEP jurisdiction would be confirmed on a case-by-case basis if development or reclamation activities encroach on waters of the state as defined by current rules and methodology. Wetland mitigation impacts effects would be evaluated by FDEP on the basis of comparing the existing Agrico reclamation plan to the proposed Tampa Electric Company plan in terms of wetland construction.

5.2.3.4 Tampa Electric Company Mitigation Proposal

Wetland and aquatic habitats on the proposed site were surveyed by Tampa Electric Company during preparation of the SCA (TEC, 1992a) for the proposed project. If the proposed project is implemented, Tampa Electric Company proposes to fill approximately 253 acres of on-site wetlands (i.e., approximately 212 acres of phosphate mine cuts and approximately 41 acres of highly stressed wetlands). Any off-site wetland losses due to transmission line or other construction associated with the Polk Power Station have not been determined. However, such potential wetlands would be considered under separate Tampa Electric Company 404 permit application(s).

As compensation for the 253 acres of on-site jurisdictional wetland losses, Tampa Electric Company proposes to create/enhance a total of 168.41 acres (or approximately 169 acres due to rounding of the acreages in individual compensation areas) of wetlands, subject to USACOE and other agency review.

In order to provide the approximate 169 acres of mitigation, Tampa Electric Company's mitigation plan proposes to contour certain remaining mine cuts to enhance approximately 19 acres of forested wetlands and approximately 23 acres of herbaceous wetlands, as well as to create approximately 63 acres of forested wetlands and approximately 64 acres of herbaceous wetlands. Tampa Electric Company proposes to locate these mitigation acreages in the portions of the proposed site east of SR 37 (see Figure 5.2.3-1). As shown in this figure, the primary mitigation areas would be located southwest and west of the site for the main power plant facilities. Mitigation activities in these areas would include creation of forested uplands, upland-wetland interface areas, and nonwetland habitat areas as well as the creation of appropriate topographic and hydrologic conditions to support the wetland areas. These proposed site reclamation activities for wetland as well as upland forested areas exceed the planting densities, level of management and monitoring, and success criteria typically required for the reclamation of mined phosphate lands. Additional discussion of the proposed project mitigation is presented in Section 5.2.3.6 under the aquatic and terrestrial ecology subsection.

Subject to USACOE and other agency review, Tampa Electric Company proposes that the planting densities, monitoring plan, and the criteria for measuring the success of the proposed wetland mitigation will be the same as those applied to the overall site reclamation required by FDEP in accordance with the conditions of the site certification. The planting densities, success criteria, and monitoring plan for site reclamation are presented in Section 5.6.5.

The proposed project mitigation would be separate from site reclamation since site reclamation would be implemented in any event, i.e., if the proposed project is constructed or not. Site reclamation is required by FDEP and is a separate process from the EIS process. As the owner of the site, Tampa Electric Company would be responsible for such reclamation. However, the proposed project mitigation would be considered toward site reclamation, so that the mitigated acreage (169 acres) is included in the total site reclamation acreage (799 acres). Table 5.2.3-1 summarizes the proposed project mitigation and site reclamation acreages.

The wetlands to be created/enhanced on site per project mitigation and the wetlands to be reclaimed on site from mined land per site reclamation are planned to remain as wetlands through the year 2010 planning horizon. As the owner of the proposed site, Tampa Electric Company has no plans to change these parcels during or after this plan period. It should also be noted that if a change in use is desired at some point in the future by any party, it would be subject to public scrutiny through the regulatory review and permitting process.

5.2.3.5 Biodiversity

Avoidance and minimization of project impacts would help to maintain the existing biodiversity of the proposed project site, especially for areas that have not been affected by phosphate mining. Project mitigation of unavoidable impacts may have a generally positive effect on the biodiversity of the existing mined site, and to a lesser degree, on the surrounding region.

The biodiversity of the site prior to mining was expected to be typical for natural aquatic/upland areas in central Florida. Phosphate mining on the site and in the region has significantly disturbed the land. The past mining activities have removed vegetation and destroyed horizontally and vertically distributed ecological niches, which has lowered the existing biodiversity of the site and other affected areas. This reduced biodiversity is probably expressed as fewer species being present, i.e., only those species that were able to survive displacement through mining within the remaining niches. The numbers of individuals for the surviving species, however, may be substantive.

The on-site mitigation areas in conjunction with the overall site reclamation plans proposed by Tampa Electric Company would re-establish watershed divides to the greatest extent possible to their premining location and would re-establish drainage basin runoff flow patterns to premining conditions in accordance with applicable

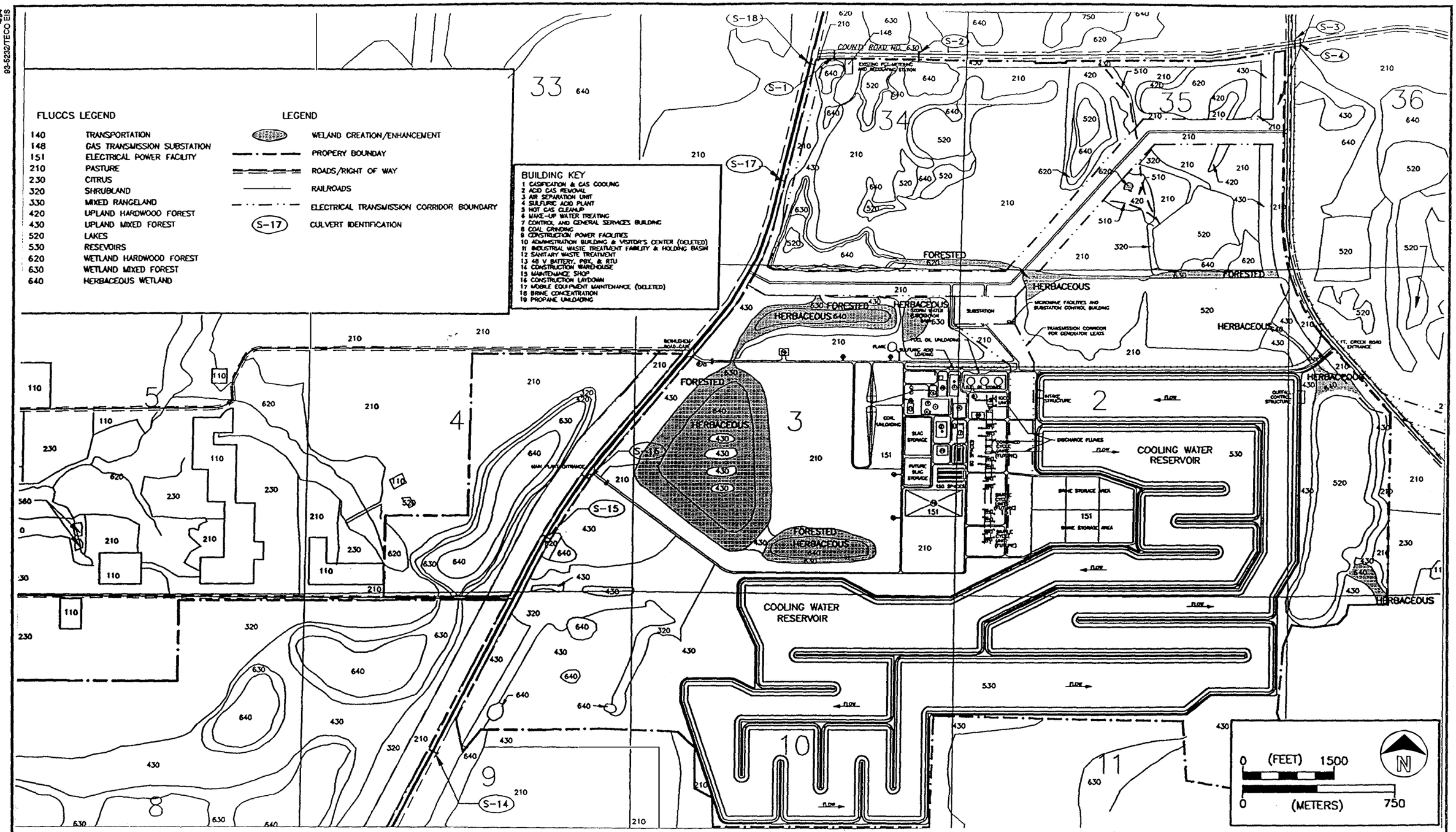

FIGURE 5.2.3-1.
Proposed On-Site Wetland Mitigation Areas East of S.R. 37.

SOURCES: ECT, 1992; TEC 1992a.

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Table 5.2.3-1 Project Wetland Mitigation and Site Reclamation Acreages Proposed by Tampa Electric Company

Mitigation/Reclamation	Wetland Type		
	Forested (acres)	Herbaceous (acres)	Total (acres)
Project Wetland Mitigation (for USACOE)*			
Wetland Creation	62.69	63.58	126.27
Wetland Enhancement	18.94	23.20	42.14
Total Wetland Mitigation†	81.63	86.78	168.41
Site Reclamation (for FDEP)			
Premining Wetlands (total site)	335	277	612
Required Wetland Reclamation (mandatory lands)	283	260	543
Proposed Wetlands After Reclamation† (total site)	371	428	799
Proposed Increase in Wetlands Over Premining Conditions	36	151	187

* Mitigation for SWFWMD jurisdictional wetlands are included in the USACOE wetland mitigation acreages. Tampa Electric Company proposes to fill 253 acres of USACOE jurisdictional wetlands.

† The "Total Wetland Mitigation" acreages (e.g., 168.41 acres) are included in the "Proposed Wetlands After Reclamation" acreage totals (e.g., 799 acreages).

Sources: Tampa Electric Company's Joint Application for Works in the Waters of Florida (see Appendix C of this EIS).
TEC, 1992a

FDEP and SWFWMD regulations. In addition, the mitigation areas would allow the enhancement/creation of wetland areas, provide wildlife corridors, wetland/upland interface areas, and the enhancement of habitat for threatened and endangered species. Compared to the post-mining and pre-construction conditions of the site, such mitigative measures would improve the environmental quality of the site, increase the availability of suitable wildlife habitat, favor the habitation of certain displaced species, and increase species populations and community structure. However, these mitigative measures may only partially restore the biodiversity of the site under premining conditions due to the construction and operation of the proposed project.

In summary, through site reclamation and mitigation, the biodiversity of the site can be expected to be improved compared to the existing mined conditions on the site and can be expected to be partially restored compared to the natural site prior to mining. Such restoration of biodiversity, however, can also be expected to be reduced due to the construction and operation of the proposed project. Relative to the premining conditions on the site, biodiversity would generally not be enhanced unless new niches would be created that were not present prior to mining or if species not native to the site/region were introduced and were able to survive and reproduce. Populations of local species, however, would be expected to increase due to the proposed improved habitat in mitigated and restored portions of the site.

5.2.3.6 Minimization/Mitigation of Construction-Related Impacts

Air Resources

Fugitive dust emissions from the construction site would be minimized by using appropriate dust suppression control methods. These control methods would include paving roads, applying water to roads and other exposed surfaces, or revegetating exposed areas, as needed. Spilled and tracked dirt (or other materials) would be removed from roadways and other paved areas in a timely manner. Emissions from open burning would be limited by removing materials whose burning would produce excessive smoke (i.e., green vegetation), and by conducting this activity in compliance with applicable state and local regulations and ordinances. The implementation of appropriate erosion and sedimentation controls consistent with EPA BMPs would also help minimize fugitive dust emission impacts (see DEIS, Appendix K).

Surface Water Resources

To minimize effects to on-site and off-site surface waters, a comprehensive sedimentation and erosion control plan would be developed and implemented for the Polk Power Station consistent with EPA BMPs (see DEIS, Appendix K).

During construction, inactive subareas of the cooling reservoir and areas to be reclaimed as wetlands would be designed to have sufficient storage capacity to retain storm water runoff on site under normal rainfall conditions and to retain water from dewatering activities on the site. Retention of this water on the site would minimize the hydrologic impacts of large pulses of storm water flowing off site during construction. The on-

site retention areas would be designed to contain storm water from the 25-year, 24-hour rainfall event, in compliance with SWFWMD and FDEP requirements. These flows would be designed to not exceed estimated premining discharges to receiving waters (Table 4.2.1-2).

Quality of receiving waters would be protected by retention of storm water on the site during construction. Swales would be constructed for directing construction site runoff to the cooling reservoir area or to sedimentation basins. Swales would be designed such that erosional velocities are not reached, and would be stabilized with gravel, sod, etc. The sedimentation basins would be appropriately maintained. Tampa Electric Company would also employ vegetative practices (such as seeding) to control erosion and sedimentation. Other erosion control structure practices would include, as necessary, the construction of temporary perimeter berms, rip-rap in potentially high-velocity areas, staked straw bales or other barriers, silt fences, diversionary berms or swales, and graveled road and railroad beds.

In general, all erosion and sedimentation controls would be checked weekly and after major storms, and maintained as follows:

- Sedimentation basins, if used, would be cleaned
- Gravel and rip-rap would be checked for washout or sediment buildup and replaced or cleaned as necessary
- Straw bale barriers would be checked for washout or deterioration and replaced or reinforced as necessary
- Seeded areas would be checked, reseeded if necessary, and if required, fertilized carefully so that excess nutrients are not introduced into surface waters
- Silt fences would be checked for washout and would be repaired, reinforced, or replaced as necessary
- Sediment deposits at any of the aforementioned barriers would be periodically removed, as necessary

Tampa Electric Company has submitted its notice of intent to be covered under the NPDES General Permit (i.e., General Permit for Storm Water Discharge from Construction Sites, which had been issued by EPA on September 25, 1992) and has since achieved coverage under that General Permit.

Groundwater Resources

Potential effects to the surficial aquifer from dewatering drawdown effects would be largely mitigated by retaining all withdrawn water on site. As one subarea of the cooling reservoir would be dewatered to allow for earthmoving and other construction activities, the other subareas would be used for water storage. The proposed withdrawals from the surficial aquifer system would be approximately balanced by the increased

infiltration of water from the adjacent water storage subareas. Further, Tampa Electric Company has submitted a Construction Dewatering Monitoring and Mitigation Plan to SWFWMD and would implement the plan to monitor and mitigate any potential off-site drawdown impacts through the use of recharge ditches and other measures (see DEIS, Appendix S).

Aquatic and Terrestrial Ecology

The loss of USACOE jurisdictional wetlands within the proposed cooling reservoir and power plant facilities areas would be mitigated through the creation/enhancement of wetlands in areas that were previously mined. These wetland creation/enhancement areas are illustrated in Figure 5.2.3-1. All mitigation wetlands would be designed to allow effective functioning within the established watersheds, contribute beneficial water quality and quantity additions to receiving streams, and maximize wildlife habitat values. Several upland islands would be constructed within some of the marshes as nesting sites for wildlife. The islands would be contoured with flat slopes that extend only slightly above mean high water elevations. The proposed reclamation activities to replace other wetland (i.e., nonjurisdictional) and upland areas on the site in accordance with FDEP reclamation requirements are presented in Section 5.6.

To mitigate the impacts to biota associated with mining and power plant development, functional habitats would be enhanced/created or restored through the mitigation and reclamation plans proposed by Tampa Electric Company for the site. The premining land forms on the site were primarily pine flatwoods/pine plantation, oak/pine woods, hardwood hammock, mixed swamp, hardwood swamp, freshwater marsh, shrub and brushland, grassland, mixed rangeland, lakes, citrus groves, and pastureland. These land forms would be restored following construction of the Polk Power Station and reclamation of the property. Restoration of site biodiversity would largely depend on the success of the restoration program. Studies conducted by the Florida Institute of Phosphate Research (1991) show that species richness and numbers of trees on lands left to reclaim naturally increase with time. The combination of both active (by man) and passive (e.g., seed dispersal by birds) processes could shorten the time interval to achieve the potential restoration of biodiversity for these mined lands.

Approximately 94 percent of the 4,348-acre property has been or will be mined with attendant disturbances prior to Tampa Electric Company's proposed use of the site. The power plant, cooling water reservoir, and other associated on-site power facilities would occupy approximately 1,090 acres of land. The area developed for the main power plant facilities would be approximately 150 acres (3 percent of the entire Polk Power Station site). Disturbances to the ecological and biological resources of the site would be minimized by careful siting of the proposed facilities on previously disturbed lands and utilization of existing right-of-way corridors for any off-site linear facilities.

As discussed in Section 5.2.3.4, the aquatic systems that would be affected by construction of the proposed project would be primarily waters and littoral zones associated with mine cuts. If the proposed project is implemented, Tampa Electric Company proposes to fill a total of approximately 253 acres of USACOE jurisdictional wetlands for on-site construction of the power station. As mitigation, Tampa Electric Company proposes to create/enhance a total of approximate 169 acres (168.41 acres) of wetlands, subject to USACOE and other resource agency review. In order to provide the approximate 169 acres, Tampa Electric Company's mitigation plan proposes to recontour the certain mine cuts to enhance approximately 19 acres of forested wetlands and approximately 23 acres of herbaceous wetlands as well as to create approximately 63 acres of forested wetlands and approximately 64 acres of herbaceous wetlands. No natural aquatic on-site or off-site systems would be adversely affected by Tampa Electric Company's proposed project plans. A summary of the proposed project, wetland mitigation, and overall reclamation acreages is presented in Table 5.2.3-1

The construction of the proposed cooling reservoir environment would provide some wildlife amenities otherwise absent in the existing mine cuts. The cooling reservoir design includes a shallow littoral zone to enhance productivity of the waters and afford wading birds forage habitat. Such wading birds could utilize areas as deep as 18 inches for foraging.

Since the majority of the natural communities that occurred within both the proposed northern and eastern transmission line corridors (including immediate adjacent areas) have been altered by mining or road construction, it is not anticipated that transmission line construction activities would have a significant effect on vegetation, wildlife, or aquatic life. Efforts were made by Tampa Electric Company to avoid potentially sensitive habitats as much as possible during the corridor selection. The avoidance of ecologically unique or valuable habitats in the off-site corridor areas would be achieved primarily through collocation with SR 37 and/or crossing of lands that have been previously altered in conjunction with mining.

Clearing of vegetation and subsequent excavations associated with construction would expose soils to erosion by winds and storm waters. Fugitive dust from clearing operations, vehicular traffic, and the use of heavy machinery could affect vegetation in the vicinity of the project site. As discussed in Sections 4.2 and 4.4, potential erosion, sediment transport, and fugitive dust from the site would be controlled by a variety of techniques (e.g., staked hay bales, silt curtains, soil wetting) during the construction of the proposed project.

The proposed Polk Power Station construction is not expected to affect regional plant or animal populations of endangered, threatened, or species of special concern (see Appendix B for FWS correspondence concerning review comments and site inspection on December 23, 1993). The proposed net increase in open water/wetland habitats created by the proposed project mitigation plan should help to restore site diversity for on-site species. Overall, species may benefit from the proposed project mitigation and reclamation plans due to the creation of additional higher quality wetland and upland habitats in place of disturbed mined lands.

The presence of bald eagles in the area is exhibited by one active nest adjacent to the proposed site, and one inactive nest and one abandoned nest on site. The one active nest is located off site, 1.5 miles away from the main power block area and 2,500 ft from the proposed cooling reservoir. The pair of eagles appear to be accustomed to human presence and noise since their nest is located on a farmstead and close to both a county road and an active railroad. Since wetland habitats both on and off site would be available for foraging, the eagles may continue to use this area. Construction of the proposed cooling reservoir would create more open water habitat for potential foraging. In addition, location of the cooling reservoir between the power plant facilities and the eagle nest would provide a buffer zone from the activities associated with the power plant construction and operation.

Global Climate Change

Project construction would result in the loss of on-site vegetation which would contribute to the greenhouse effect (also see Section 4.13.1.2). Presently, there is no federal requirement to mitigate global warming impacts, although voluntary mitigation is encouraged. Tampa Electric Company proposes to plant trees and other vegetation to partially offset project global warming impacts. Impact avoidance and minimization through energy conservation and reduced removal of vegetation are also appropriate measures to offset global warming impacts.

Afforesting open land offsets CO_2 emissions because trees fix, or sequester, atmospheric CO_2. Energy conservation planting is a proposed method for reducing energy demand in which trees are strategically placed around residential buildings to shade the building, thereby reducing the energy required for air conditioning. Using data developed by the World Resources Institute (Trexler *et al.*, 1989), it is estimated that approximately 761,600 acres of open land, an area the size of Connecticut, would need to be planted with trees to offset the CO_2 emissions from the proposed plant while the plant is operating on natural gas, and 1.6 million acres of trees would need to be planted to offset emissions while the plant is operating on syngas. If the proposed project is implemented, Tampa Electric Company will plant trees on the power station property as a part of its proposed wetland mitigation and overall site reclamation plans. Although the area to be planted is less than one percent of the area computed to be needed to offset project emissions, the proposed tree planting does offer some offset to the CO_2 emissions.

Noise

Construction vehicle/machinery noise and steam line blow-out would be the primary sources of potential adverse noise during construction. Such noise would be minimized by the operation of earthmoving equipment, according to design specifications and only during daytime working hours. The potential noise impacts from steam blow-out activities at the proposed power plant would also be somewhat minimized by Tampa Electric Company's proposed announcement of the activities through advance notices in the local area newspapers. Tampa Electric Company also will provide a toll-free telephone number (1-800-282-4667, Extension 34269) for public comments regarding noise levels of the proposed project.

Cultural Resources

No adverse effects to cultural resources are expected for the site proposed by Tampa Electric Company. However, should archaeological resources be uncovered during construction, construction in the area of the site or find would be stopped until the requirements of Section 106 of the National Historic Preservation Act are met. Section 106 requirements include consultation with the Florida SHPO of FDHR to determine the significance of any newly-discovered resources and to develop specific plans for eliminating or reducing potential disturbances to these resources. EPA recommends that Tampa Electric Company develop a plan prior to excavation activities to educate appropriate construction personnel on the procedures to be followed if cultural resources are encountered.

Coordination with FDHR regarding potential impacts to cultural resources along the alignments of project off-site linear facilities (transmission line and future natural gas pipeline) is pending. Coordination with FDHR regarding the adjoining rail spur has been conducted (see Appendix B for FDHR correspondence).

Socioeconomic Conditions

Construction employment is estimated to peak at approximately 1,400 workers and to average approximately 650 workers during the initial construction phase (i.e., 1994 to mid-1996). Because 95 percent of the construction force would be drawn from Polk, Hillsborough, Manatee, and Hardee Counties, the impact of the construction work force on services and facilities in Polk County and the site area is expected to be negligible.

Land Use, Recreation, and Aesthetics

No adverse effects to land use, recreation, and aesthetic conditions are anticipated. Projected construction changes to the site would not be significant due to its existing disturbed condition from past and ongoing mining activities. Construction impacts to surrounding land use should also be minimal since the nearest residential area is 7,000 ft (1.3 miles) from the proposed main power block area on the site. The nearest recreational facilities are located in Bradley Junction over 4 miles from the proposed project site. Aesthetic effects would be minimized by the planned use of setbacks from site boundaries and visual (vegetative) buffers along SR 37, CR 630, and Fort Green Road to shield the main power facilities, except for several of the taller stacks, from potential public viewpoints.

Transportation

No adverse transportation effects are projected to result from construction of the proposed Polk Power Station and any potential effects would be temporary during the initial 27-month construction phase. If the proposed project is implemented, Tampa Electric Company plans to encourage transportation management techniques to reduce the number of construction-related vehicle trips on the road networks. These techniques would include placing a bulletin board on site that may be used by construction contractors to place car-pooling advertisements. Early in the initial construction phase, Tampa Electric Company will also construct certain

geometric improvements at the intersections of site entrance roads and SR 37 and Fort Green Road to accommodate the projected construction and operational workforces. These entrances to the power station will be designed with appropriate deceleration, acceleration, and turn lanes, based on FDOT standards, to accommodate construction and operational traffic so that the roadways continue to operate at acceptable LOS standards. In the event that vehicles accessing the Polk Power Station site degrade the paved surfaces of nearby roadways, Tampa Electric Company will repair and maintain entrance areas to the site as necessary.

Human Health and Wildlife Risks

Construction activities for the proposed project are not expected to have adverse impacts on human health since the potential air emissions and storm water discharges from these activities would be limited to the immediate on-site areas under construction and minimized by use of appropriate dust suppression and erosion control measures. The construction activities are also not expected to have an unacceptable risk to resident wildlife other than displacement impacts as discussed previously.

Energy Resources

No adverse effects to energy resources are expected because sufficient resources for the proposed construction activities are available within the region; therefore, no mitigative measures are proposed or needed.

5.2.3.7 Minimization/Mitigation of Operation-Related Impacts

Air Resources

The proposed Polk Power Station would produce air emissions in three broad categories: combustion emissions, process emissions, and fugitive emissions. Tampa Electric Company would implement appropriate air pollution control equipment and technologies in the proposed project design wherever feasible to limit or minimize air pollutant emissions.

Tampa Electric Company's proposed use of the IGCC for Polk Unit 1 represents the most efficient technology for producing electricity from coal and has lower levels of air pollutant emissions than conventional PC generation technology. The IGCC and stand-alone CT and CC units would also be equipped with appropriate BACT for all affected pollutants and emission sources in accordance with the requirements of the FDEP Final PSD Determination (see Final PSD Determination for the 260-MW Polk Unit I in Appendix D, as well as EPA comments to FDEP on the Preliminary PSD Determination). In addition, Tampa Electric Company's proposed use of low-sulfur and low-ash fuels would minimize emissions of SO_2 and PM.

Coal and slag handling systems would be designed to effectively control fugitive emissions of PM. The coal dust control system would be a combination of controls and would include unloading in an enclosed building, enclosed coal storage silos, enclosure of certain coal conveyors, baghouse particulate control at transfer points,

water sprays, and wet coal grinding in the rod mills. Slag would be piped wet to minimize or eliminate potential fugitive dust emissions.

Surface Water Resources

Storm water runoff not associated with industrial activity on the site would be treated and discharged in compliance with federal, state, and local regulations and guidelines regarding water quality treatment and management of peak and mass storm water flows to minimize any potential effects.

The cooling reservoir would be designed to minimize discharges to surface drainage systems while maintaining water quality within the reservoir. Based on water balance and water quality modeling conducted by Tampa Electric Company, the proposed average annual discharge of 3.1 mgd was determined to be the minimum discharge that would still result in meeting all FDEP Class III surface water quality standards. Since the proposed discharge from the reservoir is expected to meet Class III surface water quality standards, potential water quality impacts on downstream receiving water bodies would be minimized. The proposed cooling reservoir would also minimize the potential for downstream flooding due to storm events by acting as a storage basin for on-site runoff. In addition, the reservoir and other on-site storm water retention basins would be designed to detain in excess of the first inch of runoff from a 25-year, 24-hour storm event in compliance with FDEP and SWFWMD storm water management regulations.

In order for the Polk Power Station to legally operate as proposed, an EPA NPDES permit for a new source would be needed for the discharge of water to waters of the United States. This permit would minimize impacts to the Little Payne Creek system by controlling the discharge of effluent constituents. A copy of the EPA draft NPDES permit is provided in Appendix A.

Groundwater Resources

During operation of the proposed Polk Power Station, groundwater would be withdrawn from the Floridan aquifer to provide makeup water for the cooling reservoir and for other potable and process water uses. The annual average and peak month withdrawal rates for groundwater from the Floridan aquifer are expected to be approximately 6.6 and 9.3 mgd, respectively. The potential impact due to operation of the proposed Polk Power Station under steady-state average withdrawal conditions (6.6 mgd) would be a drawdown of approximately 4.6 ft at the site boundaries and average drawdowns of approximately 1.6 and 0.8 ft at the existing Hardee Power Station and the proposed FPC power station facility, respectively. Potential drawdowns under the modeled 45-day transient conditions with peak month withdrawal rates (9.3 mgd) would be somewhat greater; however, these conditions would be temporary and are not expected to adversely impact groundwater resources or uses in the site vicinity.

Within each of the two proposed well fields, two production wells would be spaced approximately 350 ft apart to allow a better efficiency for the pumps and the wells to operate within their designed pumpage ranges. Additionally, this spacing would distribute and minimize the drawdown within the cone of depression.

The cooling reservoir was designed to recycle cooling water in a way that maximizes reuse and minimizes Floridan aquifer withdrawals and surface discharges while maintaining water quality within the reservoir. The proposed design minimizes the drawdown and withdrawal impacts to the Floridan aquifer and minimizes potential adverse water quality impacts to the surficial aquifer due to seepage out of the reservoir.

Potential chemical effects to the surficial aquifer could result from accidental spills of chemicals and other materials. To prevent and manage potential spills from the chemical handling and storage areas, a preliminary SPCC Plan and a preliminary RCRA Contingency Plan have been developed by Tampa Electric Company (see DEIS, Appendices T and U). A BMP Plan with pollution prevention conditions for the proposed project operations is also included in the EPA draft NPDES permit (see Appendix A). Implementation of the measures outlined in these plans would limit the possibility of an accidental spill or leachate from plant facilities from actually affecting groundwater.

No karstic features are likely to occur (Figure 3.4.4-1), have been documented (Figure 3.4.4-3), or were detected by the on-site borings at the proposed locations of the Polk Power Station facilities (TEC 1993b). However, ancient karstic features within the Polk Power Station site could exist undetected. These features could reactivate naturally, or in response to the pumping and/or surface water management activities associated with the proposed project. An open sinkhole would potentially allow direct discharge of potentially contaminated surface waters to the deeper aquifers (intermediate or Floridan aquifers, depending on the depth of the sinkhole) without the benefit of treatment by percolation. In the event of the activation of a sinkhole within the Polk Power Station site, Tampa Electric Company would take reasonable measures such as diversionary berms and/or swales to restrict direct discharge of surface waters to the sinkhole.

Aquatic and Terrestrial Ecology

Terrestrial or wetland communities within the property boundaries are not expected to be adversely affected by the proposed plant operations. None of the federal- or state-listed plant species discussed in Section 3.5.4 would be affected by plant operations. Vegetation would become established along the littoral edges of the cooling reservoir and vary in species composition and abundance depending on the water level fluctuations associated with surface water runoff, groundwater seepage, discharges, and rainfall. The net effect of the proposed wetland mitigation and overall site reclamation/development plans would be to increase the acreages of wildlife habitats compared to the acreages that existed prior to mining or that currently exist on the site. Wetland acreage would be increased over premining conditions and, therefore, could result in larger wetland-dependent wildlife populations on the site.

Following construction of the power station and reclamation of the site, water levels in the created and existing wetlands and water bodies would stabilize. Air emissions, groundwater withdrawals, wastewater discharges, noise, and traffic would not result in significant changes to biological resources on the site and surrounding areas. As discussed in Section 5.6, Tampa Electric Company's proposed reclamation plan would include the development of a 1,511-acre wildlife habitat/corridor area on the portion of the site located west of SR 37. This reclamation would occur in addition to the proposed wetland mitigation plans (see Section 5.2.3.4) for site areas east of SR 37. Therefore, no additional mitigation is considered necessary for potential biological effects from the proposed project operations.

The proposed operation of the Polk Power Station would not significantly affect regional populations of wildlife species, particularly those that are locally endangered, threatened, or species of special concern. Although not all portions of the cooling reservoir would meet Class III water quality standards, the reservoir would provide habitat for fish, reptiles, wading birds, and many species of migratory water fowl. Overall, additional wetland and upland habitats would be restored or enhanced in place of disturbed mined lands. The proposed reclamation plan for the western tract of the site as a wildlife habitat/corridor area would provide the creation and maintenance of quality wildlife habitats on the Polk Power Station property.

Cooling reservoir blowdown would be discharged at an average rate of approximately 3.1 mgd. This relatively small amount of water would have two hydrological and ecological benefits to Little Payne Creek downstream of the site. First, the average volume of water entering the creek would be increased slightly over premining conditions (<2 cfs), which would help maintain water in the creek on a more permanent basis, especially during dry seasons. Second, the peak flood levels would be reduced in exchange for a more constant flow throughout the year. These two benefits should serve to maintain aquatic habitats year round, thereby enhancing use of the system by aquatic organisms. Since the water discharged from the cooling reservoir is predicted to meet FDEP Class III surface water quality standards, no adverse effects on the composition or diversity of fish in the creek is expected and the more constant flow may benefit certain species.

Since the majority of the natural communities that occurred within both the northern and eastern corridors and the immediate adjacent areas have been altered by mining or road construction, it is not anticipated that transmission line maintenance would have significant effects on vegetation, wildlife, or aquatic life. Efforts were made during the corridor selection to avoid potentially sensitive habitats. The avoidance of ecologically unique or valuable habitats was achieved primarily through locating the proposed corridor parallel to SR 37 and/or crossing of lands that have been previously altered in conjunction with mining.

Global Climate Change

The operation of the proposed Polk Power Station would contribute to the global greenhouse effect due to significant fuel combustion (also see Section 4.13.1.2). No federal requirement presently exists to mitigate global warming impacts. However, as indicated in Section 5.2.3.6, Tampa Electric Company proposes to plant trees and other vegetation to partially offset project global climate change impacts due to the proposed project operations.

Noise

Typical operation noise of the proposed Polk Power Station would be attenuated by the distances to the nearest considered residential areas (1.6, 1.9, and 4.2 miles from the proposed power block). In addition, an approximately 200-ft wide evergreen/hardwood vegetative buffer would be established along site boundaries with public roadways to provide some noise attenuation and visual screening.

Tampa Electric Company would also take into consideration noise-reduction measures as it evaluates equipment and prepares the detailed designs for the plant facilities. Potential noise control design options include silencers for the CT air intakes and the requirement that vehicles on the plant site travel at slow speeds. These measures would reduce noise levels at nearby residences.

Project truck peak-hour noise levels are predicted to be below existing peak-hour traffic noise levels, although pass-by single events would be elevated (e.g., 85 dB $L_{eq(1)}$ at the nearest residence at 85 ft from edge of roadway). It should be noted that the number of residences/people along the considered 250-ft corridor along the proposed coal delivery route within the 5-mile project radius is relatively sparse (five residences), truck traffic is not a new noise along the proposed route due to existing phosphate mining, and Tampa Electric Company will also provide a special toll-free telephone number (1-800-282-4667, Extension 34269) to consider public comments related to plant construction and operation. Further minimization of project truck noise would be difficult since the truck delivery route is off site. However, truck delivery scheduling may be one option for Tampa Electric Company to consider to minimize nighttime disturbance.

Cultural Resources

Based on coordination with the Florida SHPO, no effects are expected from project operations at the proposed site. Therefore, no mitigative measures are proposed. Coordination with FDHR regarding potential effects to cultural resources along the alignments of project off-site linear facilities (transmission line and natural gas pipeline) is pending. Coordination with FDHR for the adjoining rail spur has been conducted (see Appendix B; also DEIS, Appendix Q).

Socioeconomic Conditions

No long-term adverse effects on socioeconomic conditions in the site vicinity or within the region are expected; therefore, no mitigative measures are proposed. It is expected that 95 percent of the operational work force would be drawn from the local labor pool in Polk, Hillsborough, Manatee, and Hardee counties, and only 5 percent (11 persons) of the operational work force at project build-out would be drawn from outside the region. Since the majority of employees would be commuting from their existing residences, no significant increase in demands on regional housing, transportation, or public services and facilities would occur due to the proposed project operations.

Land Use, Recreation, and Aesthetics

The proposed operation of the Polk Power Station is consistent with existing land-use patterns; zoning regulations; and county, regional, and state level comprehensive plans. After the proposed construction, only the taller plant structures would be potentially visible from nearby public viewpoints, and these would be a minimum of 2,500 ft from the nearest public viewshed. In addition, the proposed site development/reclamation activities would include the creation of planted vegetative buffer areas along public roadways around the site. Since the property tract to the west of SR 37 would develop as a wildlife habitat/corridor area and no power plant facilities would be located on this tract, aesthetic and visual qualities of this portion of the site should be enhanced over existing conditions for most observers. Operation of the proposed Polk Power Station would not adversely affect off-site recreational facilities. Since expected land-use, recreation, and aesthetic impacts are negligible, no additional mitigative measures are proposed.

Transportation

No adverse transportation effects are projected to result from operation of the proposed Polk Power Station. All roadway links and intersections within the traffic impact area would continue to operate at LOS C or better, even with the traffic generated from plant operation in conjunction with construction traffic for future generating units after those for Polk Unit 1. Effects from operations would result in one road segment decreasing from LOS B to LOS C and five road segments declining from LOS A to LOS B. All other road segments, analyzed in conjunction with Polk County guidelines, would continue to operate at their existing LOS. In addition, day-to-day operation at the plant at build-out would not result in lowering of the LOS at any intersection. If the proposed project is implemented, Tampa Electric Company will provide improvements at the intersection entrances to the site and will repair and maintain entrances as needed. A monitoring program will be conducted by Tampa Electric Company in 1995, 1996, and 1997 to determine the need for any improvements to the intersection at CR 630 and SR 37 and the intersection at CR 630 and Fort Green Road due to project-related traffic. Tampa Electric Company will either install traffic signals or make geometric improvements to these intersections if the traffic monitoring program shows that these improvements were needed as a result of traffic to and from the Polk Power Station.

Human Health and Wildlife Risks

An air emissions study was conducted to assess potential human health effects from the proposed Polk Power Station operation (see Section 4.12.2). Based on the results of this assessment, under proposed normal operating conditions, the proposed project is not expected to have significant adverse risk effects on human health as a result of direct human inhalation of emissions from the proposed facilities. The total individual cancer risk is estimated at the 1.8×10^{-6} level or less than two persons out of every one million and the noncarcinogen exposure level is predicted to be below the Florida No-Threat Level, given the protective assumptions and models used in this EIS (see Sections 4.1 and 4.12). The project is also not expected to have an unacceptable risk to resident wildlife (see Section 4.12.2).

Also, no human health effects are anticipated as a result of EMFs from the proposed transmission lines, or from wastewater discharges to surface waters or groundwater. Based on the results of predictive modeling, the operation of the proposed transmission lines would be in compliance with FDEP requirements for EMF levels within and at the edge of the transmission line rights-of-way. Both the proposed transmission lines and existing transmission lines that would be interconnected would be in compliance with the Florida EMF Rule (17:17-274, FAC) for 230-kV transmission lines. Therefore, no mitigative measures are proposed. Based on the results of wildlife risk assessment presented in Section 4.12.2, air emissions from the proposed project operations are not expected to adversely impact wildlife.

Energy Resources

No adverse effects to energy resources are expected from the proposed Polk Power Station operations. The proposed project would produce electrical energy for use within the Tampa Electric Company service area and in other areas within the Florida electrical transmission line grid system to meet future power demands. The proposed IGCC unit (Polk Unit 1) would use coal as its primary fuel which is the most abundant energy resource in the United States. The IGCC generation technology is also more efficient than conventional PC technology in the conversion of energy in coal to electricity. The proposed stand-alone CC and CT units would have the capability to use either natural gas as primary fuel or low-sulfur fuel oil as backup fuel in order to provide flexibility in energy source use based on the future availability and costs of these fuels.

5.3 UNAVOIDABLE ADVERSE IMPACTS

Construction and operation of the proposed Polk Power Station are expected to result in certain adverse environmental effects despite the use of an area previously mined for phosphate, careful siting of the proposed facilities to minimize impacts, and use of state-of-the-art power generation facilities and pollution control equipment and systems.

5.3.1 Air Resources

The implementation of the proposed air pollution control measures and technology would minimize adverse air quality effects from the construction and operation of the proposed facility. However, all potential for adverse effects would not be eliminated using the proposed control measures. While the proposed project emissions would affect the air resources in the area, the proposed emissions and predicted potential impacts would comply with all applicable Federal and State of Florida AAQS and PSD Class I and Class II air increment consumption requirements. Therefore, the proposed emissions are not anticipated to cause significant adverse effect (see Section 4.1 for further discussion).

5.3.2 Land Resources

Construction and operation of the proposed Polk Power Station would require the use of approximately 1,090 acres of land that has been previously disturbed by mining activities. Approximately 834 acres would be used for the cooling reservoir and associated berms, and approximately 150 acres for the power block area. This land, along with approximately 3,300 acres of mined area on the proposed site, would have to undergo disturbance by site reclamation in accordance with FDEP phosphate mined land reclamation requirements even if the proposed project was not implemented. Approximately 253 acres of USACOE jurisdictional wetlands (41 acres of highly stressed wetlands and 212 acres of phosphate mine cuts) would be lost in the proposed area for the power plant facilities and cooling reservoir. In addition, construction of the power plant and associated facilities would result in the displacement and some loss of wildlife species currently inhabiting the area. These effects are considered unavoidable disturbances if the proposed project is constructed and operated. Again, most of these disturbances would occur on the mined site areas due to FDEP-required reclamation even without the proposed project. Tampa Electric Company has proposed to create or enhance approximately 169 acres of wetlands as mitigation for the loss of the 253 acres of USACOE jurisdictional wetlands (see Section 5.2.3.4).

5.3.3 Water Resources

Unavoidable effects to the surface water resources of the site would include the temporary dewatering of areas within the surficial aquifer during construction of the proposed cooling reservoir, other site facilities, and reclaimed wetland areas. These potential impacts would be minimized by the retention of dewatering water within adjacent basins on the site and recharge from these holding basins to the surficial aquifer. Tampa

Electric Company would also implement a construction dewatering monitoring and mitigation plan to minimize any off-site dewatering impacts (see DEIS, Appendix S).

Operation of the proposed Polk Power Station would result in the average withdrawal of approximately 6.6 mgd from the Floridan aquifer for use as makeup water for the cooling reservoir and for process and potable water uses. This withdrawal would result in the drawdown of the potentiometric surface of the Floridan aquifer of approximately 4.6 ft at the site boundaries which is in compliance with the SWFWMD requirement of less than a 5-ft drawdown at site boundaries. Potential drawdowns of the Floridan aquifer due to the proposed project operations would not adversely impact other legal water uses in the site area.

5.3.4 Sensitive Areas

Based on an on-site inspection, USACOE has determined that approximately 253 acres of mine cuts and highly stressed wetlands are jurisdictional under the Section 404 permitting process and would be adversely impacted by the proposed project construction. If the proposed project is implemented, 253 acres would be filled for the construction of the cooling reservoir and plant facilities. For the site proposed by Tampa Electric Company, this proposed filling of jurisdictional wetlands represents an unavoidable adverse effect due to the proposed Polk Power Station. Tampa Electric Company proposes to compensate for this loss by the enhancement/creation of approximately 169 acres of wetlands, subject to USACOE approval during the Section 404 permitting process (see Section 5.2.3.3 and 5.2.3.4)

5.4 RELATIONSHIP OF SHORT-TERM USES OF MAN'S ENVIRONMENT AND MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

During the proposed operational life of the Polk Power Station, certain air, water, and land resources of the site would be committed to the production of electric power. Additional land would be committed for the rights-of-way for the proposed transmission lines, natural gas pipeline, railroad spur, and access roads.

The production of electricity at the Polk Power Station would help to support tourism and other productive industries within the Tampa Electric Company service area and within those of other utilities purchasing power generated from the site through the Florida transmission grid system. This electric power would also help to accommodate the projected increase in electricity demands due to projected population growth in the Tampa Electric Company service area. The proposed Polk Power Station would assist Tampa Electric Company to meet its obligation as a public utility to provide reliable and cost-effective electric power to its customers.

5.5 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

Construction of the proposed Polk Power Station would require the commitment of approximately 1,090 acres of land for the power block, cooling reservoir, and associated facilities. Additional land would be required for the rights-of-way for associated linear facilities.

Operation of the proposed Polk Power Station would require the withdrawal of an annual average of 6.6 mgd from the Floridan aquifer. This water would be used for makeup water to the reservoir, industrial process water uses, and potable water uses.

Coal consumption for the 260-MW proposed IGCC unit would average approximately 2,325 tpd (dry basis) assuming operation at full load. Natural gas is the primary fuel for the stand-alone CT and CC units. At full load, after Tampa Electric Company's proposed full build-out to 1,150 MW, these CT and CC units would use approximately 11,000,000 ft^3/hr of natural gas. Fuel oil would be used as a backup fuel for the IGCC unit and the stand-alone CC and CT units in the event that the CG facilities were unavailable to provide syngas for the IGCC unit or the natural gas supply for the other units was interrupted. Under these events, the consumption of fuel oil would be approximately 13,500 gallons per hour for the IGCC unit operating in the CC mode and approximately 77,000 gallons per hour for the stand-alone CC and CT units at full build-out and full-load operations.

Additional energy resources would be committed for the operational life of the plant to transport coal, fuel oil, by-products, and other necessary supplies to and from the proposed power plant site by rail and/or truck and by workers commuting to and from the site during construction and operation.

5.6 PROPOSED SITE RECLAMATION MEASURES

In addition to the previously described project mitigation proposed by Tampa Electric Company for the proposed site, FDEP-required reclamation measures would also be implemented for the site. The proposed mitigation/reclamation/development plan for the proposed Polk Power Station site would result in 799 acres of wetlands (of which 543 are required on mandatory lands) after reclamation of the site is completed. The 799 acres of wetlands represent a net increase of 187 acres of wetlands relative to site premining conditions (see Table 5.2.3-1).

As the owner of the proposed site, Tampa Electric Company will be responsible for the reclamation of phosphate-mined areas on the site whether the proposed Polk Power Station project is constructed or not. The site reclamation process is required by FDEP and is a process that is separate from project mitigation and the EIS NEPA process. However, the Tampa Electric Company reclamation plan is documented below since it will significantly affect the site environment. As part of the site certification review and approval process, Tampa Electric Company has prepared and submitted a site reclamation plan to FDEP that assumes project construction. The previously described project mitigation will be considered toward site reclamation, so that the mitigated acreage (168.41 acres) is included in the total site reclamation acreage (799 acres), as presented in Table 5.2.3-1.

5.6.1 Proposed Site Reclamation Plan Objective and Criteria

Section 211, F.S., and Chapter 16C-16, FAC, prescribe the State of Florida requirements to reclaim lands mined for phosphate subsequent to July 1, 1975, commonly referred to as "mandatory lands." Reclamation of lands mined prior to July 1, 1975, is not mandatory; however, state severance tax-based funding is available to reimburse owners of certain "nonmandatory" lands for some or all of the cost of voluntary reclamation activities. Nonmandatory reclamation is governed by Section 378, F.S. and Chapter 16C-17, FAC. Both of these regulatory programs are administered by FDEP. The Polk County Phosphate Mining Ordinance 88-19 also prescribes the requirements for reclamation of mined lands in the county.

The proposed Tampa Electric Company reclamation plan for the proposed Polk Power Station project was designed with the following major objectives and criteria (excerpted from TEC, 1992a):

- Re-establish watershed divides to the greatest extent possible in their premining location and re-establish drainage basin runoff flow patterns to premining conditions in accordance with applicable FDEP and SWFWMD requirements
- Increase the post-reclamation wetland acres above premining conditions to provide an offset for not meeting the specific requirements of Chapter 16C-16.0051(5)(a), FAC, within the cooling reservoir

- Create a contiguous system of wetlands and forested uplands where possible to provide for wildlife corridors between existing known systems at the site boundaries and linkage of wildlife habitat into the existing corridor system that would help restore site biodiversity
- Create wetland and upland reclamation designs that provide or enhance wildlife habitat systems of primary importance to threatened and endangered species

As summarized below, Tampa Electric Company's proposed reclamation plan is designed to optimize all of these criteria within the constraints of the project location and operational requirements. Specific details of the final reclamation design, figures, and tabular comparisons are provided in the Conceptual Reclamation Plan Application submitted to FDEP in conjunction with the state site certification process. Properly implemented and managed, the overall reclamation plan for the preferred site would facilitate the restoration of premining hydrologic and wildlife habitat conditions on the site.

5.6.2 Proposed Site Reclamation Plan Standards

Tampa Electric Company's proposed plans are designed to fulfill each of the 12 reclamation and restoration standards contained in Chapter 16C-16.0051, FAC, as discussed in Section 9.1.4 of the SCA (TEC, 1992a). Standards that apply to wetlands, water bodies, and wildlife habitats are discussed below:

- Backfilling and Contouring--Tampa Electric Company proposes to completely satisfy the requirement to grade all lands to a 4-ft horizontal to 1-ft vertical slope, or gentler, including the surrounding and interior berms of the cooling water reservoir.
- Wetlands--Tampa Electric Company proposes to satisfy completely the requirement to restore wetlands on an acre-for-acre, type-for-type basis. The acreage tabulations from the premining vegetation and land use and the post-reclamation land use and vegetation maps are summarized in Table 5.2.3-1 to demonstrate compliance with this requirement. Implementation of Tampa Electric Company's proposed reclamation plan would result in 187 additional acres of wetlands on the overall site compared to premining conditions. This overall increase in wetland acres would not include the contribution of the cooling reservoir edge, but would be intended to augment these acres with high quality wetland acres separate from the reservoir.
- Water Bodies--Tampa Electric Company has optimized the design of artificially created water bodies that drain into Little Payne Creek, Payne Creek, and/or the South Prong Alafia River. In response to FDEP's recommendation, Tampa Electric Company has designed the proposed cooling water reservoir to maximize its thermal efficiency. With the exception of the cooling water reservoir, all other water bodies would be reclaimed to be consistent with health and safety practices, be modeled to maximize beneficial contributions within local drainage patterns, be graded to balance deep and shallow water

(≤18 inches) and provide high ratios of various shoreline slopes, and be revegetated to provide aquatic and wetland wildlife habitat values as discussed below:

- Annual Zone of Fluctuation--Tampa Electric Company proposes to satisfy this requirement for reclaiming the equivalent of 25 percent of the total highwater surface area to an annual zone of fluctuation. Tampa Electric Company would intentionally not meet the requirement to hydrologically connect these wetlands to the cooling water reservoir because such a connection would not be considered beneficial. Instead, Tampa Electric Company is proposing to reclaim an acreage outside of the reservoir equivalent to more than 25 percent of the highwater surface area of the cooling water reservoir as wetlands that would be connected to receiving streams. Tampa Electric Company has requested FDEP approval of this plan as being preferable to hydrologically connecting these wetlands to the cooling water reservoir.
- Shallow Water Zone--Tampa Electric Company would design and grade a shallow water zone into the slopes of artificial water bodies located on mandatory lands that drain into the South Prong Alafia River, Payne Creek, and Little Payne Creek. The proposed Tampa Electric Company cooling water reservoir would contain approximately 60 acres of shallow water zone that could be applied to this requirement of 143 acres (i.e., annual low water x 20 percent). Tampa Electric Company has applied for a variance from full compliance with this requirement in the Conceptual Reclamation Plan Application submitted to FDEP.
- Perimeter Greenbelt--Tampa Electric Company would design and vegetate a perimeter greenbelt of vegetation consisting of tree and shrub species indigenous to the area around any proposed lake in accordance with this requirement. Tampa Electric Company does not propose to satisfy this requirement for the cooling water reservoir because the reservoir berm precludes the intent of the greenbelt under Subsection 2 of this rule. Tampa Electric Company plans to reclaim an additional 100 acres to forested conditions in compliance with the standards contained in Chapter 16C-16.051(9)(c), FAC. This acreage is based upon 35,000 ft of shoreline in the cooling water reservoir; application of a 120-ft wide perimeter greenbelt would result in reforestation of 100 acres.

- Revegetation--Tampa Electric Company proposes to meet or exceed all of these requirements.
- Wildlife--Tampa Electric Company proposes a reclamation plan for the 1,511 acres of the site that lie west of SR 37 to provide habitat for wildlife. A mixture of wetlands and uplands would include the creation of a wildlife corridor between the headwater areas of

Payne Creek, Little Manatee River, and South Prong Alafia River systems. Ownership and controlled access by Tampa Electric Company would protect the development of this area as a wildlife habitat/corridor area.

Further, Tampa Electric Company is planning similar uses for the majority of the 775-acre tract previously owned by American Cyanamid located along the northern border of the eastern tract. Approximately 1,090 acres of the entire site would be developed to an industrial use including the cooling reservoir area; the remaining 78 percent of the project site would be buffer and wildlife habitat. Tampa Electric Company proposes that this high percentage of wildlife habitat would provide appropriate mitigation and compensation for not meeting all the reclamation standards.

5.6.3 Description of Reclaimed Land Use/Cover

Table 4.5.4-1 lists the acreages of the various land-use/cover categories for premining, disturbed, and reclaimed land. Premining acreages refer to the land uses and cover present on the site prior to 1981. Although mining occurred prior to 1981, no figures are available for land-use/cover at that time. Disturbed acreages by FLUCCS category include all disturbances from mining and power plant/transmission line development for pre- and post-1992 site conditions. Reclaimed acreages by FLUCCS categories are based on both the post-reclamation plans that were previously approved for Agrico's Fort Green Mine and the proposed plans by Tampa Electric Company for the Polk Power Station site. As indicated in Table 4.5.4-1, taken collectively, the dominant land forms to be restored on the site, according to Tampa Electric Company's proposed reclamation plan, include improved pasture, forested uplands, forested wetlands, and nonforested wetlands, in addition to the cooling reservoir area.

According to Tampa Electric Company's proposed reclamation plans, approximately 744 acres of improved pasture have been or would be planted in forage grasses and legumes. This pastureland would be a dominant vegetation type on the site. Pasture was chosen because of the following reasons:

- Seeding the majority of land with grasses stabilizes reclaimed soils, limits erosion, encourages the development of organic matter, and increases nutrient/moisture retention
- A total of 141 acres of pasture located underneath the electrical transmission lines and over the gas transmission line allows for easy maintenance and accessibility

The particular grass and legume species to be planted would be selected based on soil characteristics, topography, and other site-specific attributes.

Approximately 829 acres of upland forest would be left intact or reclaimed on the site. Whenever possible, these forest types would be mulched with topsoil acquired from donor sites and then planted with native xeric and/or mesic species common to the region. Reclaimed hardwood forest would be planted with a variety of hardwood tree species, such as laurel oak, water oak, live oak, sweet gum, persimmon, and black cherry. However, the actual composition of planted seedlings would depend upon the availability of various species from commercial native plant nurseries. Bare root, potted, or containerized seedlings would be planted in a random pattern to yield an initial density of 200 trees per acre. Reclaimed upland forest would also be planted with pines and oaks. Slash pine, longleaf pine, and various oak seedlings would be hand planted in a random pattern to ensure a final density of 200 trees per acre for the reclamation of oak/pine woods. Other understory native woody and herbaceous species, such as gallberry, saw palmetto, dwarf live oak, running oak, gopher apple, prickly pear, and others would also be planted randomly throughout each oak/pine woods area to mimic a typical flatwoods understory stratum. All planting densities would meet or exceed densities based upon FDEP reclamation rules (Chapter 16C-16.0051(9), FAC). The final selection of herbaceous and understory woody species and the timing/spacing of plantings would be based upon the availability of nursery-grown plant species at the time of planting and past success with similar plantings on reclaimed lands.

As discussed in the following paragraphs, Tampa Electric Company's proposed reclamation plan would provide for the reclamation of all premining acreages of forested and nonforested wetland types on the site disturbed by mining, power plant development, and related activities. Wetlands within mined areas would mostly be created by recontouring overburden to create a topography resulting in a favorable hydroperiod. The regraded lowland areas would then be planted with indigenous aquatic herbaceous, shrub and/or tree species. Species selected for planting would be based upon the community type to be created and the on-site dominant plant species associated with the reference wetland types previously mined. The reclaimed wetlands are proposed to be located on the site tracts both to the east and west of SR 37 within all three of the on-site drainage basins: South Prong Alafia River, Payne Creek, and Little Payne Creek. An approximate net increase of 187 acres of wetlands relative to premining conditions would be created, enhanced, or reclaimed due to project wetland mitigation and site reclamation plans (see Table 5.2.3-1).

Approximately 371 acres of freshwater swamp would either be reclaimed or left in an undisturbed condition on the site. Reclaimed hardwood swamp would be planted with a mixture of aquatic hardwoods, such as swamp redbay, red maple, black gum, sweet bay, dahoon holly, buttonbush, and wax myrtle. In addition to the referenced hardwood species, approximately 310 acres of the site would also be planted with pond and/or bald cypress for the creation of mixed conifer-hardwood swamp. All of the swampland would also be planted with herbaceous hydrophytes (such as maidencane, pickerelweed, and arrowhead) in the ground stratum. Bare root, potted, or containerized seedlings would be planted to ensure a final density of 400 trees per acre. Tree cover would exceed 33 percent of the vegetational cover 5 years after planting, and in a one-acre area the tree

cover would be less than 20 percent. Herbaceous vegetation would be planted on 3-ft centers and, thereafter, allowed to reproduce naturally within the forested wetland.

Approximately 428 acres of freshwater marsh would either be reclaimed or left in a pre-existing condition on the site. The proposed revegetation plan for these marshes would be to plant bare root or liner-size wetland herbs on 3-ft centers. Aquatic macrophytes would be used for marsh restoration, include arrowhead, maidencane, pickerelweed, sand cordgrass, and fire flag. These reclaimed marshes would need to exhibit a plant cover of at least 80 percent of desirable wetland species per each restored acre after two growing seasons.

5.6.4 Wetland Reclamation

FDEP is the lead state agency on wetland reclamation success criteria. Specific conditions were developed in the SCA process.

Prior to construction, Tampa Electric Company is required to submit final planting plans to FDER for all areas to be reclaimed as wetlands. The plans are to include plan views and cross-sections showing the species to be planted at the various elevations. The plans are to specify the size of the plants to be planted and the source of the plants.

Also, prior to construction, Tampa Electric Company will submit a detailed management plan for the reclaimed wetlands to FDEP for review. Upon approval, the plan would be fully implemented and would be made part of the site certification. The management plan will include, but not be limited to, frequent assessment and regular removal, if present, of any nuisance and exotic species and supplemental plantings of wetland species (including groundcover, shrubs and trees) to simulate a natural floristic composition in the shrub and groundcover strata in the forested wetlands. Specific details for all aspects of the plans will be included, such as specific time intervals for nuisance species assessments and planting densities. The management and maintenance actions by Tampa Electric Company would be fully described in the required annual monitoring reports submitted to FDEP.

Tampa Electric Company will plant the areas to be reclaimed as hardwood forest with a mixture of woody species at a density of 800 trees/acre. The species will be a mixture, including but not limited to, the following species: *Acer rubrum* (red maple), *Gordonia lasianthus* (loblolly bay), *Fraxinus caroliniana* (pop ash), *Nyssa sylvatica* var. *biflora* (black gum), *Magnolia virginiana* (sweet bay), *Liquidambar styraciflua* (sweetgum), *Ilex cassine* (dahoon holly), *Persea palustris* (swamp bay), and *Ulnus americana* (elm). In addition to the woody species, these areas will be planted on 3-ft centers with a mixture, including but not limited to, the following herbaceous species: *Panicum hemitomon* (maidencane), *Pontederia cordata* (pickerelweed), *Sagittaria* sp. (arrowhead), *Saururus cernuus* (lizard's tail), *Woodwardia* sp. (chain fern), and

Juncus sp. (bog rush). The woody species and the herbaceous species will be planted at elevations within the reclaimed wetlands that will provide hydroperiods appropriate for the species.

Tampa Electric Company will plant the areas to be reclaimed as mixed forest with *Taxodium distichum* (bald cypress) in addition to the woody and herbaceous species listed for the hardwood forest areas at densities specified for the hardwood forest areas. The woody species and the herbaceous species will be planted at elevations within the reclaimed wetlands that will provide hydroperiods appropriate for the species.

Tampa Electric Company will plant the areas to be reclaimed as herbaceous wetlands with a mixture, including not limited to the following herbaceous species: *Panicum hemitomon* (maidencane), *Pontederia cordata* (pickerelweed), *Sagittaria* sp. (arrowhead), *Spartina bakeri* (cordgrass), *Thalia geniculata* (arrowroot), and *Juncus* sp. (bog rush). These herbaceous species will be planted at elevations within the reclaimed wetlands that will provide hydroperiods appropriate for the species.

5.6.5 Criteria for Reclamation Success

In accordance with the FDEP conditions for site certification, freshwater herbaceous wetland reclamation would be considered successful when the following criteria are met:

- Percent cover by non-nuisance, nonexotic wetland species shall be 80 percent or more. Percent covers for the aggregate of those wetland species, and of nonwetland species, bare ground and water shall be reported relative to the total area. A list of the wetland species included in the aggregate shall be included. Wetland species shall be those listed in Rule 17-301.400, FAC.
- Nuisance species, such as *Mikania scandens* (climbing hempvine), *Typha* sp. (cattail), and *Ludwigia peruviana* (primrose willow), and exotic species are limited to 10 percent or less of the total cover with no one species being more than 5 percent of the total cover. If these species exceed 10 percent of the total cover, their density must be declining over several years, which would be considered a positive indication that they are under control.
- The reclaimed wetlands are constructed in accordance with the conditions of site certification under the PPSA.

These criteria must all be met at least one year after connection to waters of the state for sites that are severed from waters of the state during some or all of the establishment phase.

Forested wetland reclamation would be considered successful when the following conditions are met:

- An average of at least 400 wetland trees per acre shall be growing above the herbaceous stratum.
- The wetland species tree cover shall exceed 33 percent of the total area and in no area of an acre in size shall the tree cover be less than 20 percent total cover. Cover measurement shall be restricted to: (1) those trees exceeding the herbaceous stratum in height; and (2) those indigenous species that contribute to the overstory of the mature forest of the South Prong Alafia River and the Peace River and its tributaries and that are wetland vegetation listed in Rule 17-301.400, FAC.
- At least 80 percent of obligate groundcover (herbaceous) and obligate shrub (noncanopy woody species) vegetation shall be among those species listed in Rule 17-301.400, FAC, and shall be reproducing naturally, either normal, healthy, vegetative spread (in ways that would be normal for each wetland species) or through seedling establishment, growth and survival. Nuisance species such as *Mikania scandens* (climbing hempvine), *Typha* sp. (cattail) and *Ludwigia peruviana* (primrose willow), and all exotic species shall be limited to 10 percent or less of the total cover with no one species being more than 5 percent of the total cover. If these species exceed 10 percent of the total cover, their density must be declining over several years, which would be considered a positive indication that they are under control.
- The reclaimed wetlands are constructed in accordance with the conditions of site certification under the PPSA.

These criteria must all be met at least one year after connection to waters of the state for sites that are severed from waters of the state during some or all of the establishment phase.

5.6.6 Monitoring Program

Annual statistical reports will be provided to the FDEP describing, as appropriate, for each reclamation area: (1) the density and percent cover of listed trees, and (2) percent cover of listed and nonlisted herbaceous species, bare ground, and water. For forested wetlands, reports on canopy cover shall be submitted for not less than the third, fifth, and any subsequent years after planting until a determination of successful reclamation has been made by FDEP. Data for listed nuisance or exotic species will be tabulated separately from the remaining data (a listed nuisance or exotic species is one included in Rule 17-301.400 FAC). The annual reports shall also include an assessment of the jurisdictional status of each reclamation area. Data will be taken during the summer growing season. Reports will be submitted annually to FDEP within 60 days of data acquisition until a determination of a successful wetland reclamation has been made. The first annual statistical report data gathering will occur not later than one year after planting.

Following implementation of the proposed reclamation plan, monitoring will be performed, following acceptable methods as outlined in Mueller-Dombois and Ellenberg (1974), and Oosting (1956), until a determination of a successful reclamation is obtained from FDEP. At the end of the first three years of monitoring, Tampa Electric Company may request in writing that the monitoring program be reviewed by FDEP to determine whether or not the frequency or parameters of the monitoring program should be changed. If it is determined by FDEP, based on visual inspection and review of the monitoring reports that the reclamation is not trending toward success, Tampa Electric Company shall present within 30 days of FDEP's notification a plan of corrective actions containing methods and proposals to be reviewed and approved by the FDEP to ensure success of the reclamation effort. The plan of corrective actions shall be implemented within 90 days of written approval by FDEP.

Even though the existing wetlands on site were not FDEP jurisdictional, Tampa Electric Company has committed to planting densities, success criteria, and monitoring requirements which are equivalent to the specific conditions associated with most FDEP dredge-and-fill permits issued for wetland disturbance, and which exceed FDEP planting densities, success criteria, and monitoring requirements for reclamation of FDEP nonjurisdictional wetlands typically required under FDEP mined land reclamation requirements.

5.6.7 Undisturbed Lands

According to the proposed reclamation/development plans, approximately 1,042 acres of remnant, uplands, wetlands, and surface waters on the property following all current (i.e., subsequent to July 1, 1975) mining, power plant development, and reclamation activities would be relatively undisturbed by the project (see Figure 4.5.1-1). Except for some minor mining setback areas (69 acres) distributed along the northern boundary of the western tract, the areas to be left intact after all mining/development/reclamation ceases consist of six distinct and separate parcels of land. In the northwestern corner of the western tract of the site, all of the unmined portions within the area north of the existing FGT pipeline would be mostly left undisturbed, except for the creation of a vegetated, drainage swale. The swale would connect the western terminus of the South Prong Alafia River drainage basin on the property directly to the unnamed tributary of the South Prong Alafia River along the northwestern property boundary. The swale would almost be entirely located within improved pasture situated to the east of the unnamed tributary. Approximately 98 acres of remnant upland, wetland, and surface water communities (i.e., longleaf pine flatwoods, shrub and brushland, mixed hardwood swamp, mixed oak/pine forest, pasture, oak hammock, disturbed mixed marsh, citrus grove, a pond, and an intermittent creek) would be left at this location. An inactive bald eagle nest is located within the pine flatwoods at this locale. At another location in the northeastern corner of the western tract, approximately 46 acres of existing pasture located northwest of the FGT existing natural gas pipeline would be left intact.

The four remaining parcels to be left relatively undisturbed by the proposed project construction are situated in the eastern tract of the site. These parcels include a 33-acre area located at the southeastern corner of the eastern tract that contains 27 acres of pine flatwoods, three acres of marsh, and three acres of grassy altered land. This parcel also contains an abandoned eagle nest that was used by great horned owls in 1991. A 215-acre area located at the southwestern corner of the eastern tract just east of SR 37 would also not be developed. The land cover types within this parcel include marsh, mixed oak/pine forest, shrub and brushland, grassy altered land, and some lands disturbed by associated mining activities. This parcel contains marginally suitable habitat for a variety of plant and animal species, including Florida-listed taxa, such as the wild coco orchid. A third parcel to be left intact is located at the east-central edge of the tract. This 103-acre parcel contains 27 acres of reclaimed pasture, one acre of ditches, two acres of disturbed marsh, and a 73-acre reclaimed lake. The fourth area to be left intact is a large area covering the northern portion of the tract east of SR 37, west of Fort Green Road, and south of CR 630. The northeastern portion of this area consists of old mined but unreclaimed lands. This parcel mostly consists of pasture, naturally revegetated unreclaimed uplands, and wetlands and old mine cut lakes. The northwestern portion of this area has been recently mined and reclaimed and would also be left intact by the proposed power plant construction. This area now consists of reclaimed pasture, wetlands, and lakes.

5.6.8 Reclamation Schedule

Tampa Electric Company would proceed with the proposed site reclamation operations immediately after certification of the Polk Power Station site and project by the Florida Governor and Cabinet, as the Siting Board under the PPSA, and appropriate approvals to proceed by USACOE under Section 404 permitting requirements and/or EPA upon completion of this EIS process. Mining of the western tract of the property is expected to conclude in 1994. Reclamation of the overall site area would be completed within three years after mining ends, allowing two years for development/reclamation activities and one year for planting.

5.6.9 Descriptions of Subareas Within Reclamation Plan

Under Tampa Electric Company's proposed reclamation plan, the Polk Power Station site would be subdivided into nine different subareas as illustrated by Parcels A through I in Figure 5.6.9-1. Each of these subareas is discussed in detail below. As part of the proposed reclamation of the site for the Polk Power Station, Tampa Electric Company would reclaim/develop the entire western tract and portions of the eastern tract as wildlife habitat/corridor and mitigation areas.

5.6.9.1 Western Tract

According to Tampa Electric Company's proposed reclamation plan, the 1,511-acre western tract (Parcel I) west of SR 37 would be reclaimed and developed as a wildlife habitat/corridor area with an integrated system of forested and nonforested wetlands and uplands. The resultant post-reclamation land would have more wetland and forested upland acreages than existed under premining conditions. Detailed information on the

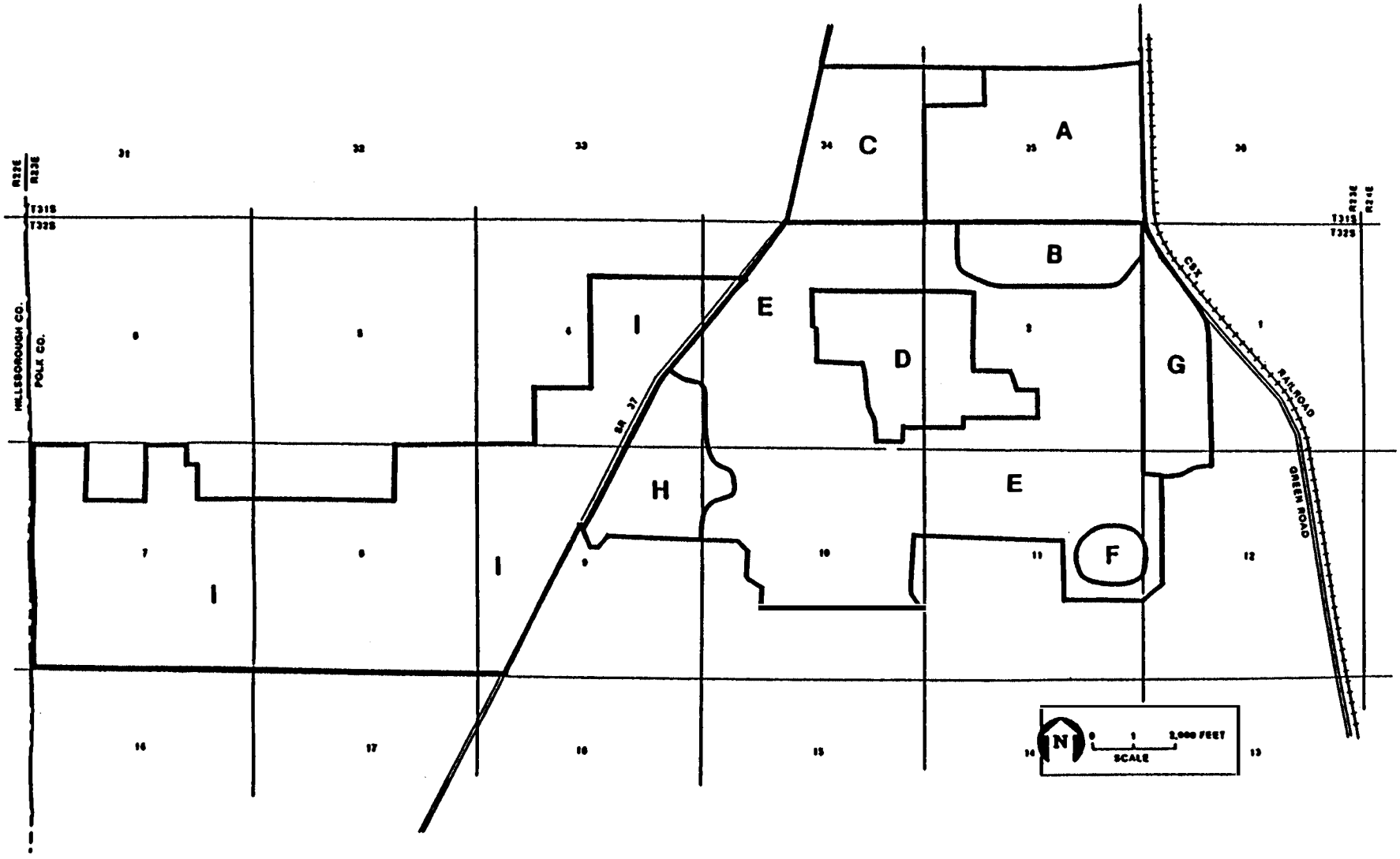

FIGURE 5.6.9-1.
Reclamation Status Parcels on Polk Power Station Site.

SOURCE: USGS, Duette NE, FL, 1972 and Baird, FL, 1987; ECT, 1992; TEC 1992a.

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proposed reclamation plan for this tract is presented in the Conceptual Reclamation Plan Application (TEC, 1992b).

As described in the Conceptual Reclamation Plan Application (TEC, 1992b), reclamation of the south-central portion of the western tract would re-establish watershed flows to Little Payne Creek comparable to premining conditions. The berm/upland area separating this system from areas to the east and west would be intended to create a band of upland mixed forest and transitional species to increase diversity.

Undisturbed areas along the northern border of the western tract would be left undisturbed except for enhancements of additional plantings of xeric species, such as scrub oaks and sand pines, where soil and hydroperiod are appropriate. The northwestern and northeastern portions of the western tract would be reclaimed as an integrated system of wetlands and uplands, incorporating upland forested edges, broad littoral zones, marshes, and some open water. Reclaimed upland areas would be reforested in much higher densities than required by typical FDEP-required mined land reclamation to create wildlife corridors instead of open pasture. The proposed wildlife habitat/corridor would connect the forested wetlands and uplands to the existing unnamed forested tributary to the South Prong Alafia River. The proposed increase in natural habitats as a result of reclamation on the western tract would help restore species diversity on the tract. No power plant facilities or structures are proposed to be located on this western tract.

5.6.9.2 Eastern Tract

According to its proposed site development/reclamation plans, Tampa Electric Company would locate the primary power plant facilities for the Polk Power Station in Parcel D (approximately 300 acres) on the eastern tract of the site. This parcel has not been mined, but has been significantly disturbed by adjacent mining activities. The parcel contains approximately 41 acres of highly stressed wetlands determined to be jurisdictional wetlands by USACOE (see Section 5.2.3-3). Proposed reclamation of this area would include vegetation removal, grading, and filling of the area for construction of the power plant facilities. Tampa Electric Company's proposed mitigation plan for the loss of jurisdictional wetlands in this area is described in Section 5.2.3.4.

Parcel E (approximately 1,697 acres) is an irregular shaped parcel of unreclaimed mined land that surrounds the proposed main plant facility site. Parcel E was mined after 1975 by Agrico and is subject to FDEP mandatory reclamation obligations. Approximately half of Parcel E would be converted into a primarily below-grade cooling water reservoir, as described in Section 2.3.2. The cooling water reservoir would be designed to be thermally efficient and occupy the smallest land area feasible to accomplish the required cooling needs. The remainder of Parcel E would be reclaimed as wetland and upland systems. The wetlands reclaimed on this parcel would also be part of the proposed wetland mitigation plan for the project (see Section 5.2.3.3) A large wetland area would be constructed in the western portion of Parcel E between SR 37

and Parcel D. The system would consist of a large herbaceous marsh with mixed wetland forest around the perimeter. At the suggestion of an NAS representative to the power plant siting committee, several upland islands would be constructed within the marsh as nesting sites for wildlife. The islands would be contoured with flat slopes that extend only slightly above mean high water elevations. They would be planted with transitional oaks, pines, and shrubs, such as wax myrtle, to provide cover. Extensive tree planting is proposed on the western boundary of Parcel E to enhance the site and provide a visual buffer from SR 37. A tree buffer should also be provided between this marsh and the proposed power plant.

Parcel A (approximately 400 acres and previously owned by American Cyanamid) was mined prior to 1940. There are no mandatory reclamation requirements associated with this parcel. Tampa Electric Company proposes to use this parcel primarily as a buffer for the proposed facilities and to locate the proposed eastern transmission line corridor from the existing line along Fort Green Road to the plant site. Proposed reclamation activities on this parcel consist of minor grading to facilitate construction of the transmission line and a service road, regrassing of this area, and planting a 150-ft wide forested area along the CR 630 and Fort Green Road rights-of-way to create a visual buffer for the main plant facilities.

Parcel B (approximately 127 acres and previously owned by American Cyanamid) was mined prior to 1940 and consists of a rectangular deep lake in an old mine cut, which is nearly divided into two cells. Four acres along the southern boundary of this parcel were disturbed by Agrico when the adjacent property was mined. Tampa Electric Company proposes to use this parcel as part of the storm water management system for runoff water not associated with industrial activity from the Polk Power Station. This proposed use would require only minor grading activities along the northwest and southeast corners of the lake to improve drainage into and out of the lake. These disturbed areas would be revegetated as forested and herbaceous wetland areas in accordance with Tampa Electric Company's proposed mitigation and overall site reclamation plans.

Parcel C (approximately 248 acres) was subject to a mining lease agreement between IMC Fertilizer and American Cyanamid. Although some of this land was mined prior to 1940, IMC Fertilizer re-mined this property during the 1987 to 1991 timeframe. Mandatory reclamation plans for this area have been approved by FDEP and the property has been reclaimed by IMC Fertilizer by grading overburden left at the site into upland pasture, lakes, and wetlands. Tampa Electric Company proposes to use this parcel primarily as a buffer area to the proposed plant facilities and the southern most lake and wetland areas of the parcel as a part of the site storm water management system for runoff from site areas not associated with industrial activity. These changes would be accomplished by grading an outlet swale to connect the reclaimed C lake and wetland system on this parcel with the plant site storm water drainage outlet to the south and to the old mine cut lake located on Parcel B to the east. The regraded swale would be revegetated to wetland vegetative conditions. The remainder of this parcel would not be affected by Tampa Electric Company's proposed plans. Some

supplemental tree planting is proposed along SR 37 and CR 630 to provide a visual buffer for the main plant facilities.

Parcel G (approximately 142 acres) is a rectangular shaped reclaimed lake and adjacent uplands. All of this land was mined by Agrico after 1975 and reclaimed pursuant to Chapter 16C-16, FAC. According to Tampa Electric Company's proposed plans, this parcel would be connected to the old mine cut lake in Parcel B to complete the storm water management system east of SR 37 and connecting plant site drainage to Little Payne Creek, which is similar to premining conditions. These activities would be accomplished by grading a swale between this parcel and Parcel B. The proposed rail spur and access road from Fort Green Road would also be constructed on the northern end of this parcel. The lake in this parcel would receive water discharged from the proposed cooling reservoir.

Parcel F (approximately 33 acres) is a circular shaped parcel of undisturbed land that once contained an eagle nest (number PO-40). This abandoned eagle nest is discussed in Section 3.5.5. Disturbance of this parcel by Agrico was prohibited by FWS regulations during mining of this area. Accordingly, there are no mandatory reclamation obligations associated with this parcel. Tampa Electric Company also would not disturb this parcel for the proposed Polk Power Station.

Parcel H (approximately 190 acres) is an irregular-shaped parcel of unmined land. Surface runoff from this parcel flows north and enters Little Payne Creek. Tampa Electric Company proposes to use this land only as a buffer area and no significant additional disturbance to this parcel would occur for the proposed project. FDEP mandatory reclamation liability for this parcel is limited to minor grading and revegetation of three corridors cleared for access to other minable areas. These activities were performed by Agrico after 1975. Tampa Electric Company would conduct the FDEP-required reclamation for this parcel as part of its overall site reclamation plans for the proposed Polk Power Station.

CHAPTER 6.0

Summary of EIS Findings

6.0 SUMMARY OF EIS FINDINGS

This section presents a summary of significant findings resulting from the environmental analysis of the proposed Polk Power Station project. Much of the information in this EIS is based on technical studies conducted by Tampa Electric Company for the detailed environmental assessments required in the SCA that Tampa Electric Company submitted to FDEP in July 1992. Additional analyses were conducted, where necessary, for this EIS. The additional analyses of the project alternatives were not as comprehensive or detailed as those done for the proposed project, however, the analyses were sufficient to support valid comparisons of the relative environmental effects of the alternatives.

6.1 SUMMARY OF ENVIRONMENTAL ANALYSIS OF TAMPA ELECTRIC COMPANY'S PROPOSED PROJECT

6.1.1 Construction-Related Impacts

6.1.1.1 Air Quality

During construction, site preparation, vehicle movement, and open burning of debris activities would occur on the site which would generate fugitive dust, vehicle emissions, and combustion products. While on-site air quality may be slightly affected, no violation of applicable AAQS is expected due to the proposed construction activities.

6.1.1.2 Surface Water Impacts

Pursuant to the NPDES permit program (40 CFR Parts 122 and 124) and to the NPDES Permit Application Regulations for Storm Water Discharges (55 FR 47990 dated November 16, 1990), construction activities that disturb five or more acres require an NPDES permit for storm water point-source discharges from the site to waters of the United States. The requirement of such an NPDES permit is intended to ensure the implementation of construction BMPs and to minimize potential impacts to surface waters during construction. On August 25, 1993, Tampa Electric Company filed its notice of intent to be covered under the NPDES General Permit for Storm Water Discharges from Construction Sites, which had been previously issued by EPA on September 25, 1992. Tampa Electric Company has since achieved coverage under that NPDES General Permit.

Overall site reclamation, which is required by FDEP and is separate from this EIS process, would be performed to restore the approximate premining hydrologic boundaries between the South Prong Alafia River, Payne Creek, and Little Payne Creek watersheds. The post-reclamation on-site acreages within these watersheds would be within 1.8 percent of premining acreages (Table 4.2.1-1). No structures would be constructed either within streambeds or floodplains within the existing off-site drainage systems of Little Payne Creek, Payne Creek, or South Prong Alafia River.

Construction of the cooling reservoir, plant facilities, and overall site reclamation activities would have a minor effect on surface hydrology by creating a cooling reservoir and other water retention areas for the power block area. Approximately 1,090 acres of the site would have runoff controlled by these structures instead of more natural runoff patterns planned for other reclaimed areas on the site.

The on-site retention areas would be designed to detain storm water from the 25-year, 24-hour rainfall event, in compliance with regulatory requirements. Peak and mass flood flows would be designed not to exceed estimated premining discharges to receiving waters (TEC, 1992a).

Each of the watersheds would experience a small decrease in mass flow for post-reclamation conditions. Peak flows would be drastically reduced due to the detention in reclaimed wetlands and storm water management structures. This slower bleeddown would help prevent downstream flooding and dry periods in these systems, and is in compliance with applicable SWFWMD and FDEP requirements.

Site preparation and construction would not have adverse water quality effects on off-site surface water bodies. Since almost all storm water would be retained on the site, construction activities would not create any surface discharges of sediment-laden storm water without lengthy detention within the cooling reservoir or other excavated areas. Dewatering water from areas under construction would be detained on the site, and sediments in any surface runoff from the site would be controlled by appropriate design measures and BMPs.

6.1.1.3 Groundwater Impacts

The proposed site preparation and facility construction activities for the Polk Power Station would have short-term effects on groundwater in the surficial aquifer within and adjacent to the site due to temporary dewatering activities. Dewatering would last for approximately 1 year and would occur primarily during the excavation and construction activities for the cooling reservoir and reclaimed wetland areas within mined-out areas on the site. Some additional temporary (3 to 7 months) dewatering would also be required for several plant facilities that have foundations or locational requirements below the water table (TEC, 1992a).

Maximum temporary surficial aquifer drawdowns of up to 10 ft would occur at the southern property boundary, which is adjacent to a series of clay settling areas. Northwest of the Polk Power Station site, maximum drawdowns would reach 2 to 4 ft. This boundary is adjacent to reclaimed clay settling areas owned by American Cyanamid. Tampa Electric Company has obtained written consent and waivers from American Cyanamid and Agrico, the owners of the clay settling areas, to allow the off-site drawdowns. An off-site area to the northeast of the site could experience drawdowns of 2 to 5 ft. Drawdowns to this area and those to the northwest of the site would be mitigated as necessary by the use of rim ditches that act as a recharge barrier between the off-site areas and the cooling reservoir dewatering areas to mitigate potential impacts.

Piezometers would be monitored to determine if the recharge ditches are operating properly. Additional water would be pumped into the recharge ditches, as necessary.

These temporary dewatering activities for the proposed project would be similar to those associated with land reclamation activities for mined-out lands and would have similar effects on the surficial aquifer system as the previous and ongoing phosphate mining activities. These dewatering activities would not affect the intermediate and Floridan aquifers within or near the site due to the thick confining layers present between the surficial aquifer and these deeper aquifers (see Section 3.3). Therefore, the proposed temporary dewatering activities for the Polk Power Station would not adversely impact on-site or off-site groundwater resources. Further, the proposed monitoring/mitigation plan would minimize any off-site groundwater effects.

6.1.1.4 Geological and Soil-Related Impacts

The main power plant facilities, excluding the cooling reservoir, would primarily be constructed on lands that have not been mined for phosphate, but have, for the most part, been disturbed by associated mining activities, such as dragline walk corridors, vehicle access roads, and material storage areas. The area developed for the main power plant facilities would be approximately 150 acres, or 3 percent of entire Polk Power Station site. Existing soils would likely be converted to Arents-Urban Land Complex as a result of the proposed construction. The existing soils on the site are not considered prime farmland by Soil Conservation Service (SCS) criteria (SCS Classification).

As the proposed construction activities proceed in the dewatered subareas of the cooling reservoir, soil materials would be excavated and used to fill the main plant site area and adjacent areas to be reclaimed as wetlands. No adverse effects to on-site topography are anticipated since the re-establishment of premining watershed divides would occur despite the proposed activities. Appropriate BMPs and pollution prevention measures for erosion control will be implemented by Tampa Electric Company during the proposed construction activities.

6.1.1.5 Terrestrial Ecology Impacts

The majority of the property has been or will be disturbed by mining prior to Tampa Electric Company's use of the site. The proposed power plant, cooling water reservoir, and other associated on-site power facilities, such as parking lots, by-product storage, storm water retention, wastewater, sanitary and IWT basins, substation, rail spur, and roads, would occupy approximately 1,090 acres of land. The main power plant facilities (i.e., power block, fuel and by-product storage) would occupy approximately 150 acres (3 percent of the entire Polk Power Station site). The cooling reservoir would occupy approximately 860 acres (including the surrounding earthen berms). Most of the project facilities (primarily the cooling reservoir) would be located on mined, highly disturbed through mining, or otherwise altered/converted land.

The site for the main power plant facility contains several small, isolated marsh and willow/elderberry swamp wetlands of which 41 acres are USACOE jurisdictional wetlands. As discussed in Section 3.5, the overall ecological value and function of these isolated wetlands are limited. These 41 acres of USACOE jurisdictional wetland habitat would be displaced by construction on the main plant site. The loss of these jurisdictional wetlands would be mitigated by Tampa Electric Company's proposed mitigation plan, which is currently under review by USACOE and other agencies (see Section 5.2).

The proposed overall development/reclamation plan for the Polk Power Station site would result in an overall net increase of 187 acres of wetlands on the site compared to premining conditions.

The majority of listed plant species reported by Tampa Electric Company as existing on site or having a high probability of occurrence were found or would be likely to occur in areas not proposed for power plant development. Therefore, the Polk Power Station construction, according to surveys, would not substantively affect local populations of state or federal endangered, threatened, or species of special concern. The proposed net increase in open water/wetland habitats created by this project should increase potential use of the mitigation and reclaimed areas on the proposed site by these species in the future.

Any effects to wildlife due to the proposed construction activities would be tempered by the fact that the site is disturbed from past and ongoing mining activities, and that noise and associated human activity are already present on the site. Also, additional construction activities would occur as the result of FDEP-required reclamation activities for mined-out areas on the site even if the proposed Polk Power Station project were not constructed.

The presence of bald eagles in the site area is exhibited by one active nest adjacent to the proposed site and one inactive nest and one abandoned nest on the site. The two on-site nests are located in areas not scheduled for power plant development or disturbance by reclamation activities. Since the active nest is 1.5 miles away from the main power block area and 2,500 ft away from the cooling reservoir, the proposed construction activities should not affect this nest.

6.1.1.6 Aquatic Ecology Impacts

No on-site or off-site natural aquatic systems are anticipated to be affected by the proposed construction activities. The aquatic systems that would be impacted by construction of the Polk Power Station are primarily waters in mine cuts (approximately 212 acres of USACOE jurisdictional wetlands). An additional 41 acres of disturbed mixed herbaceous and early successional forested wetlands would be filled on the site for construction of the main power plant facilities. The proposed mitigation and overall site development/reclamation plans would result in an increase in wetland acreage on the site of 187 acres compared to premining conditions, thereby increasing habitat for water-dependent species.

No effects to nesting of water-dependent bird species are expected since no nesting areas of these species were identified by Tampa Electric Company on the site.

6.1.1.7 Socioeconomic Impacts

The construction of the proposed Polk Power Station project should have primarily positive effects on the socioeconomic character of the local and regional area, including increases in employment opportunities, payrolls, total purchases of goods and services, and the tax base. The construction workforce would be drawn primarily from the regional study area. Only a small percentage of the construction workforce would relocate from outside the region. Therefore, while the project would create positive benefits in terms of employment, payroll, and tax base, increased demands on community services and housing should be minimal.

6.1.1.8 Land-Use, Recreation, and Aesthetic Impacts

More than 94 percent of the approximately 4,348-acre Polk Power Station site has been or is expected to be disturbed by phosphate mining activities prior to Tampa Electric Company's planned use of the site for the proposed project. Also, more than 3,330 acres (i.e., more than 76 percent) of the site that has been recently or is expected to be mined or disturbed would be subject to further temporary disturbance by reclamation activities required under FDEP regulations, even without the proposed Polk Power Station project.

Construction effects to the surrounding land uses are expected to be minimal based on the predominance of phosphate mining activities in the area. The nearest single-family residence to the planned location of the Polk Power Station power block and fuel storage area is located approximately 7,000 ft (1.3 miles) to the east. Approximately 85 homes are located west of SR 37 and north of the Polk Power Station site along Bethlehem and Albritton Roads, with the closest residence in this grouping being approximately 8,000 ft (1.5 miles) west of the proposed power block and fuel storage area. The unincorporated community of Bradley Junction is located 4 miles to the north of the site. Excluding residences in the community of Bradley Junction, a total of 130 residences with an estimated 328 persons are living within scattered residential areas within a 5-mile radius of the site.

The power block and fuel storage facilities would be located approximately 2,600 ft from the nearest roadway, SR 37, or to off-site properties that are located northwest of the facility location. The combination of significant setback distances and proposed vegetative visual buffers would minimize any adverse off-site visual and land-use effects.

After completion of current phosphate mining activities, the approximately 1,511-acre portion of the site west of SR 37 would be reclaimed as a wildlife habitat/corridor area in accordance with the proposed reclamation plans, as approved by FDEP and Polk County. No power plant facilities would be located on this area. The

areas of single-family residential uses located near the western tract should not be affected by the proposed reclamation plan.

Since the proposed northern transmission line corridor would be collocated along existing linear facilities, avoid populated areas, and traverse existing mined lands, the construction of the transmission line is not expected to have significant effects on adjacent areas and land uses.

The proposed Polk Power Station is an allowed use within the phosphate mining future land-use category, according Polk County's Comprehensive Plan. The plan allows for the development of Certified Electric Power Generating Facilities in the phosphate mining future land-use category when such proposed development is reviewed and approved by Polk County, and a CUP is issued. The BOCC approved the CUP application for the site on June 2, 1992.

6.1.1.9 Transportation Impacts

Some construction-related transportation effects are expected as a result of the movement of construction workers, machines, and equipment to and from the Polk Power Station site. The results of the transportation analysis for the proposed project indicate that these effects would be temporary and would not decrease the LOS standards of roadway links and intersections in the vicinity of the site to unacceptable levels (TEC, 1992a; Lincks, 1993).

6.1.1.10 Cultural Resource Impacts

Based on a cultural resources site assessment and concurrence by the SHPO of FDHR, construction of the Polk Power Station at the site proposed by Tampa Electric Company would not affect any archaeological or historic resources listed or eligible for the *National Register of Historic Places* (see Appendices B and Q).

Although the off-site portion of the proposed northern transmission line corridor has been selected by Tampa Electric Company, the specific right-of-way alignment for the line within the corridor has not been determined at this time. In addition, the alignment for the proposed natural gas pipeline, which would be needed by 1999 to interconnect the site with the existing or future natural gas transmission system in the site area, has not been determined at this time. If the final alignments for the proposed transmission line and natural gas pipeline are finalized during the EIS process, EPA will coordinate the alignment proposed by Tampa Electric Company with FDHR in regard to potential cultural resource impacts; however, if the alignments are finalized after the EIS NEPA process is completed, Tampa Electric Company will conduct appropriate coordination efforts with FDHR at that time.

6.1.1.11 Noise Impacts

The normal proposed construction activities on the site, even with multiple sources in operation, are predicted to have minor and temporary effects on existing noise levels at the nearest residences to the site. However, the proposed steam line blow-out activities would produce significant noise levels at the source (peak sound pressure level of 131 dB at 50 ft) and between 85 and 80 dB (instantaneous maximum) at the nearest residence, which represent a noticeable increase from background levels. Tampa Electric Company will attempt to minimize the potential public inconveniences caused by these steam line blow-out activities by publishing advance notices of such events in local newspapers.

Noise related to truck traffic during construction would be minimized since most heavy trucks and earthmoving equipment would remain on site during the first year or two of construction instead of making daily trips on nearby roadways. Truck traffic noise during project construction is expected to be less than during project operation. Therefore, project construction-related truck traffic should not cause or significantly contribute to exceedances of the FHWA peak-hour $L_{eq(1)}$ guidelines of 67 dB for nearby residential areas and 72 dB for commercial areas. Also, the majority of construction would last 27 months, with smaller-scale construction activities for proposed generating units continuing for approximately 14 years.

6.1.1.12 Human Health Impacts

During the construction phase, all applicable OSHA standards would be followed so that worker safety procedures would be assured. Efforts would be made to maximize safety awareness of workers and to monitor construction activities for compliance with applicable standards. No direct or indirect health effects are expected for local residents due to the proposed project construction activities.

6.1.2 Operation-Related Impacts

6.1.2.1 Air Quality Impacts

To predict the potential effects of air emissions from the proposed Polk Power Station operations on the ambient air quality of the area, a series of numerical simulations with different models were performed. The results of these simulations are presented in detail in Section 4.1.1.2. The computed results indicate that the operation of the proposed Polk Power Station would not cause or contribute to a violation of any PSD increment or AAQS. Modeled results for pollutants of concern (including emission from other sources) in the area are summarized and compared with relevant air quality standards in Table 6.1.2-1.

6.1.2.2 Surface Water Impacts

The potential surface water hydrologic effects from the proposed project operations are expected to be primarily beneficial since the cooling reservoir would provide a steady supply of water to the headwaters of the Little Payne Creek, and the storm water controls applied elsewhere within the site would reduce peak flood flows. The proposed continuous average blowdown would increase the average annual discharge of Little

Table 6.1.2-1. Comparison of Projected Air Quality Impact of the Proposed Polk Power Station with Relevant Air Quality Standards

Pollutant	Averaging Time	Total Projected Impact ($\mu g/m^3$)	Florida AAQS ($\mu g/m^3$)	NAAQS ($\mu g/m^3$)		PSD Class I Analysis		PSD Class II Analysis	
				Primary	Secondary	Maximum Predicted Impact* ($\mu g/m^3$)	PSD Class I Increment ($\mu g/m^3$)	Maximum Predicted Impact* ($\mu g/m^3$)	PSD Class I Increment ($\mu g/m^3$)
Sulfur dioxide (SO_2)	Annual	36	60	80	NA	0.4	2	0.0	20
	24-Hour	176	260	365	NA	3.8	5	27.0	91
	3-Hour	547	1,300	NA	1,300	12.9	25	104	512
Nitrogen oxides (NO_x)	Annual	16	100	100	100	0.8	2.5	3.3	25
Particulate matter (PM_{10})	Annual	34	50	50	50	1.1	5	5.4	19
	24-Hour	147†	150	150	150	5.7	10	31.8	37

* Includes impact of the sources in area.
† Polk Power Station contribution not significant.

Source: Tables 4.1.1-3, 4.1.1-5, and 4.1.1-6 of this document.

Payne Creek at Fort Green Road from an estimated premining discharge of 8.2 cfs (5.3 mgd) to an average of 11.9 cfs (7.69 mgd). The 25-year, 24-hour storm peak flows would be reduced in the post-reclamation conditions due to the retention capacity of the on-site storm water management systems including the cooling reservoir. Therefore, the proposed additional discharge from the cooling reservoir would not adversely affect downstream flooding. The increased volume and flow are not anticipated to cause scouring, bank erosion, or deposition of suspended solids in Little Payne Creek.

Based on the wave run-up analysis conducted by Tampa Electric Company under extreme conditions, the perimeter berm would not likely be damaged due to wave action within the cooling reservoir.

To protect water quality of the reservoir and receiving waters, all sanitary and industrial wastewater would be treated in accordance with applicable regulations prior to discharge to the cooling reservoir. Comparison of the results from the MODFLOW and QUAL2E water quality modeling analyses with the Florida Class III surface water quality standards (Chapter 17-302, FAC) indicates that cooling reservoir discharge would comply with state surface water quality standards.

The results of thermal analysis predicted that under normal operating conditions, the water temperature of the cooling reservoir discharge would not be higher than receiving water body (i.e., reclaimed lakes) by more than 3.0°F, the FDEP criteria for receiving lakes. A mixing zone analysis was conducted by Tampa Electric Company (TEC, 1992a) using the unlikely worst-case scenario (long-term full load in December). Results of the analysis indicate that a mixing zone of 250 ft from the point of discharge would be required to reduce the temperature to less than 3°F above the ambient temperature in the receiving reclaimed lake. This thermal discharge should not result in a significant adverse effect to off-site surface waters since the mixing zone would represent only approximately 2.9 percent of the reclaimed lake area.

6.1.2.3 Groundwater Impacts

The proposed annual average and annual maximum groundwater withdrawal rates for operation of the plant and associated facilities are approximately 6.6 and 9.3 mgd, respectively. A regional model of the Floridan aquifer centered on the proposed Polk Power Station was developed using MODFLOW to assess the potential drawdown impacts associated with the withdrawal of the required water. The operation of the Polk Power Station under steady state and average withdrawal conditions (6.6 mgd) would result in a maximum drawdown of approximately 4.6 ft at the site boundaries, which complies with the SWFWMD requirement of less than a 5-ft drawdown at property boundaries.

Most of the residential wells in the area use one of the two water-bearing units within the intermediate aquifer. Drawdowns in the intermediate aquifer are expected to be small due to the confining unit that separates this

system from the Floridan aquifer. Therefore, the proposed withdrawals are not expected to adversely impact other wells and water uses in the site area.

No effects to the water quality of the Floridan or intermediate aquifers are expected from this proposed project operations due to the extremely limited infiltration from the overlying aquifers (Section 3.3.1). Discharge from the cooling reservoir would meet FDEP Class G-II groundwater standards except for minor exceedances of iron and color (Section 4.3.1.2.2). Concentrations of iron and color are below background values at the site. Any minor amounts of water infiltrating to deeper aquifers would be within applicable standards before reaching any aquifers commonly used as a potable supply.

6.1.2.4 Geological and Soil-Related Impacts

After the proposed construction and full build-out of the project, no significant effects to on-site topography, geology, or soils are expected from the operational activities of the proposed Polk Power Station. Tampa Electric Company would implement appropriate BMPs to control potential impacts from erosion and accidental spills during the project operations.

6.1.2.5 Terrestrial Ecology Impacts

During operation of the proposed project, potential adverse effects to local or regional terrestrial and wetland vegetation and wildlife are not anticipated. Air impacts to vegetation are expected to be negligible. After reclamation, on-site vegetation would become established in the reclaimed wetland and upland areas and along the littoral edges of the cooling reservoir and would vary in species composition and abundance to provide habitats for wildlife species displaced during the project construction. Proposed groundwater withdrawals from the Floridan aquifer are not expected to result in drawdown of the water levels in reclaimed wetland areas.

The proposed transmission line maintenance activities would not have any significant long-term effect on sensitive vegetation, wildlife, or aquatic communities since efforts were made during the corridor selection to avoid such potentially sensitive habitats.

6.1.2.6 Aquatic Ecology Impacts

During the proposed project operations, no biological effects from the cooling reservoir discharges are anticipated outside the thermal mixing zone in the on-site reclaimed lake or in any off-site waters. Cooling reservoir water would be discharged at a rate of approximately 3.1 mgd. This relatively small amount would have hydrological and ecological benefits to Little Payne Creek downstream of the site especially during dry seasons. No adverse effect on the composition or diversity of fish in the creek is expected and the more constant flow may benefit the community. Also, no significant adverse impacts to aquatic species are anticipated due to air emissions from the proposed project.

6.1.2.7 Socioeconomic Impacts

At the proposed build-out (i.e., nominal 1,150 MW) of the power station, employment is projected to be 210 persons. The majority of the operational workforce would be drawn from the regional study area, with most of the senior plant management staff drawn from existing Tampa Electric Company operations in Hillsborough and Polk Counties. The expected small number of potential relocations would not significantly affect regional housing, transportation facilities, or public services and facilities.

Tampa Electric Company's investment in the Polk Power Station project would have a significant positive economic effect on Polk and surrounding counties. Economic benefits would be created by new sources of employment and generation of public revenues. The total combined annual operational payroll in 1992 dollars would be $109 million from 1995 to 2010. As with construction employment, employees residing in Polk and Hillsborough Counties would realize a major percentage of the operational payroll. Polk and Hillsborough County employees would receive an estimated $63 million and $27.2 million, respectively, in wages between 1995 and 2010. The estimated ad valorem taxes to be generated annually by the proposed Polk Power Station would increase from $1.9 million in 1996 to $19.6 million in 2011.

The modeling analyses for the surficial and Floridan aquifer systems predict no adverse effects to potable water supplies. There are no municipal wells located within a 5-mile radius of the site. Since wastewater would be treated on site, there would be no effects on community wastewater treatment systems.

No adverse environmental effects are expected to result from the runoff and leachate from the solid waste, brine solids, and slag storage areas, except for the land areas needed to store these solids. The storage areas would be lined to prevent contamination of groundwater. The rainfall runoff from the solid wastes and by-product storage areas, would be collected and treated in the IWT system, except for leachate from the active cell of brine solids storage area, which would be routed to the inlet of the brine concentrator unit which has no liquid discharges.

Hazardous wastes would be managed on the site and transported off site to permitted waste disposal or recycle facilities in accordance with local, state, and federal hazardous waste management requirements. The amount of hazardous waste would be minimized through the use of source reduction techniques, such as product substitution, and waste reduction techniques, such as recycling and waste segregation.

6.1.2.8 Land-Use, Recreation, and Aesthetic Impacts

The day-to-day operation of the proposed power station is not expected to adversely affect land use on areas surrounding the site. Buffering between the main operating facilities of the plant and surrounding roadways and potentially sensitive land use would be achieved through the proposed setback distances and vegetative screening.

6.1.2.9 Transportation Impacts

While the proposed project would have some operation-related effects on the local traffic, the functional capacity of the adjacent road networks would not be lowered below the adopted Polk County standards based on the transportation analysis prepared in accordance with Polk County Traffic Impact Study Methodology and Procedures.

6.1.2.10 Cultural Resource Impacts

No effects on cultural resources on the proposed site are expected due to the operation of the proposed Polk Power Station since operation activities would not involve any additional excavations which may uncover any potential unlisted cultural resources on the site.

Coordination with the FDHR regarding potential effects to cultural resources along the final alignments of the project off-site linear facilities (transmission line and natural gas pipeline) is pending. Coordination for the rail spur has occurred (see Appendix B for coordination letters and FDHR responses).

6.1.2.11 Noise Impacts

The proposed project operations are generally not expected to cause significant noise effects in the area surrounding the Polk Power Station site. The predicted highest $L_{eq(24)}$ noise level from the proposed project operations at full build-out at the nearest residential receptors would be 51 dB, which is lower than the nearby existing $L_{eq(24)}$ noise levels (51.7 dB and 55.4 dB). The operation of the flare stack has the most potential for environmental effect due to its intermittent nature and higher single-event sound levels produced. The intermittent operation of the flare stack would temporarily increase noise levels to maximum instantaneous levels of 63, 77, and 77 dB at Residential Areas 1, 2, and 3, respectively (see Section 4.11.1.2). Currently, there are no regulatory guidelines for levels of intermittent environmental noise. The frequency of flare stack operation, which would during start-up, shut-down, maintenance of the CG facilities, and emergencies, is not expected to occur more than 24 hours per year. However, the intensity of flare stack noise would likely cause a "startle effect" for nearby human and wildlife receptors.

In regard to noise generated from project trucks transporting coal, oil, slag, and by-products, peak-hour $L_{eq(1)}$ noise levels at the nearest residence from the edge of the proposed delivery route (85 ft away) is predicted to be 57.5 dB $L_{eq(1)}$ at full build-out compared to the existing peak-hour traffic noise level of 64 Db $L_{eq(1)}$. The added project truck traffic would increase the peak-hour overall traffic by approximately 1 dB, which is typically not a detectable increase. The predicted and overall resultant noise levels are also below the FHWA peak-hour $L_{eq(1)}$ guidelines of 67 dB for residential areas and 72 dB for commercial areas (although FHWA guidelines additionally consider background noise contributions not considered here). However, coal truck noise during pass-bys are calculated to be significant, 86 dB at the nearest residences and 77 dB at the most distant (250 ft away) residence considered. At full build-out, 302 truck trips (i.e., 151 trips entering the site

and 151 trips exiting the site) are expected per day (24 hr) for coal trucks and other project trucks combined (excluding approximately 100 total trips per year for general consumables).

6.1.2.12 Human Health and Wildlife Risk Impacts

Air Emissions

No significant adverse human health effects are anticipated as a result of direct inhalation of the proposed facility's air emissions. Projected facility emission levels would not significantly degrade ambient air quality (with respect to AAQS), and all potential air toxic emissions would be present in concentrations below threshold values developed to protect human health. The predicted increased risk of cancer to an individual due to direct inhalation of the proposed project air emissions is 1.8×10^{-6} or less than two persons out of every one million persons. Considering the protective methodology employed in the human health analysis outlined in Section 4.12.2, public health in the vicinity of the site should not be jeopardized due to potential carcinogenic emissions from the facility. No significant adverse impacts to wildlife are anticipated due to air emissions from the proposed facility.

Wastewater Discharges

Numeric quality standards for Class III waters were developed to provide for safe human recreation and the propagation of healthy fish and wildlife. If the proposed project is implemented, the water quality of any discharges from cooling reservoir would be required to comply with Class III surface water standards. Consequently, no adverse human health effects are anticipated (see Section 4.12.2.2 for further discussion).

During the proposed project operations, a net flow of water from the cooling reservoir into the surficial aquifer would occur because the normal operating level in the reservoir would generally be higher than the surficial aquifer water level. Therefore, the water quality in the cooling reservoir must be maintained to meet the drinking water standards for the water quality in the surficial aquifer to not be adversely affected. An FDEP condition for approval of the SCA is that an on-site groundwater monitoring plan would be implemented by Tampa Electric Company to ensure drinking water standards are met. Consequently, no adverse human health effects are anticipated due to the proposed cooling reservoir operations (see Section 4.12.2.2 for further discussion).

Electric and Magnetic Fields

The proposed transmission lines would comply with the State of Florida EMF Rule (Chapter 17-274, FAC), which requires that 230-kV/m line operations not exceed 2.0 kV/m for electric fields and 150 mG for magnetic fields at the edge of the right-of-way and that the electric field not exceed 8 kV/m anywhere on the right-of-way. Based on the results of the Bonneville Power Administration model, the proposed transmission lines will comply with the Florida standards for EMF (see Section 4.12.2.3). Both the proposed lines and the lines that would be interconnected would be 230-kV/m transmission lines and would comply with the Florida EMF Rule.

The human health risk from radiation due to the mining of phosphate ore is considered negligible due to the absence of phosphogypsum.

6.2 SUMMARY OF ENVIRONMENTAL ANALYSES OF PROJECT ALTERNATIVES

Tampa Electric Company's Proposed Project (Preferred Alternative With DOE Financial Assistance) was compared to Tampa Electric Company's Alternative Power Resource Proposal (Without DOE Financial Assistance) relative to potential environmental impacts. Under the Alternative Power Resource Proposal, the proposed 260-MW IGCC unit and two 75-MW CTs would be replaced by a 500-MW PC unit with FGD. Primarily due to the IGCC unit, the proposed project is expected to be more efficient and generate less environmental impacts. The No-Action Alternative would generate no operational project impacts, although FDEP-required reclamation activities would be needed for the proposed site even if the No-Action Alternative was selected.

6.2.1 Air Quality Impacts

The PC generating unit in the Tampa Electric Company Alternative Power Resource Proposal (Without DOE Financial Assistance) would result in higher SO_2 emissions and more than two times higher NO_x emissions than an equivalent IGCC unit, proposed as Polk Unit 1 in the Tampa Electric Company proposed project. PM emissions would also be higher with the PC alternative. In summary, the PC alternative would result in greater air quality impacts than the proposed project.

6.2.2 Surface Water Impacts

The larger coal and solid by-product storage areas needed for the Alternative Power Resource Proposal would result in increased storm water runoff compared to the proposed project. Process water discharges would be reduced, resulting in improved reservoir water quality. However, since the proposed project involves the treatment, reuse, and zero liquid discharge of wastewaters from the CG facilities, the water quality effect would probably be equivalent for the proposed project and the alternative proposal. More cooling water makeup and a significantly larger reservoir area would be required for the alternative proposal which would result in additional blowdown discharge to receiving waters. The increased blowdown under the alternative proposal would not be expected to cause a significant contribution to downstream flooding conditions or potential water quality impacts in Little Payne Creek.

6.2.3 Groundwater Impacts

The groundwater withdrawals required for the Alternative Power Resource Proposal is estimated at approximately three times that of the proposed project. This greater withdrawal might result in an unacceptable drawdown at the property boundary.

6.2.4 Geological and Soil-Related Impacts

The Alternative Power Resource Proposal would require the use of significantly more land area than the proposed project to store coal and by-products; provide facilities for delivery, handling, and storage of limestone; the cooling reservoir; and the main power plant facilities.

6.2.5 Terrestrial Ecology Impacts

The Alternative Power Resource Proposal would result in greater effects to terrestrial ecosystems than the proposed project due to the increased land acreages required for product storage, increased cooling water requirements, and increased air emissions. These additional acreage requirements for the alternative proposal would reduce the acreage of land available for re-establishment of wildlife habitats on the site after reclamation compared to the proposed project.

6.2.6 Aquatic Ecology Impacts

No significant increase in potential effects to off-site aquatic systems are expected to result from the Alternative Power Resource Proposal compared to the proposed project.

6.2.7 Socioeconomic Impacts

Population, economic, and community services effected by the Alternative Power Resource Proposal are expected to be equivalent to those resulting from the proposed project.

6.2.8 Land-Use, Recreation, and Aesthetic Impacts

The Alternative Power Resource Proposal would require additional land area (approximately 36 percent greater for equivalent IGCC versus PC plants) for power plant, fuel handling/storage, and by-product or solid waste storage compared to the proposed project. Consistency with land-use plans and zoning ordinances should be similar with the alternative proposal or proposed project.

6.2.9 Transportation Impacts

Potential traffic effects would be anticipated to be similar with the Alternative Power Resource Proposal and proposed project since the construction and operational workforce would be equivalent.

6.2.10 Cultural Resource Impacts

Since the Alternative Power Resource Proposal would use the same site as the proposed project and since no archeological or historical resources are anticipated to be affected by the proposed construction activities, no on-site effects to cultural resources are expected.

Coordination with the FDHR regarding potential effects to cultural resources along the final alignments of the project off-site linear facilities (transmission line and natural gas pipeline) would be needed for the alternative proposal and the proposed project.

6.2.11 Noise Impacts

Intermittent noise from the flare stack operation with the proposed project would be eliminated with the Alternative Power Resource Proposal. However, the alternative proposal would be an increase in truck traffic

and rail traffic to deliver coal and remove solid waste by-products, which may increase operational noise levels.

6.2.12 Human Health and Wildlife Risk Impacts

As discussed in Section 4.1.2, air emissions would increase with Alternative Power Resource Proposal compared to the proposed project. Therefore, potential human health and wildlife risk impacts for the alternative proposal may be greater than with the proposed project.

6.3 RESOLUTION OF DEIS UNRESOLVED ISSUES

The unresolved issues at the DEIS stage have either been resolved or mechanisms to resolve them have been established. The unresolved issues at the DEIS stage primarily pertained to DOI-requested air quality depositional modeling, USACOE Section 404 dredge-and-fill permitting, and NEPA compliance with federal, state, and/or local agencies for several proposed linear facility alignments (i.e., transmission lines, railroad spur, natural gas line, and possibly, fuel oil pipeline).

- **Air Quality Depositional Modeling**

  Issue--In response to EPA coordination by a letter dated May 27, 1993, to DOI during DEIS development, DOI returned a letter to EPA dated July 26, 1993 (see Appendix B, U.S. Department of the Interior). In this letter, DOI requested additional MESOPUFF II air quality modeling to evaluate effects to the Chassahowitzka NWA, a Class I air quality area. Of particular concern were potential depositions of sulfate on freshwater wetlands, nitrate depositions on the saltwater habitat, and general deposition of mercury and beryllium.

  Initial EPA Response--EPA's response to DOI in a letter dated December 22, 1993 (see Appendix B, U.S. Department of the Interior), indicated that Industrial Source Complex (ISC) dispersion modeling, as opposed to the requested MESOPUFF II modeling, had been conducted for sulfate, nitrate, mercury, and beryllium. The letter also stated that, since its last letter of May 27, 1993, EPA had fully delegated the Prevention of Significant Deterioration (PSD) Program to the State of Florida (see EPA's October 26, 1993, letter at the end of Appendix D). Beyond the PSD incremental assessment, the EPA response letter further indicated that the DOI Federal Land Manager (FLM) at the Chassahowitzka NWA may interpret the proposed power station to have an adverse effect on the environmental criteria for the Class I area and that consequently the State of Florida would be coordinating with the FLM, consistent with Air Quality Related Values Analysis responsibilities noticed at 40 CFR 52.21(p)(2). In addition, EPA indicated it would also

consider the need for additional modeling from a NEPA perspective based on the FLM's decision.

Subsequent DOI-FDEP Coordination--Because the PSD Program is now fully delegated to the State of Florida, additional coordination occurred between DOI and FDEP. In a letter dated February 14, 1994, DOI provided comments to FDEP on the PSD application and the Technical Evaluation and Preliminary Determination for the proposed Polk Power Station (see DOI letter to FDEP with FDEP cover letter dated February 25, 1994 to Tampa Electric Company in Appendix B, U.S. Department of the Interior). In regard to the Air Quality Related Values Analysis, DOI expressed concern about cumulative depositional effects of sulfate, nitrate, mercury, and beryllium and the DEIS analysis not being cumulative for these pollutants. DOI stated, "We need to know: (1) the cumulative deposition of pollutants, and (2) the ecological consequences of this deposition" and "We ask that TECO be required to perform these analyses when they apply for permits for future phases of their Polk Power Station" (also see Appendix D for other DOI comments in this letter regarding concurrence with the selected best available control technology for sulfur dioxide and NO_x emission control, the need for modeling of the 260-MW facility as opposed to the 1,150-MW facility to prevent "increment banking," and EPA VISCREEN modeling results).

EPA's NEPA Resolution--From a NEPA perspective, EPA agrees with the State of Florida that additional modeling to determine potential cumulative depositional effects for sulfate, nitrate, mercury, and beryllium (as well as any other reasonable parameters that may need to be monitored) should be modeled for the proposed additional units beyond the 260-MW Polk Unit 1 (if Tampa Electric Company pursues these additional units and the additional need for capacity above the approved 220 MW is approved by the Florida PSC). Additional coordination should therefore be conducted by Tampa Electric Company with FDEP during prospective application for such additional units up to 1,150 MW at the Polk Power Station. Based on the February 14, 1994, letter from DOI to FDEP, it appears that the mechanism for resolving the air quality modeling issue has been established for units beyond the 260-MW and up to the proposed 1,150-MW full build-out for the Polk Power Station.

- **USACOE Section 404 Permitting**

Tampa Electric Company has submitted a dredge-and-fill permit application ("Joint Application for Works in Waters of Florida") dated July 24, 1992, to USACOE and the

State of Florida (see Appendix C). A USACOE Public Notice regarding this application was issued by USACOE on October 7, 1992 (see Appendix C). At the subsequent request of EPA, which independently reviews Section 404 dredge-and-fill permit applications, USACOE has agreed to hold in abeyance Tampa Electric Company's application to fill approximately 253 acres of jurisdictional wetlands until the completion of the EIS NEPA process. More recently, Tampa Electric Company has submitted an update (May 9, 1994) to its original permit application to USACOE, and EPA has provided a comment letter (May 11, 1994) to the USACOE on their Public Notice (see Appendix C). The USACOE permitting decision will follow after the completion of the NEPA process.

Pending successful completion of this EIS process, it is expected that USACOE would adopt this EPA EIS as NEPA documentation for any Section 404 permits USACOE may choose to issue. If the EIS is adopted, USACOE would also prepare, as appropriate, its own EIS ROD (separate from EPA's ROD) for its Section 404 permitting action.

- **Transmission Line Alignment**

Although the general off-site/on-site interconnecting transmission line corridor has been selected by Tampa Electric Company, a specific right-of-way alignment within the corridor has not been finalized. However, on-site coordination with the FWS occurred on December 23, 1993. The project-associated transmission lines will be needed for the proposed project at operation start-up (see Sections 2.3.12.1 and 4.5.1.4).

- **Natural Gas Pipeline Alignment**

An off-site/on-site alignment for a natural gas pipeline corridor that would interconnect the site with the natural gas pipeline system in the area is uncertain at this time. A natural gas pipeline interconnection will be needed in the future for the proposed project since natural gas would be needed as primary fuel for the project in 1999 for proposed additional units beyond Polk Unit 1 (see Section 2.3.4.2)

- **Railroad Spur Alignment**

The present interconnecting alignment preferred by Tampa Electric Company for the off-site (200 ft) railroad spur adjoining the site may require additional coordination. However, on-site coordination with the FWS at the off-site railroad spur (December 23, 1993) and telephone coordination with the Florida SHPO have occurred. Also, the predicted on-site

jurisdictional wetland losses (253 acres) included on-site wetland impacts of the railroad spur alignment. Nevertheless, USACOE may wish to review the off-site and/or on-site portions of this alignment as part of the 404 permitting process, and the Florida SHPO may wish for more formal coordination in conjunction with the other proposed alignments. The railroad spur would be required during both plant construction and operation, even if trucks are used for coal delivery, since other materials and equipment would still be delivered by rail (see Section 2.3.12.4).

- **Fuel Oil Pipeline Alignment**

  A potential interconnecting alignment for a potential fuel oil pipeline near the site boundary has not been determined. Even though most of the alignment would be on site, some off-site impacts and additional on-site impacts (e.g., wetlands not previously considered) could occur. Tampa Electric Company may elect to interconnect with such a potential pipeline if it is available and if it is determined to be cost-effective as a backup fuel oil supply. However, hauling fuel oil by truck is also an alternative. As such, the interconnection pipeline may or may not be needed for the proposed project (see Section 2.3.12.3).

Since the final alignments for the proposed off-site/on-site transmission lines and natural gas pipeline and the possible off-site/on-site fuel oil pipeline either have not been determined or have not been finalized at this time, additional coordination would be needed by Tampa Electric Company, since alignment finalization would not occur until after completion of this NEPA EIS process. Coordination for these interconnecting linear facilities would need to occur with appropriate federal and state agencies once alignments are finalized. For example, environmental impacts, such as potential wetland, cultural resources, and endangered species impacts would need to be properly coordinated with USACOE, Florida SHPO, and FWS, respectively. The interconnecting 200-ft railroad spur alignment may also need additional coordination with the USACOE and the Florida SHPO. Also, Tampa Electric Company coordination with the FERC would be appropriate for the natural gas and possible fuel oil pipelines, should these pipelines be under the jurisdiction of the FERC. Similarly, Tampa Electric Company coordination with Interstate Commerce Commission (ICC) would be appropriate for the railroad spur.

6.4 EPA'S PREFERRED PERMIT ACTION

As discussed in Sections 1.3 and 2.1.1, EPA's "EIS Action Alternatives" for this EIS are to issue, issue with conditions, or deny an NPDES permit for the operation of the proposed Polk Power Station. EPA's preferred "EIS Action Alternative" is to issue the NPDES permit with conditions pending successful completion of this EIS process. Draft NPDES permit conditions, constituent limitations, monitoring, and reporting requirements

are addressed in Parts I, II, III and IV of the draft NPDES permit provided in Appendix A. These permit conditions are intended to evaluate the effectiveness of the pollution control systems. Conditional issuance of the NPDES permit by EPA would allow Tampa Electric Company to operate the proposed Polk Power Station by allowing regulated point-source discharges from the spillway from the cooling reservoir to an unnamed reclaimed lake leading to Little Payne Creek (both water bodies are waters of the United States). EPA has requested State of Florida 401 certification for the draft NPDES permit. Any more stringent requirements received from the state will be incorporated into the final NPDES permit.

Pending successful completion of this EIS process, EPA will prepare, as appropriate, an EIS ROD for its preferred NPDES permitting action for the proposed project.

6.5 DOE'S PREFERRED CCT FINANCIAL ASSISTANCE ACTION

As discussed in Sections 1.3 and 2.1.2, DOE's "EIS Action Alternatives" for this EIS are to provide cost-shared financial assistance or to deny the cost-shared financial assistance under the CCT Demonstration Program. DOE's preferred action alternative is to provide Tampa Electric Company's approximately $130 million in cost-shared financial assistance for the 260-MW IGCC Polk Unit 1 portion of the proposed Polk Power Station, pending successful completion of this EIS process. The $130 million figure has increased from the original $120 million estimate due to additional costs of design changes and improvements.

Pending successful completion of this EIS process, DOE expects to adopt this EPA EIS as NEPA documentation for its preferred CCT cost-shared financial assistance action for the proposed project. As appropriate, DOE would also prepare its own EIS ROD (separate from EPA's ROD) for its proposed action.

CHAPTER 7.0

Public Participation and Coordination Efforts

7.0 PUBLIC PARTICIPATION AND COORDINATION EFFORTS

7.1 PUBLIC PARTICIPATION

In accordance with federal regulations, a public participation program was conducted in conjunction with the preparation of EISs. Because, for this EIS, the status of the federal Lead Agency was transferred from DOE to EPA, the public participation process was initiated by DOE and was continued by EPA.

The scoping process and public participation process consists of (1) an initial publicly announced scoping meeting at which citizens and leaders from Polk County, the proposed site vicinity, and state and federal government agencies discuss the scope of the EIS and identify central issues; (2) changes in the scope of the EIS that are identified as a result of the meeting; (3) the announcement and distribution of the DEIS for public review; (4) a formal public hearing to present the results of the DEIS and to receive public comments; (5) the publication of responses to public and agency comments in the FEIS; and (6) the announcement and distribution of the FEIS for public review. Appropriate public notice must be given for the scoping meeting, the issuance of the DEIS and FEIS, and the public hearing.

7.1.1 DOE Scoping and Public Participation Process

As the former federal Lead Agency for the EIS, DOE initiated the scoping process by publishing an NOI in the *Federal Register* at 57 FR 33331 on July 28, 1992 (see Appendix E). Public notice of the scoping meeting was also made in local newspapers and on local cable television. The public scoping meeting was held on August 12, 1992, in Fort Meade, Florida. At this meeting, representatives of DOE explained aspects of the EIS review procedures and encouraged the public and agencies to review and comment on the DEIS. The representatives identified the basic responsibilities of EPA, DOE, and other agencies. Other public and agency meetings have also been held regarding the proposed Polk Power Station project. On February 8 and April 2, 1991, and October 29, 1992, land use and zoning hearings were held in Bartow, Florida, to discuss land use impacts. FPSC held a hearing on December 10, 1991 regarding the need for the project, and FDEP and the Florida Division of Administrative Hearings held the state site certification hearing and public hearing in Bartow, Florida, on October 13, 1993. Through these mechanisms and continual contact with local, state, and federal officials as well as informed individuals, DOE incorporated both the EPA and public in this review process.

Areas of concern which were identified at that time included:

- Need for the project
- Sulfur levels in coal and air emissions
- Cumulative impacts
- Rail and highway transportation
- Transmission line effects
- Mitigation

- Mercury emissions
- Technology
- DOE's proposed cost-shared financial assistance for the IGCC unit.
- Baseline Conditions
- Land use
- Aviation Impacts
- Wetlands
- NPDES
- Erosion
- Endangered species
- Hazardous materials
- Phosphate mining and radioactivity
- Cultural resources

7.1.2 EPA Public Participation Process

Through an MOU between the EPA, DOE, and USACOE, EPA has been designated the federal Lead Agency for preparation of the necessary environmental documentation. DOE and USACOE are federal Cooperating Agencies that will assist and support preparation of the necessary documents with their attendant public process.

Because the purposes of scoping appear to be satisfied without an additional public scoping meeting and EPA does not feel that these purposes would be significantly advanced by a second public scoping meeting, EPA decided not to hold an additional public scoping meeting for the EIS subsequent to the DOE public scoping meeting.

As the federal Lead Agency for the preparation of this EIS, EPA published its *Federal Register* NOI for preparation of this EIS at 58 FR 29577 on May 21, 1993 (see Appendix B). In addition to announcing the EPA intent to prepare this EIS, the NOI also announced that EPA was assuming the federal Lead Agency status from DOE for this EIS and that DOE and USACOE would be Cooperating Agencies to EPA for this EIS. Two written comment letters on the NOI were received by EPA within the 30-day comment period indicated in the NOI. The first letter was a request from the U.S. Department of Agriculture, Rural Electrification Administration, to be added to the mailing list for the DEIS and FEIS (see Appendix B). The second letter was from the Legal Environmental Assistance Foundation (LEAF) and commented primarily on project need, alternatives analysis, and cumulative impacts. (see Appendix B: enclosures to LEAF's letter are available for public inspection at Tampa Electric Company's office in Mulberry, Florida and at EPA's Region IV office in Atlanta, Georgia.)

In addition to these two letters, several related telephone calls from four parties were received by EPA. One interview caller was a reporter for the *Environment Reporter* in Washington, DC, who called twice and primarily requested information on the reason for changing the federal Lead Agency from DOE to EPA and nature of comments solicited in the NOI. Another caller was representative of LEAF, who primarily requested a copy of the DOE scoping meeting transcript and DOE NOI comment letters received by DOE. A representative of Texaco, Inc., in Denver, Colorado, also called to request being put on the EIS mailing list. A reporter from the *Utility Environment Report* called for an interview during and after the NOI review period (called twice) and primarily referred to the DOE and EPA NOI and requested information on the project in general, including EPA's scoping comments to DOE dated September 8, 1992 (see DEIS, Appendix I).

As part of the issuance of the DEIS, EPA published an NOA for the DEIS in the *Federal Register* on February 25, 1994 (59 FR 9211, EIS No. 940056), which initiated the 45-day public comment period for the DEIS (see Appendix F for copies of this and other EPA public notices). The fact that EPA's action is a decision that involves an NPDES permit was also mentioned in the NOA. Approximately 200 addressees were provided a copy/copies of the DEIS and an additional approximately 80 addressees were provided a copy of the DEIS Executive Summary (only) during the NEPA distribution at the DEIS stage.

On March 31, 1994, during the comment period, EPA held a public hearing in Polk County in Bartow, Florida near the proposed project site. The public hearing was held at the Polk County Commission Board Room in the Administrative Building, which was provided for the evening courtesy of Polk County. This hearing was a joint public hearing for the EPA EIS (including DOE's CCT action) and EPA's NPDES permit action (see Appendix A for a copy of EPA's draft NPDES permit). The hearing was announced on February 24, 1994, in the *Polk County Democrat* and the *Tampa Tribune.*

In addition to four EPA representatives and associated personnel (third-party contractor and a court reporter), 20 people registered at the public hearing. These attendees consisted primarily of DOE and Tampa Electric Company representatives and their contractors but also included the public. One public speaker provided verbal comments at the public hearing (see copy of public hearing transcript in Appendix G). This speaker represented the Central Florida Development Council and promoted the proposed project. Tables 7.1.2-1, 7.1.2-2, 7.1.2-3, and 7.1.2-4 list personnel and functions at the public hearing.

A slide presentation describing the project and the environmental consequences summarized the proposed EIS action. The areas addressed were the physical, biological, and sociological environments and the associated impacts from the construction and operation of the proposed facility. Reclamation and mitigation procedures were included in the presentation, as well as EIS action alternatives. Maps were available showing the location of the proposed power-generating facility in Polk County. Handout materials included copies of the

Table 7.1.2-1. Alphabetized list of attendees at the EPA public hearing held on March 31, 1994, in Bartow, Florida for the proposed Tampa Electric Company Polk Power Station.

No.	Name	Representing	Project Position
1	Mr. Charles Black	Tampa Electric Company—Tampa, FL	Favor
2	Mr. Bruce Buvinger	DOE/METC—Morgantown, WV	Favor
3	Mr. Jim DeGennaro	Central Florida Development Council—Bartow, FL	—
4	Mr. John Dinne	USACOE—Baltimore, MD (a DOE contractor)	———
5	Mr. Jack Doolittle	ECT, Inc.—Gainesville, FL (a Tampa Electric Company contractor)	Favor
6	Mr. Al Dorsett	——— (Tampa Electric Company and/or self)—Mulberry, FL	Favor
7	Mr. Gary Friggens	DOE/METC—Morgantown, WV	———
8	Mr. John Ganz	DOE/METC—Morgantown, WV	Favor
9	Mr. Rick Gorsira	CH_2MHill—Tampa, FL (a DOE contractor)	Favor
10	Ms. Mary Hanover	USACOE—Baltimore, MD (a DOE contractor)	———
11	Mr. Don Holmes	CH_2MHill—Tampa, FL (a DOE contractor)	———
12	Mr. Steve Jenkins	Tampa Electric Company—Tampa, FL	Favor
13	Mr. Dave Jewett	DOE—Damascus, MD (Washington, DC)	Favor
14	Mr. Mike Mahoney	Tampa Electric Company—Tampa, FL	Favor
15	Mr. Greg Nelson	Tampa Electric Company—Tampa, FL	Favor
16	Dr. Jerry Pell	DOE—Washington, DC	N/A
17	Mr. Don Pless	Tampa Electric Company (TECO Power Services)—Tampa, FL	Favor
18	Ms. Frances Pless	self	Favor
19	Mr. Nelson Rikos	DOE METC—Morgantown, WV	Favor
20	Mr. Rick Roach	Polk County School Board—Bartow, FL	———

Table 7.1.2-2. List of EPA and associated personnel at the EPA public hearing held on March 31, 1994, in Bartow, Florida for the proposed Tampa Electric Company Polk Power Station.

Name	Public Hearing/Project Function
Mr. Heinz Mueller	EPA Hearing Officer
Mr. Christian Hoberg	EPA Project Monitor
Ms. Karrie-Jo Shell	EPA NPDES Permit Writer
Ms. Lena Scott	EPA Public Hearing Coordinator
Dr. William Zegel	WAR, Inc.—Gainesville, FL (EPA Third-Party Contractor)
Mr. William Kinser	WAR, Inc.—Gainesville, FL (EPA Third-Party Contractor)
Ms. Celeste Hoffenberg	WAR, Inc.—Gainesville, FL (EPA Third-Party Contractor)
court reporter	Verbatim reporters—Bonita Springs, FL (EPA contracted)

Table 7.1.2-3.List of public speakers the EPA public hearing held on March 31, 1994, in Bartow, Florida for the proposed Tampa Electric Company Polk Power Station.

No.	Name	Representing	Speech Position
1	Mr. Jim DeGennaro	Central Florida Development Council—Bartow, FL	Favor Project

Table 7.1.2-4. List of coordination/introductory remarks at the EPA public hearing held on March 31, 1994, in Bartow, Florida for the proposed Tampa Electric Company Polk Power Station

Name	Remarks
Mr. Heinz Mueller	Introduction and Hearing Officer Coordination
Mr. Gary Friggens	Summary of DOE Clean Coal Demonstration Program
Ms. Karrie-Jo Shell	Summary of Draft NPDES Permit
Mr. Christian Hoberg	Summary of EPA DEIS Points of Emphasis
Dr. William Zegel	Summary of DEIS Environmental Impacts

DEIS, the executive summary of the DEIS, the draft NPDES permit, the EPA environmental news press release dated March 28, 1994 (see Appendix F), and DOE CCT demonstration program material.

The hearing was held in the Polk County Commission Board Room. The room was provided as a courtesy by Polk County.

EPA coordinated the proposed project internally with the newly established EPA Region IV Office of Environmental Justice. In addition, on April 1, 1994, the day after the EPA public hearing in Bartow, Florida, EPA coordinated with the community of Bradley Junction, Florida. Specifically, EPA visited the residence of the Reverend Ronie Moates, next to the Church of God on Merle Street, east of SR 37. Since Mr. Moates was not at home, three copies each of the DEIS Executive Summary, the EPA press release dated March 28, 1994, for the public hearing (see Appendix F), and the DOE CCT Demonstration Program material presented at the public hearing were left at the residence. The Reverend Moates and Mr. Frank Satchel, of nearby Mulberry, had previously been provided a complete three-volume copy of the DEIS as part of the DEIS distribution. In addition to the Reverend Moates, EPA coordinated with an African-American resident east of the CSX railroad and left three copies of the same material with her. She was not aware of the proposed Polk Power Station but offered to forward the information to a community leader. EPA encouraged her to express any concerns and to ask the community leaders to express any concerns about the project to EPA by April 11, 1994, by telephone or in writing.

Nine (9) public comment letters on the DEIS were received by EPA, generally within the 45-day public comment period from February 25, 1994 to April 11, 1994. As presented in Table 7.1.2-5, these letters were received from: U.S. Department of Housing and Urban Development (HUD - Atlanta, GA); U.S. Department of Agriculture (Soil Conservation Service (SCS) - Gainesville, FL); U.S. Department of Commerce (National Oceanographic and Atmospheric Administration (NOAA) - St. Petersburg, FL); Florida Department of State (Division of Historic Resources/State Historic Preservation Officer (SHPO) - Tallahassee, FL); Colorado State University (Documents Department - Fort Collins, CO); Federal Aviation Administration (FAA, Orlando Airports District Office - Orlando, FL); Florida Department of Environmental Protection (FDEP, Southwest District - Tampa, FL); Florida Department of Community Affairs (State Clearinghouse - Tallahassee, FL); and U.S. Department of Health and Human Services (Centers for Disease Control (CDC)/National Center for Environmental Health - Atlanta, GA). Of these, EPA considered comments provided by CDC, FDEP, and FAA as requiring substantive responses. Copies of all nine letters are provided with individual EPA responses in the FEIS. In addition to these comment letters, EPA and Tampa Electric Company corresponded generally throughout the EIS process.

Table 7.1.2-5. List of public comment letters generally received on the DEIS during the 45-day public comment period from February 25, 1994 to April 11, 1994.

No.	Agency	Commenter	Comments
1	U.S. Department of Housing and Urban Development (HUD) - Atlanta, GA	Warren J. Howze Director, Program Support Division, CDC	No Significant Impacts
2	U.S. Department of Agriculture, Soil Conservation Service (SCS) - Gainesville, FL	T. Niles Glasgow State Conservationist	No Comments
3	U.S. Department of Commerce, National Oceanographic and Atmospheric Administration (NOAA) - St. Petersburg, FL	Andreas Mager, Jr. Assistant Regional Director, Habitat Cooperation Division	No Significant Impacts
4	Florida Department of State, Division of Historical Resources/Florida State Historic Officer (SHPO) - Tallahassee, FL	George W. Percy Director of Historical Resources and SHPO	Transmission Line Alignment Coordination
5	Colorado State University, Documents Department - Fort Collins, CO	Fred C. Schmidt Head, Documents Department	DEIS Copy Requested
6	Federal Aviation Administration (FAA)/Orlando Airports District Office - Orlando, FL	C. Ed Howard Plans and Programs Manager	FAA Permitting
7	Florida Department of Environmental Protection (FDEP)/Southwest District - Tampa, FL	Gary A. Santti Hazardous Waste Manager, Southwest District	Site Inspections and Violations; Hazardous Wastes
8	Florida Department of Community Affairs (Florida State Clearinghouse) - Tallahassee, FL	Linda Loomis Shelly Secretary	Florida Coastal Management Program Consistency; SHPO Coordination
9	U.S. Department of Health and Human Services; Centers for Disease Control (CDC)/National Center for Environmental Health - Atlanta, GA	Kenneth W. Holt Special Programs Group National Center for Environmental Health	Various Human Health Issues

Environmental concerns raised in the nine comment letters included the following:

- Cumulative human health effects of air-deposited pollutants attributable to the proposed Polk Power Station
- Presence/absence of chlorinated dioxins and furans during IGCC coal gasification
- Analysis of indirect human exposure risk due to plant emissions
- Hexavalent chromium levels due to IGCC coal gasification
- Adequacy of groundwater monitoring for the proposed plant
- Quality control of the coal gasification slag by-product, including toxicity characteristic leachate procedure (TCLP) testing and radionuclide levels
- Height of structures and stacks proposed for the plant and FAA permitting for structures greater than 200 ft above ground level
- Site inspection procedures for the proposed plant
- Potential EPA inclusion of more stringent conditions regarding penalties than those contained in the standard Part II NPDES permit language and Florida law
- Potentially linking NPDES permit conditions with final approval and continuance of the proposed DOE cost-shared financial assistance under the DOE CCT Demonstration Program
- Identification and hazardous waste potential of catalysts referenced in the DEIS (vanadium pentoxide)

As in the case of the DEIS, EPA also published a NOA in the *Federal Register* to announce the availability of this FEIS. Pending successful completion of this EIS process, EPA will prepare, as appropriate, an EIS ROD for its preferred NPDES permitting action for the proposed project. In that ROD, EPA plans to address any substantive received written comments on the FEIS that are postmarked within the 30-day public comment period.

7.2 AGENCIES, ORGANIZATIONS, AND INDIVIDUALS INCLUDED IN THE EIS REVIEW PROCESS

As part of the NEPA public review process, EPA coordinated with various agencies, organizations, and individuals by distributing a copy of this FEIS document with a copy of the public notice (attached to inside of front cover of Volume I), or a copy of the Executive Summary of this FEIS with a copy of the EPA FEIS public notice. The following are some of the addressees that were provided copies of the FEIS or FEIS Executive Summary (similar agencies, organizations, and individuals were coordinated with during the DEIS stage):

FEDERAL/NATIONAL LEVEL

Executive Office of the President
- Council on Environmental Quality
- Washington, D.C.

U.S. Congress
- U.S. Senate (selected Senators)
  - Washington, D.C.
- U.S. House of Representatives (selected Representatives)
  - Washington, D.C.

U.S. Department of Agriculture
- U.S. Forest Service
  - Tallahassee, Florida
  - Atlanta, Georgia
  - Washington, D.C.
- Soil Conservation Service
  - Gainesville, Florida
  - Washington, D.C.
- Rural Electrification Administration
  - Washington, D.C.

U.S. Department of Commerce
- Atlanta, Georgia
- Washington, D.C.
- St. Petersburg, Florida
- Economic Development Administration
  - Atlanta, Georgia

U.S. Army Corps of Engineers
- Jacksonville District
  - Jacksonville, Florida
- South Atlantic Division
  - Atlanta, Georgia

U.S. Department of Energy
- Morgantown Energy Technology Center
  - Morgantown, West Virginia
- Headquarters
  - Washington, D.C.
- Federal Energy Regulatory Commission
  - Washington, D.C.
  - Atlanta, Georgia

U.S. Department of Health and Human Resources
- Atlanta, Georgia
- Washington, D.C.
- U.S. Food and Drug Administration
  - Washington, D.C.

U.S. Department of Housing and Urban Development
- Atlanta, Georgia

U.S. Department of the Interior
- Office of Environmental Policy and Compliance (clearinghouse)
  - Washington, D.C.
- Office of Environmental Affairs
  - Atlanta, Georgia
- U.S. Fish and Wildlife Service
  - Atlanta, Georgia
  - Vero Beach, Florida
  - Jacksonville, Florida
- National Park Service
  - Atlanta, Georgia
  - Denver, Colorado

U.S. Bureau of Mines
Washington, D.C.
U.S. Geological Survey
Tallahassee, Florida
Norcross, Georgia

U.S. Department of Transportation
Federal Highway Administration
Tallahassee, Florida
Atlanta, Georgia
Federal Aviation Administration
Atlanta, Georgia

Advisory Council on Historic Preservation
Washington, D.C.

Interstate Commerce Commission
Washington, D.C.

National Science Foundation
Arlington, Virginia

Smithsonian Institute
American Ornithological Union
Washington, D.C.

STATE

Office of the Governor
Intergovernmental Affairs Policy Unit (clearinghouse)
Tallahassee, Florida

Florida Legislature
Florida Senate (selected Senators)
Tallahassee, Florida
Florida House of Representatives (selected Representatives)
Tallahassee, Florida

Florida Department of Environmental Protection
Tallahassee, Florida

Florida Department of State
Division of Historical Resources
Tallahassee, Florida

Florida Department of Transportation
Tallahassee, Florida

Florida Game and Fresh Water Fish Commission
Tallahassee, Florida

Florida Public Service Commission
Tallahassee, Florida

Central Florida Regional Planning Council
Bartow, Florida

Southwest Florida Water Management District
Brooksville, Florida
Bartow, Florida

CITY/COUNTY LEVEL

Hardee County Chairman of Board of County Commissioners
Wauchuala, Florida

Hillsborough County Chairman of Board of County Commissioners
Tampa, Florida

Manatee County Chairman of Board of County Commissioners
Bradenton, Florida

Polk County Chairman of Board of County Commissioners
Bartow, Florida

Polk County Community Services
Bartow, Florida

Polk County Environmental Services
Bartow, Florida

Polk County Public Safety
Bartow, Florida

Polk County Public Works
Bartow, Florida

Mayor of Bartow
Bartow, Florida

Mayor of Fort Meade
Fort Meade, Florida

Mayor of Lakeland
Lakeland, Florida

Mayor of Mulberry
Mulberry, Florida

Mayor of Tampa
Tampa, Florida

Bartow Public Library
Bartow, Florida

Bruton Memorial Library
Plant City, Florida

Fort Meade Public Library
Fort Meade, Florida

Lakeland Public Library
Lakeland, Florida

ENVIRONMENTAL ORGANIZATIONS

American Lung Association
St. Petersburg, Florida

Audubon Society
Tampa, Florida

Greenpeace
Fort Lauderdale, Florida

Isaak Walton League of America, Inc.
Palmetto, Florida

Legal Environmental Assistance Foundation (LEAF)
Tallahassee, Florida

League of Women Voters
St. Petersburg, Florida

Manasota-88
Palmetto, Florida

National Resources Defense Council
New York, New York

National Wildlife Federation
Tallahassee, Florida

Nature Conservancy
Winter Park, Florida

Sierra Club
St. Petersburg, Florida
Maitland, Florida

CHAMBERS OF COMMERCE

Mulberry Chamber of Commerce
Mulberry, Florida

Tampa Chamber of Commerce
Tampa, Florida

MEDIA

Clean Fuels Report
Niwot, Colorado

Coal & Synfuels Technology
Arlington, Virginia

Environmental Reporter
Washington, D.C.

Lakeland Ledger
Lakeland, Florida

Mulberry Press
Mulberry, Florida

Tampa Tribune
Tampa, Florida

Utility Environment Report
Washington, D.C.

Radio Stations (selected)

Television Stations (selected)

CHAPTER 8.0

List of Preparers

8.0 LIST OF PREPARERS

8.1 U.S. ENVIRONMENTAL PROTECTION AGENCY (REGION IV: ATLANTA, GA)

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Elmer Holt	Senior Environmental Specialist Office of NEPA Oversight HQ—U.S. Department of Energy
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8.3 U.S. ARMY CORPS OF ENGINEERS (JACKSONVILLE DISTRICT: JACKSONVILLE, FL)

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GLOSSARY

GLOSSARY

Abandoned nest site

According to FWS, a nest site (not just the nest) is not considered abandoned unless there has been no use or nesting (successful or unsuccessful) in the original or surrounding trees for a period that exceeds five consecutive breeding seasons. (Also see Active and Inactive entries in this Glossary.)

Acid Gas Removal Absorber

Material or chemical compounds which are used as agents to absorb or remove the acid gases from syngas are called an acid gas removal absorber. In the acid gas removal unit, the cooled syngas will be water-washed in a water wash column and then will flow to the amine absorber, which acts as a weak base to absorb acid gases such as CO_2 and H_2S by chemical reaction.

Acid Gas Removal Stripper

Acid gas removal stripper, or amine stripper, is a sub-system in the acid gas removal unit. In the amine stripper, the rich amine will be stripped of the acid gas by steam generated in the stripper reboiler. The acid gas, primarily H_2S and CO_2, is removed from the amine by steam generated by the stripper reboiler. The removed acid gas is passed through a condenser to remove water and residual amine and directed to the H_2SO_4 plant. The condensed water and residual amine is returned to the amine stripper.

Acid Gas Removal Unit

Acid Gas Removal Unit is a sub-system of IGCC unit and used to remove acid gases such as CO_2 and H_2S from the entrained solids and syngas prior to firing the syngas in the advanced CT unit in order to reduce the potential SO_2 air emissions.

Active nest site

According to FWS, any nest that is currently being used by a nesting pair or has had active use within the last two nesting seasons. (Also see Abandoned and Inactive entries in this Glossary.)

Air Quality Significance Levels

A PSD review is triggered in certain instances when emissions associated with a new major source or emissions increases resulting from major modification are "significant". "Significant" emissions thresholds are defined two ways. The first is in terms of emission rates (tons/year) for which significant emission rates have been established. The second type is defined as any emissions rate at a new major stationary source (or any net emissions increase associated with a modification to an existing major stationary source) that is constructed within 10 kilometers of a Class I area, and which would increase the 24-hour average concentration of any regulated pollutant in that area by 1 $\mu g/m^3$ or greater. Exceedance of this threshold triggers PSD review.

Allowance for Funds Used During Construction (AFUDC)

The cost of financing the construction of new facilities before the facilities are included in the rate base. When regulated utilities are not allowed to earn a return to cover their financing costs during construction, they are allowed to accumulate these costs during construction for future recover through AFUDC.

Amine Absorber (see Acid Gas Removal Absorber)

Amine Stripper (see Acid Gas Removal Stripper)

Amine Sump

Container-like equipment for storing amine in the acid gas removal system.

API-type Oil Water Separator

API is the acronym for the American Petroleum Institute. A device utilizing API's principles to separate oil and water is called API-type oil water separator.

Avoided Unit

A hypothetical unit that would have to be built if no new qualifying facilities were placed in service in peninsular Florida after 1988.

Baghouse

Baghouse is a fabric-filter system generally composed of a large number of vertical cylindrical fabric-filter elements arranged in parallel rows. The power plant baghouse may contain several thousand cylinders, each ranging in diameter from 5 to 14 in and in height up to 40 ft. Each element has an open bottom and closed top, and rests on a tube sheet above a dirty-air plenum. The sheet distributes the gas evenly to the bags, allowing it to enter the elements at bottom, deposit its particulate matter on the inside of the tubes, and pass laterally through the fabric and exit to an outlet manifold where it is drawn out by the plant induced-draft fan.

Baseload Power Resource Needs

Base-load plants are used to provide a base electrical load to the grid. They are usually large, efficient, stream-generation, Rankine-cycle type stations powered by fossil or nuclear fuels. They operate continuously except for scheduled maintenance or forced outages. They usually have a power operating factor (POF) between 60-70 percent.

Biocide

A substance or chemical that is toxic to living things. An example is a herbicide which is a chemical that selectively kills certain types of plants.

Biodiversity

A hierarchically arranged continuum among the biotic or living components of an ecosystem. The term reflects the interrelationships among "producers" and "consumers" and how group linkage sustains the ecosystem as a whole.

Bituminous Coal

The most common coal; it is soft, dense, and black with well defined bands of materials.

Black Water

Usually, the wastewater from water closet and latrine or aqua privy flushing is referred to as black water. All other domestic wastewater is referred to as grey water. In the power industry, it also refers to the process water generated in the coal gasification and slag handling systems as well as water from the syngas scrubber. The power plant black water contains fine particles of slag, un-gasified solids, and fine particles entrained in the raw syngas.

Blowdown

Contaminated water removed periodically or continuously from a process. This water volume is replaced by higher quality feedwater to maintain a desired quality of water in the process. See MAKEUP.

Blowdown Discharge Control

Blowdown discharge control is an outfall control structure designed to allow for continuous blowdown discharges to keep the cooling reservoir water at desired level, such a control device can also be used to control stormwater discharges from the reservoir.

Booster Blower Knockout Drum

Booster Blower Knockout Drum is one of the components in the tail gas treatment unit, and used to separate the entrained liquid from gases to be routed back to the quench tower bottoms.

Brine

In coal gasification process, the effluent residual generated from processing the black water will be condensed and crystallized into a solid. This solid consists primarily of salt and is called brine.

Brine Concentrator

Brine Concentrator is also called brine concentration system in the gasification unit, which is used to condense and crystallize the effluent residual generated from processing the black water into brine. Runoff from the active brine solids storage area will also be temporarily routed back to brine concentrator for crystallization.

British Thermal Unit (Btu)

A standard unit for measuring the quantity of heat required to raise the temperature of one pound of water one degree Fahrenheit.

Btu Content of fuel (Average)

An average heat value per unit quantity of fuel expressed in Btu as determined from tests of fuel samples (Example: Btu per pound of coal, Btu per gallon of oil, Btu per cubic foot of gas).

Canopy

Pertaining to the vegetative cover of woody vegetation (typically trees), usually woody vegetation which is of the tallest stature.

Capacity

The load for which a generating unit, generating station, or other electrical apparatus is rated either by the user or by the manufacturer.

Capacity Factor

The ratio of the average load placed on a machine or piece of equipment for the period of time considered, to the capability of the machine or equipment.

Capacity Margin

The difference between generating capacity and peak system load expressed as a percent of generating capacity. It is a variation of the reserve margin.

Carbon Canister

Carbon Canister is a container-like unit holding activated carbon for absorption of potential hydrogen sulfide (H2S) or ammonia (NH_3) emissions at the grinding sump and slurry tank vents.

Certified Unit

A proposed unit, for which construction has been committed, that has received a certificate of need from the FPSC.

Chemical Restabilization Tank

Chemical Restabilization Tank is one of the components in the industrial wastewater treatment system, which allows chemical reactions initiated in the treatment system to reach equilibrium.

Circulating Fluidized Bed Boiler (CFB)

A coal fired boiler in which crushed coal is burned on a bed of crushed limestone. The limestone is introduced into the boiler for the purpose of stripping sulfur out of the combustion gases prior to emission through the plant's stack.

Clarification

Clarification is one of the most widely used wastewater treatment operations. The function of clarification is the settling of suspended particles which are heavier than water from water by gravitation settling.

Clean Coal Technology (CCT)

The combination of a gas turbine and steam turbine driving an electrical generator. The steam is generated by the hot exhaust gases from the gas turbine.

Coal-derived Syngas

Syngas is a natural gas-like fuel, generally derived from coal in the coal gasification system. The raw syngas consists primarily of hydrogen, CO, water vapor, and CO_2; with small amounts of H_2S, COS, methane, argon, and nitrogen.

Coal Gasifier (CG)

A unit that accepts coal and transforms it into a gas and a slag by reaction with air or oxygen and water.

Coal Grinding and Slurry Preparation System

The coal grinding and slurry preparation system is used to prepare coal for input to gasifier of the IGCC unit. The grinding mill is a conventional rod-type system with an overflow discharge of the ground coal and is used to reduce the feed coal to the design particle size distribution. Coal discharged from the grinding mill will pass through a trammel screen and over a vibrating screen to remove any oversized particles before entering into the slurry tank where it is mixed with wastes. After such a treatment, the coal slurry will be ready for further processing in the gasifier to generate the syngas.

Coal Handling Facility

The major elements of the coal and ash handling system of a steam power plant include unit trains, gantry crane, conveyors of various types, trolleys, hoppers, bunkers, car dumpers, movable stackers, scrapers, bulldozers, and road type rollers, etc. In the case of wet ash disposal, piping and pumps are also required.

Coal Slurry

The mixture of coal and water, which is generated in the coal grinding and slurry preparation system, is called coal slurry. In operation, the coal slurry together with the oxygen produced from the air separation unit will be fed to the process burner to generate the syngas.

Cogenerator

A power generating unit that simultaneously produces electrical energy and useful thermal energy from the same fuel.

Combined Cycle Plant (CC)

A combination of one or more gas fired combustion turbine (CT) electric generating unit(s), one heat recovery steam generator per CT (which converts waste heat from the CT into steam), and a steam turbine electric generating unit.

Combustion Emission

Materials released to the atmosphere by a combustion mass. The combustion sources in the proposed Polk Power Station include:

- The advanced CT integral to the IGCC unit;
- The IGCC unit HGCU thermal oxidizer;
- The IGCC unit emergency flare;
- A small auxiliary boiler associated with the IGCC unit;
- The four CTs associated with the two CC units; and
- The six stand-alone, simple-cycle CTs.

Combustion Turbine (CT)

Rotating discs driven by the expansion of combustion gases between blades. These turbines also have a compressor to increase the pressure of the air in the combustion chamber which increases the efficiency of the turbine.

Commensal

A member of a relationship demonstrating commensalism. A form of symbiosis in which two species live in close association in such a manner that one species, the commensal, usually the smaller of two, benefits while the other, the host, does not (Steen, 1971).

Conventional Pulverized Coal Technologies

The conventional pulverized coal technologies is a traditional power plant technique which pulverizes the coal, delivers it to the fuel-burning equipment, and accomplishes complete combustion in the furnace with a minimum of excess air. The system must operate as a continuous process, and within specified design limitations. The pulverizer and burner are two basic components in the conventional pulverized coal system.

Cooling Reservoir

Cooling lakes, cooling ponds, or cooling reservoirs, are the oldest and simplest type of heat rejection system in power plants. Hot circulating water from the condenser is released into the reservoir to cool. Cool water is returned to the circulating-water system. Cooling is accomplished naturally by evaporation, and thermal radiation to the sky.

Cooling Tower

A device for cooling hot water by bringing it into contact with large quantities of air. Heat from the water is transferred to the air and discharged into the atmosphere. Water evaporation is the primary cooling mechanism. This evaporation (pure water) results in an increase in dissolved materials contained in the cooled water as the dissolved solids which were in the evaporated water are left behind.

Crusting Agents

Materials or chemical compounds used to form a shell over the inactive coal pile surface so as to eliminate the fugitive dust emissions.

Cyclone Solid

All particles collected in a cyclone type collector and/or separator. Cyclone-type collectors are the most common of inertial collector class. The particle laden gas stream enters an upper cylindrical section tangentially and proceeds downward through a conical section. Particles migrate by centrifugal force to the wall and are removed through a seal at the apex of the inverted cone. A reverse direction vortex moves upward through the cyclone and discharges through a top center opening. Cyclones are often used as primary collectors for particulate matter.

Deep Well Injection

The practice of deep well injection originates with the oil-producing industry. Water is injected into underground formations: (1) to disposal of salt water that is produced with oil, and (2) to increase the amount of oil recovered by injecting water into a producing formation. Water can sometimes be injected into an underground formation by gravity, but often a pump is necessary in order to inject water at the rate desired. This technique has been employed to dispose of wastewater into an underground formation through deep wells.

Demand

The rate at which electric energy is delivered to a system, part of a system, or piece of equipment at a given instant or averaged over any designated period of the time (see LOAD).

Demineralized Water

Demineralization is the process of removing dissolved solids by ion exchange. Two types of resins are used: cation and anion resins. Water after demineralization treatment is called demineralized water. In a steam turbine (ST) plant, makeup water is need to balance the loss of the steam-water in any energy cycle. The raw water is pretreated and then demineralized before being added into the system.

Demineralizer Train

A demineralizer train consists of a number of duplicate water treatment processes which remove minerals from a water stream producing successively higher quality water as it moves through the train. Typically, this system consists of a number of ion exchange systems in series, where the output of each system becomes the input to the next.

Desulfurization

To reduce quantity of sulfur oxides emission, sulfur compounds must be removed from the raw syngas prior to its being burned. Desulfurization is one of a series of cleanup and conversion operations to remove sulfur compounds from raw syngas. It can be accomplished by wet, dry, or alkali scrubbing. Among these techniques, the wet Flue-Gas-Desulfurization (FGD) system, also called a wet scrubber, is commonly used in power plants.

Distillate Fuel

The lighter fuel oils, such as kerosene and jet fuel, which are distilled off during the refining process. Virtually all of the oil used in internal combustion and gas turbine engines is distillate, or "light" fuel oil.

Drift

The small portion of hot water entrained as very small droplets in the air during contact with water while passing through the cooling tower and discharged with air at the top of the cooling tower. Drift contains the same concentrations of dissolved materials as the water in the tower.

Eastern Associated Transmission Line Corridor

The proposed 400-foot wide corridor area from the proposed Polk Power substation to the existing Tampa Electric Company Hardee-Pebbledale 230-kV transmission line along the eastern edge of the site. This corridor is completely located within the Polk Power Station site boundaries. Two 230-kV electric transmission circuits and structures will be constructed within the corridor (TEC, 1992a).

Emergency Forced Outage

Occurs when a unit must be quickly removed from service because of an equipment problem.

Endangered and Threatened Species

Endangered species are those biological species (e.g., fish, wildlife, plants, etc.) that have been determined to be near extinction. Threatened species are those biological species which are vulnerable to, or are in a state of decline leading to possible extinction. Lists of these species are maintained at the federal level by the U.S. Fish and Wildlife Service and National Marine Fisheries Service. The Florida Game and Fresh Water Fish Commission maintains the fish and wildlife lists at the state level. For plants, the Florida Department of Agriculture and Consumer Services publishes a list in Preservation of Native Flora of Florida Act.

Energy Broker

A mechanism for marketing electric energy among electric utilities that have sufficient generating capacity to meet their individual loads. It matches potential sellers of electric energy with potential buyers every hour.

Epiphytic Plant

A plant that grows upon another plant but is not parasitic upon it, securing moisture through aerial roots. An example of an epiphytic plant is an orchid (Steen, 1971).

Equivalent Forced Outage Rate

The percentage of time a unit is on forced outage.

Expected Unserved Energy (EUE)

Expected amount of energy that will not be served due to insufficient generation. This figure includes all 8,760 hours of the year.

Filter Cake

Filter cakes are solid wastes and may be generated various ways. The fine slag filter cake comes from the water scrubbing process used to remove entrained solids from the syngas in the CG unit.

Firm Demand and For Firm Power

Power or power-producing capacity intended to be available at all times during the period covered by the associated commitment, even under adverse conditions.

Fixed Operation Cost

Monies, other than those associated with investment, in a power plant that do not vary or fluctuate with changes in operation or utilization of the plant.

Florida Committee on Rare and Endangered Plants and Animals

A group of scientists who have compiled information about the biota of Florida. One set of volumes regarding information on plants, mammals, birds, reptiles and amphibians, and terrestrial and marine invertebrates was completed in 1976. Updates of those volumes began in 1988 (FCREPA 1988).

Florida Department of Agriculture and Consumer Services

For plants, the state agency that publishes a list in Preservation of Native Flora of Florida Act, Section 581.185-187, Florida Statutes.

Florida Electric Utilities Coordinating Group

Group of utilities referred to as FCG, including Peninsular Florida utilities plus the Gulf Power Company, West Florida Electric Cooperative, Choctawhatchee Electric Cooperative, Escambia River Electric Cooperative, Gulf Coast Electric Cooperative, City of Blountstown, Florida Public Utilities Company (Marianna), and Alabama Electric Cooperative.

Florida Game and Fresh Water Fish Commission

The Florida State agency that maintains the Protected Species list and regulates protected fish and wildlife species.

Florida Land Use and Cover Classification System (FLUCCS)

A uniform land classification code that was designed to meet data exchange and information needs of government and private organizations. This land-use, vegetation cover, and land form classification system is arranged in hierarchical levels with each level containing land information of increasing specificity. Four levels are used beginning with Level I, which is general in nature, and ranging to Level IV, the most specific (FDOT, 1985).

Florida Natural Areas Inventory

A data base of geographical and biological information on known occurrences of rare species, including all (except whales) federal- and most state-listed species. This data is provided in a species-by-county-by-habitat matrix assembled from currently available information (FNAI, 1990).

Fluidized Bed

Fluidized bed is a vertical column of solid particles through which a fluid passes upward at a velocity sufficient to cause the particles to separate and become freely supported by the fluid. A fixed bed, on the other hand, is one in which the velocity of the fluid is too slow to cause fluidization, the bed of particles is contained by screens, or the flow is downward.

Forced Outage

An outage of generating equipment resulting from the failure of one or more components of a facility rendering it inoperable.

Fossil Fuel

Any naturally occurring fuel of an organic nature, such as coal, crude oil, or natural gas.

Fossorial

Adapted to burrowing or digging (Steen 1971).

Fuel Efficiency

See Thermal Efficiency.

Fuel Inventory

A supply of fuel accumulated for future use.

Fugitive Dust Emission

Particulate emissions generated by materials handling and storage and by vehicles running along unpaved roads. Usually, fugitive type dust emission is a temporary, short-time period particulate emission.

Gasifier

The gasifier is a device used to convert coal to gases fuel, or syngas. The commonly used gasifier is a fluidized-bed reactor in which coal is introduced at the top, and a mixture of steam and oxygen in the bottom. Product gas leaves overhead, and unconverted coal, or char, is withdrawn from the bottom. The gasifier operates at high pressure which favors the chemical equilibrium toward the formation of methane.

Generating Unit

A collection of fuel feeders, heat producers, energy converters, and electrical generators which must be operated as a single entity in order for electricity to be produced. A unit may consist of several boilers supplying steam to one or more turbines that drive one or more electric generators.

Global Climate Change

The change in the average course or condition of weather in all areas of the Earth over a period of years. It can be exhibited by temperature, wind velocity, and precipitation. Typically, as stated in the EIS, it pertains to perceivable changes in worldwide weather due to increased levels of air pollutants being emitted by the preferred alternative (i.e., [Considine, 1989] Ozone, Carbon Monoxide, Nitrogen Oxides, Particulate Matter, etc.)

Grey Water

(see black water)

Groundwater

That portion of the water below the surface of ground under greater pressure than atmospheric pressure (USACOE, 1987).

Hazardous Waste

Any potentially harmful solid, liquid, or gaseous waste product of manufacturing or other human activities.

Heat Exchange

The process of exchanging heat energy between different working mediums is called heat exchange. The heat exchange between fluid steams is one of the most important and frequently encountered processes found in engineering practice. A heat exchanger is equipment or machinery in which heat is exchanged. Boilers, condensers, water heaters, automobile radiators, air heating or cooling coils, etc., are examples of commonly used heat exchangers.

Heat Rate

A measure of generating station thermal efficiency, generally expressed in Btu per kilowatt hour. It is computed by dividing the total Btu content of fuel burned for electric generation by the resulting kilowatt-hour of electricity generated.

Heating Value

The useful energy content that can be extracted from a fuel is called the heating value of that fuel. Most commercial fuels contain hydrogen as one of the constituents, and water is formed as a product of combustion when the hydrogen is burned in air. The water may remain in the vapor state, or it may be condensed to the liquid state. The high, or gross, heating value (HHV) assumes that any water vapor formed is all condensed, releasing its heat of vaporization. The low, or net, heating value (LHV) assumes none of the water vapor condenses.

Herb

Non-woody plant of a macrophytic species. Seedlings of woody plants, including vines, that are less than 3.2 feet in height (USACOE, 1987).

High-band Forecast

A forecast which represents more growth than the "base" forecast.

Higher Heating Value

(see heating value)

High Efficiency Cyclone

Equipment used to remove particulate matter from the HGCU system. The original meaning of cyclone refers to certain storms in which the wind circles or spirals in an upward or downward motion. This term has been widely used in engineering practice, to refer to equipment process such as the cyclone collector, cyclone scrubber, cyclone furnace, cyclone filter, etc. The high efficiency cyclone in the HGCU system is used to remove the entrained fine particles in the syngas from the gasifier.

Heat Recovery Steam Generator/Steam Turbine (HRSG/ST)

The combination of heat exchangers, piping, and turbine used to recover waste heat from a combustion turbine. The exhaust gases of a combustion turbine are passed through review of heat exchangers which generate steam. The steam is expended through a turbine to produce mechanical energy.

Hydroperiod

The time, in consecutive days, over which water stands above ground surface. The hydroperiod is typically expressed in days per year.

Hydrophytes

Any macrophyte that grows in water or on a substrate that is at least periodically deficient in oxygen as a result of excessive water content; plants typically found in wetland habitats (USACOE 1987).

IGCC Generation Unit

The nominal net 260-MW IGCC unit consisting of an advanced CT and HRSG/ST facility and integrated CG facilities including air separation unit, coal grinding facilities, gas cleanup systems, tail gas treating system, and CG process wastewater treatment facilities (TEC, 1992a).

Inactive nest site

According to FWS, any nest for which active use has not been documented during or through a period extending five consecutive nesting seasons. The regulations for an inactive nest are the same as for an active nest. Some nests may go unused for several years and then be reoccupied. Even following the death of one member of a pair or of both, another pair of eagles may occupy these apparently "abandoned" nests. (Also see Abandoned and Active entries in this Glossary.)

Incremental Generating Cost

The ratio of the additional costs incurred in producing an increment of generation to the magnitude of that increment of generation.

Installed Generating Capacity

The guaranteed continuous output of a generator at full load, under specified conditions, as designated by the manufacturer.

Interruptible Load

That load which may be disconnected at the supplier's discretion.

Investor-Owner Electric Utility

Those electric utilities organized as tax-paying businesses, usually financed by the sale of securities in the free market, whose properties are managed by representatives regularly elected by their shareholders. Investor-owned electric utilities may be owned by an individual proprietor or a small group of people, but are usually corporations owned by the general public.

Ion Exchange

A unit process by which ions of a given species are displaced from an insoluble exchange material by ions of a different species. It can be operated in either batch or continuous model.

Ion Exchanger

A system of containers holding beds of zeolite or resins which exchange ions with water to affect water quality. The system allows near saturation of the beds, changes the flow of water to a fresh bed, and regenerates near saturated beds so they may be used again.

Jurisdictional Wetlands

The Army Corps of Engineers and the Environmental Protection Agency jointly define wetlands as:

> Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

The Southwest Florida Water Management District defines wetlands in 40D-4.021 as follows:

> Wetlands means those areas that are inundated by surface and groundwater with a frequency sufficient to support, and under normal circumstances do or would support, a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil condition for growth and reproduction, such as swamps, marshes, bayheads, cypress sloughs, wet prairies, wet meadows, river overflows, mud flats, and natural ponds.

Levelized Fixed Charge Rate or Fixed Charges

A fraction that is a function of the AFUDC amount, the book life of the technology and other financial factors. The fraction, when multiplied by the capital cost of the equipment, will yield an annual amount (levelized) that will have the same present worth as the present worth of the actual annual capital costs (not levelized) of the equipment.

Load

The amount of electric power delivered or required at any specific point or point on a system.

Load Factor

In percent, is calculated by multiplying the annual net energy for load (NEL) by 100 and dividing it by the product of the peak demand and the number of hours in the year.

Load Serving Capacity

The additional amount of load a system can serve by adding a generating unit while maintaining the same level of reliability. The load serving capability is always less than the rated capacity of a unit since the unit capacity must be reduced by the additional system capacity margin required by the addition of the unit.

Lockhopper

A device used to mechanically feed or remove solids or liquids within a pressurized system. In removing solids or liquids from a pressurized system, the outer lock is closed, and the inner lock is opened. After, the solids or liquids enter the device, the inner lock is closed and pressure between the locks is reduced to atmospheric pressure. The outer lock can then be opened and the solids/liquids removed.

Loss of Energy Probability (LOEP)

An alternate method of expressing the Expected Unserved Energy (EUE); that is adjusted to remove the effect of system size.

Loss of Load Hours (LOLH)

A variation on the LOLP method representing the expected number of hours by considering all the hours that potential loads will not be powered adjusted by considering all the hours in the year, not just the daily peak hours.

Loss of Load Probability (LOLP)

A mathematical reference representing the expected number of days per year when the electrical generation will be insufficient to serve the daily peak load. This indicates the relative reliability of electric power systems. Generally, the availability of assistance from inter-connected neighboring utilities is included in the calculation of the LOLP whereas voltage reductions, requests for voluntary load reductions, and load curtailments are not modeled in the calculations.

Low-Band Forecast

A forecast that resents less growth than the "base" forecast.

Lower Heating Value

(see heating value)

Macrophytes

Any plant species that can be readily observed without the aid of optical magnification. This includes all vascular plant species and mosses (e.g., *Sphagnum* spp.) as well as large algae (e.g., *Chara* spp., and kelp) (USACOE, 1987).

Main Power Plant Facilities Site

The approximate 150-acre area to the east of SR 37 on which construction of the main Polk Power Plant facilities and structures (i.e., power blocks, fuel and by-product storage) is proposed (TEC, 1992).

Maintenance Outage

Loss of generating capability that occurs when a generating unit is taken out of service for routine maintenance.

Makeup

Water taken in by a power generating unit to "makeup" for water losses resulting from evaporation, contamination (blowdown), absorption, etc.

Mandatory Lands

Lands mined subsequent to July 1, 1975, for which reclamation is required by the State of Florida under Section 211, F.S., and Chapter 16C-16, F.A.C.

Mine Cut

Trenches remaining after overburden and ore have been removed through mining activities.

Mist Eliminator Pad

A pad of metal or composite mesh that presents a tortuous path for gases such that droplets are removed by collision with the mesh. The uncondensed gas known as tail gas is driven out of the final sulfur condenser via a mist eliminator pad either to the tail gas treating unit or to the thermal oxidizer, depending on the tail gas sulfur content.

Moving Bed Absorber

An absorber in which the absorbent is moved through the unit generally by mechanical means used in HGCU unit to absorb H_2S gases present in the syngas stream by reacting with zinc titanate sorbent. Regeneration of the absorber yields a concentrated sulfuric dioxide ($SO_{2)}$ stream which can be converted to H_2SO_4.

Multistage Centrifugal Compressor

A rotating device driven by a source of power which increases gas pressure through the compressor most suited for moderate-pressure, high-volume applications. Centrifugal compressors are categorized by the number of compression stages. Subsequent compressors usually occur in different parts of a multi-stage compressor and not in separator compressors.

National Pollutant Discharge Elimination System (NPDES)

System of permitting and monitoring the regulated release of wastewater from point sources into water bodies that have either been designated waters of the United States or waters of the state (if the NPDES program is delegated to that state).

National Wetland Inventory Maps

Maps that identify wetlands, typically on a scale of 1:24,000, available through the U.S. Fish and Wildlife Service (FWS). These maps graphically depict the extent of wetlands. Each wetland unit is defined using the FWS Classification of Wetlands and Deepwater Habitats of the United States (Cowardin, 1979).

Natural Gas

A mixture of hydrocarbon gases, principally methane, occurring in porous geologic formations beneath the earth's surface, often found in association with petroleum.

Net Capacity

The continuous gross capacity to generate electricity, less power required by all auxiliaries associated with the unit, or the capacity as specified by "SERC Guideline Number 2 for Uniform Generator Ratings for Reporting".

Net Energy for Load (NEL)

Net system generation plus energy received from Class I and Class II systems, less energy delivered to Class I and Class II systems.

Net Energy for System (NES)

NEL plus energy received from Class III and Class V energy delivered to Class III and Class V systems.

Neutralization Tank (see Chemical Restabilization Tank)

Noise

Noise is the commonly used term to describe sound waves moving through air. The intensity of noise is measured in units called decibels (dB). Normal conversation measures approximately 60 dB. External sources of noise can become intrusive when it interferes with sleep, conversation, or enjoyment of an otherwise quiet environment. Excessive noise can affect human health through annoyance, physiological stress effects, or even physical hearing damage depending on the level (Salvato, 1982; Kryter, 1984).

Nominal net

A unit's net output is the power in Megawatts (MW) that is provided to the electric transmission system. It is calculated by subtracting the internal (parasitic) power requirements of the plant equipment from the unit's gross output. Since the performance of the plant is affected by ambient air and cooling water temperatures, the plant output varies during the year. The term "nominal" accounts for this variability. Therefore, "nominal net" is the approximate net unit output in MW.

Non-Catalytic Reaction

Non-catalytic reaction in the sulfur recovery unit is a thermal reaction that converts H_2S gas to a liquid molten sulfur by-product. The basic reactions are:

$H_2S + 1.5\ O_2 \rightarrow SO_2 + H_2O$, and

$2H_2S + SO_2 \rightarrow 1.5\ S_2 + 2H_2O$.

Up to one half of the total sulfur by-product production of the unit comes from the non-catalytic reactions in the thermal reactor depending on the concentration of H_2S in the fed acid gas.

Non-Mandatory Lands

Lands mined prior to July 1, 1975, for which reclamation is not mandatory by the State of Florida. State severance tax-based funding is available to reimburse owners of certain "non-mandatory" lands for some or all of the cost of voluntary reclamation activities. Non-mandatory reclamation is governed by Section 378, F.S., and Chapter 16C-17, F.A.C.

Northern Associated Transmission Line Corridor

The proposed corridor area from the proposed Polk Power Station substation to the existing Tampa Electric Company Mines-Pebbledale 230-kV transmission line at a point west of the community of Bradley Junction. The corridor area is 400-feet wide as it runs west on the site from the substation to SR 37 as it runs north along SR 37. The corridor width increases to 1 mile southwest of Bradley Junction as it turns northwest to interconnect to the existing line. Two 230-kV transmission line circuits and structures will be constructed within this corridor (TEC, 1992a).

No-Threat Level

An upper-bound estimate of a chemical's ambient exposure level which is not likely to cause appreciable health risks.

NPDES Permit

A permit issued, as appropriate, by EPA or by a delegated state agency regulating the release of pollutants from point sources into waters of the United States.

Oil

A mixture of hydrocarbons existing in the liquid state in natural underground reservoirs. Oil is often found in association with gas.

Once-through Cooling

Once-through cooling refer to the use of water from lakes, rivers, or oceans to pass through the power plant. This process has minimum capital cost and is preferred where suitable water supply is available.

Outage

Describes the state of a generating transmission or distribution component when it is not available to perform its intended function due to some event directly associated with the component. An outage may or may not cause an interruption of service to consumers, depending on system configuration.

Outage Rate

For a particular system component, the number of outages per unit of time.

Outfall Control

Outfall control unit of a cooling reservoir is a structure or structures designed to provide for the discharge of water from the reservoir. The discharge of water, i.e., outfall control, can be required by or used for water quality management, berm and vegetation maintenance, and unanticipated emergency purposes.

Oxidation Tank

Oxidation tank (or pond), also called "stabilization tank" (or pond), designed for the purpose of both domestic and industrial wastewater treatment.

Oxygen-Blown Entrained-Flow IGCC Technology

The oxygen-blown, entrained flow, gasification system developed by Texaco used for producing syngas from coals for power generation. The major advantage of this technology is that it can achieve significant reductions of sulfur dioxide (SO_2) and nitrogen oxides (NO_x) emissions compared to conventional pulverized coal technologies.

Peak Demand for Electricity

The highest electricity demand in a certain time period is called peak demand for electricity. Power plants are specially designed to provide relatively inexpensive power during peak-demand periods, resulting from abnormal air-conditioning loads and peak-hour domestic demands.

Peak Demand or Peak Load

The net 60-minute integrated demand, actual or adjusted. Forecasts are for normal weather conditions.

Peninsular Florida

Those utilities within Florida located east of the Apalachicola River.

Percent Capacity Margin

The difference between capacity and peak load expressed as a percentage of capacity. Does not explicitly evaluate the effects of unit size or performance, the size of the system, or the strength of its interconnections.

Performance Standard

A minimum requirement or maximum allowable limit on the effects or characteristics of a use, usually written in the form of regulatory language. A building code, for example, might specify a performance standard referring to the fire resistance of a wall, rather than specifying its construction materials. Performance standards in zoning might describe allowable uses with respect to smoke, odor, noise, heat, vibration, glare, traffic generation, visual impact, and so on, instead of the more traditional classifications of "light" or "heavy" lists of uses. It is a more precise way of defining compatibility and at the same time is intended to expand developer's options. The performance standard approach is based on the technical ability to identify activities numerically (e.g., how much noise) and to measure them to see if they meet ordinance requirements. The most advanced work in performance standards has been in the industrial emissions.

Permeability

Permeability of a soil is a measure of continuous voids, and expresses the relative easy with which water will flow through a porous medium.

Photovoltaic Solar Cell

A cell which converts solar energy to electric energy via electro-chemical (voltaic) effect to support a constant flow of charge is called photovoltaic solar cell.

Physiognomy

A classification of plant communities based entirely on outward appearance with taxonomic and ecologic relations being ignored (e.g., forest, grassland, and marsh) (Daubenmire, 1968).

Polishing

Polishing is a final water treatment process by which certain small quantities of a substance (e.g., minerals, hardness) are removed prior to final discharge or usage.

Polk Power Station Project

The proposed Polk Power Station Project includes the proposed power plant facilities with a nominal net 1,150-MW generating capacity; fuel delivery and storage facilities, by-product storage areas, cooling reservoir, water supply and wastewater treatment facilities, and associated transmission lines (TEC, 1992a).

Pollution Prevention

Pollution prevention measures are often incorporated into activities or facilities that have a potential to release pollutants to the environment because it has been shown that it is far easier to prevent the introduction of pollutants to the environment, than to try to remove them after a release. These measures are typically required by federal, state, or local regulations that seek to minimize the potential for adverse impacts to the natural and/or man-made environment. These measures take on a variety of forms depending on the facility, but typically consist of devices that either remove pollutants from solid, liquid, or air waste streams; or of measures taken to prevent or contain a spill, release, or discharge of a pollutant (PPA of 1990, PL 101-508).

Potable Water System

Water suitable for drinking is known as potable water. Public drinking water supply system is then called potable water system.

Power Block

The overall power plant facilities buildings.

Power Station

A building or a group of buildings where power is generated.

Prevention of Significant Deterioration (PSD)

Evaluation system used to evaluate the degree to which proposed emissions will deteriorate air quality.

Process Emission

Air emissions due to manufacturing processes are called process emissions. In the proposed project, the process emissions include small amounts of sulfur dioxide (SO_2) from the H_2SO_4 plant and minor, intermittent emissions of gaseous phase pollutants (H_2S, NH_3, and PM) from the gasification plant vents, or from some control valves due to system leaks. Process emissions can be minimized or eliminated by good operational and maintenance practices.

Process Water System

Water used in any manufacturing and/or production related process is called process water. Process water can be clean, demineralized water, or contaminated wastewater, depending on the purpose of usage. System which supplies and/or recycles process water is called a process water system.

Proximate Analysis

Analysis that measures the qualities of coal in terms of fuel (i.e., Moisture, Ash, Sulfur, Volatile Matter, Fixed Carbon, and Heating Value).

PSD Permit

Permit given by the FDEP allowing the release of emissions into the atmosphere.

Public Utility Regulatory Policies Act of 1978 (PURPA)

Enacted to give preferential rights to non-utility developers of qualifying facilities (QF). QF status enables production facilities to receive backup power, to claim state and federal exemptions, and to sell electricity to a utility at its avoided costs, i.e., the cost that the utility avoids in generating electricity itself or not purchasing it from another source.

Publicly-Owned Electric Utility

Electric systems owned by municipalities, federal and state public power projects, and cooperatives owned by their customers.

Qualifying Facility (QF)

Defined in the federal law known as the Public Utility Regulatory Policies Act of 1978 (PURPA). The definition includes small-power producers and cogenerators of electricity and steam (or other forms of energy) that are not themselves electric utilities.

Radial Stacker

A component in coal handling systems used to build a kidney-shaped active coal pile. Radial stackers are often equipped with a telescopic chute and water spray dust suppression.

Rail Car Rotary Dumper

A large mechanism used to secure and empty a rail car full of coal by turning it upside down. Rail car rotary dumpers, as well as a boom stacker, traveling stacker reclaimer, and rotary plow reclaim are common equipments (also techniques) used for coal unloading from rail cars and stacking operations.

Rated Capacity - See Capacity.

Recirculating Cooling Tower (also called off-stream or closed-cycle cooling tower)

A device for transforming waste heat to the atmosphere by evaporation of water in which the water is reused by the device. In a recirculating tower, a portion of the cooled water is discharged as "blowdown" in order to maintain a proper chemical equilibrium in the tower and balance the concentration of dissolved material resulting from evaporation. Intake of ambient water is required as "make-up" to equal the blowdown, evaporation, draft, and other losses from the tower.

Reclaimed Land

Mined land that has been reshaped, to aid ecological functions as a natural community.

Refractory Backup Brick

The brick layers located behind the gasifier hot face. Under normal operation, these bricks are regularly replaced. The backup brick is essentially a hazardous waste and primarily consists of aluminum, silica, and iron oxide minerals.

Regenerator

A device used to transfer heat from one part of a process to another. Commonly used to recover heat that would otherwise be released to the environment.

Reserve Margin

The difference between generating capacity and peak system load expressed as a percent of the peak system load.

Residual Fuels

Fuel oils that remain after lighter oils have been distilled off during the refining process. Except for start-up and flame stabilization, virtually all the oil used in steam plants is residual, or "heavy" fuel oil.

Retention Basin

Low-lying land (wet land) or a man-made reservoir used to allow primary sedimentation of settleable solids.

Reverse Osmosis

A process in which dissolved solids are removed from water by forcing the water through a membrane that allows passage of water but hinders passage of dissolved solids.

Rotary Plow Reclaim

Rotary plow reclaim, as well as rail car rotary dumpers, boom stacker, traveling stacker/reclaimer are commonly used coal handling, loading, unloading, and stacking methods/equipments in power plants.

Ruderal

Plants and wildlife communities developing in waste places or among rubbish (Wunderline, 1982).

Sand Tailings

Sand material remaining from the extraction process for mining.

Saybolt Universal Seconds

"Saybolt universal seconds" is the time in seconds from the reading of Saybold viscometer, and has a close relationship with the kinematic viscosity of fluid: $v = 0.0022t - 1.8/t$.

Septic Tank System

A watertight tank designed to slow down the movement of raw sewage and wastes so that solids can separate or settle out and be broken down by liquefaction and anaerobic bacterial action. This system does not purify sewage, eliminate odors, or destroy all solids matter.

Shrub

A bush; a low-growing, perennial plant, usually with several main stems arising near the ground (Steen, 1971).

Slag

Slag is the more or less completely fused and vitrified refuse matter separated during the reduction of a metal from its ore. In the proposed project, the word "slag" means the melted, liquid-like material generated in the gasifier. These slag particles are usually black, angular, and have a glass-like appearance. Slag is classified as non-hazardous, non-leachable, marketable material, and can be used as an alternative blasting material for surface preparation in the painting industry because of their low silica content.

Small Power Producer

A power generating unit with a capacity of 80 MW or less that uses as its primary energy source, biomass, waste, renewable resources, or geothermal resources.

Solar Thermal

Solar thermal,in this report, means solar thermal power plant. The function of such plants converts and transforms collected and concentrated solar radiation energy into electricity.

Spoil Pile

In terms of mining, the stacked or stockpiled unusable materials.

Stand-Alone CT Generating Units

Six CT units each with a nominal net generating capacity of 75 MW (TEC, 1992a).

Steam Generating Cycle

The steam generating cycle is the basic cycle used in steam power plants, which involves both the vapor and liquid phases during the thermal process. Depending on the condition of phases conversion, the cycle may be a Carnot vapor cycle, Rankine cycle, reheat cycle, or regenerative cycle. A device driven by the expansion of steam through its blades.

Steam Turbine

A rotary device driven by the expansion of steam through its blades. The driven shaft of this device is connected to a mechanical load such as an electrical generator.

Storm Water

Storm water consists of runoff from the land surface generated by a precipitation or irrigation event within a watershed. Watershed characteristics such as topography, soils, land-use, and vegetation cover determine how much water from each event is lost to groundwater (infiltration), to the atmosphere (evaporation and evapotranspiration), or remains as runoff.

Sub-Canopy

The smaller of the two size classes of woody vegetation. This vegetation is taller than the shrub vegetation.

Sub-Climax Community

A plant community in which the normal ecological succession has been halted by an environmental limitation (e.g., fire) (Daubenmire, 1968).

Summer

June 1 through September 30.

Syngas

Synthetic fuels, also called synfuels, syngas are gaseous (or liquid) fuel produced largely from coal but also from various wastes and biomass, generally by heating the material in the absence of oxygen but normally in the presence of water.

Syngas/Coal Gas

Syngas and coal gas are used interchangeably in the SCA and the EIS to refer to the combustible coal-derived gas produced in the gasification process and, after appropriate cleanup, used as fuel in the advanced CT in the IGCC unit (TEC, 1992a).

Syngas Cooling Deck

The building and its associated equipments used to cool the raw syngas. In the proposed project, the dimension of this unit is about 50'x35'x175'.

Syngas Scrubber

A component of HGCU, which removes entrained solids from the raw syngas.

Taxa

Classes of organisms.

Thermal Efficiency

A measure of the amount of electrical energy obtained (the work) per unit of input (the fuel); measured in the generating station by the heat rate (see Heat Rate).

Trace Elements

Elemental constituents of coal not considered to be major elemental constituents in terms of fuel (i.e., Arsenic, Beryllium, Cadmium, Chromium, Fluoride, Mercury, and Lead)

Track Hopper

Track hopper (shaped like an inverted cone) is a type of coal unloading equipment. In the proposed project, it is an enclosed, below-grade unloading facility equipped with four outlets, four belt feeders, and four manually operated rack and pinion slide gates.

Transitional (Community)

A separate plant community located on the border of two plant communities with common elements of the two plant communities. The "transition zone" often refers to the area between an upland and a wetland.

Transmission Line Corridor

A narrow tract of land used as a passageway for power plant transmission lines.

Ultimate Analysis

Analysis that measures major elemental constituents of coal in terms of fuel (i.e., Moisture, Carbon, Hydrogen, Nitrogen, Chlorine, Sulfur, Ash and Oxygen.

Upland

Any area that does not qualify as a wetland because the associated hydrologic regime is not sufficiently wet to elicit development of vegetation, soils, and/or hydrologic characteristics associated with wetlands. Such areas occurring within floodplains are more appropriately termed nonwetlands (USACOE, 1987).

U.S. Fish and Wildlife Service

The federal agency, along with the National Marine Fisheries Service, responsible for maintaining the list of, and regulating, Protected Species.

Vegetative Strata

The grouping of a plant community into layers, usually of plants of similar height (Daubinmire 1968).

Waters of the United States

(i) All waters are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;

(ii) All interstate water, including interstate "wetlands".

(iii) All other water such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, "wetlands", sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters:

(A) Which are or could be used by interstate or foreign travelers for recreational or other purposes;

(B) From which fish or shell fish are or could be taken and sold in interstate or foreign commerce; or

(C) Which are used or could be used for industrial purposes by industries in interstate commerce.

(iv) All impoundments of waters otherwise defined as waters of the United States under this definition;

(v) Tributaries of waters identified in paragraphs (i) through (vi) of this definition;

(vi) The territorial sea; and

(vii) "Wetlands" adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (i) through (vi) of this definition.

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR 423.11(m) which also meet the criteria of this definition) are not waters of the United States. This exclusion applies only to manmade bodies of water which neither were originally created in waters of the United States (such as disposal area in wetlands) nor resulted from the impoundment of waters of the United States (EPA, 1989a).

Watt

The electrical unit of power or rate of doing work.

Wetlands

Those areas inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted to saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas (USACOE, 1987).

Wildlife Corridor or Wildlife/Water Management Areas

The approximate 1,511-acre portion of the proposed Polk Power Station site to the west of SR 37; this area would be reclaimed in an integrated series of forested and non-forested wetlands and uplands, and would not contain power plant facilities or structures. After reclamation, the entire area would provide a wildlife corridor between the headwater areas of Payne Creek, the Little Manatee River and the South Prong Alafia River system (TEC 1992).

Winter

December 1 through March 31.

Xeric

Pertaining to arid or dry conditions (Steen 1971).

Year

The calendar year from January 1 through December 31.

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APPENDICES

PREFACE

The appendices for this FEIS have been reduced compared to the DEIS. Several appendices have been deleted for this FEIS and others have been updated. However, references in the FEIS text have still been made to selected appendices located in the DEIS published by EPA in February 1994. For informational purposes, a list of the appendices in the DEIS (Appendices A–V) is presented below and follows the list of appendices provided in this FEIS (Appendices A–G).

FEIS APPENDICES

DEIS APPENDICES

DEIS APPENDICES (continued)

APPENDIX A

- EPA New Source Determination
- EPA Draft National Pollutant Discharge Elimination System Permit

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E
ATLANTA, GEORGIA 30365

JAN 11 1994

Mr. A. Spencer Autry, Director
Environmental Planning
Tampa Electric Company
P.O. Box 111
Tampa, Florida 33601-0111

Re: Tampa Electric Company - New Source Determination
Polk County Power Project

Dear Mr. Spencer:

This is in response to your letter of December 21, 1991, requesting a new source determination on behalf of Tampa Electric Company (TECO) on its proposed power plant to be located on a 4,348 acre area in southwest Polk County, Florida. The proposed facility will be constructed in three phases. The first generating facilities at the site will be an integrated gasification combined cycle (IGCC) demonstration project supported in part through funding from the U.S. Department of Energy (DOE) under the Clean Coal Technology Demonstration program. The IGCC will consist of a nominal net 260 MW unit centered on a nominal net 150 MW advanced combustion turbine unit, with support facilities. Phase II will consist of construction of the two nominal 220 MW combined cycle units and one nominal 75 MW combustion turbine unit. Phase III will consist of five additional 75 MW combined combustion units. The full buildout of the facility would create a power station with a nominal generating capacity of approximately 1,150 MW. The applicable Standard Industrial Classification (SIC) Code is 4911.

There will be two point source discharges from the facility to waters of the United States. Outfall 001 will consist of cooling reservoir blowdown to an unnamed reclaimed lake. Contributing discharges to the cooling reservoir include recirculated cooling water, treated industrial wastewater plant effluent, treated sanitary sewage treatment plant effluent, low volume wastes, contaminated storm water from industrial areas, ground water seepage, and ground water makeup. Outfall 002 will consist of storm water runoff from areas associated with industrial activity.

I have tentatively determined that the proposed steam electric generating facility is a new source subject to the effluent guidelines for steam electric generating facilities (40 CFR Section 423.15). As you know, pursuant to Section 511(c) of the Clean Water Act, 33 U.S.C. § 1371, the proposed facility will require a

National Environmental Policy Act (NEPA) evaluation and preparation of an environmental impact statement (EIS) is required. The rationale for this decision is the fact that the proposed facility will discharge process wastewater covered by applicable effluent guidelines to waters of the U.S.

Furthermore, I have determined that the proposed cooling reservoir may qualify for the waste treatment system exclusion from the "waters of the United States" definition because it will have a dual use for cooling of the heat load and treatment of other wastes. The cooling reservior will provide additional treatment for wastewater streams generated on site at the power plant. A final decision on this matter is contingent upon the issuance of a Section 404 permit by the Corps of Engineers for the site area to be used for the construction of the cooling reservior.

If you have any further questions, please feel free to contact me.

Sincerely yours,

Patrick M. Tobin
Acting Regional Administrator

cc: Virginia B. Wetherell

DRAFT MAR 3 1 1994

PERMIT NO. FL0043869
Major non-POTW

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IV

AUTHORIZATION TO DISCHARGE UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Clean Water Act, as amended (33 U.S.C. 1251 et seq.; the "Act"),

Tampa Electric Company
P.O. Box 111
Tampa, Florida 33602-00111

is authorized to discharge from a facility located at

Polk Power Station
State Road 37 and County Road 630
Polk County, Florida 33835

to receiving waters named

Outfall 001 - Unnamed reclaimed lake to unnamed canal to Little Payne Creek
Outfall 002 - Unnamed reclaimed lake to unnamed canal to Little Payne Creek

in accordance with effluent limitations, monitoring requirements and other conditions set forth herein. The permit consists of this cover sheet, Part I 9 pages, Part II 16 pages, Part III 5 pages, Part IV 2 pages, Part V 5 pages, Table 1 and Attachment 1.

This permit shall become effective on

This permit and the authorization to discharge shall expire at midnight,

DRAFT

Date Issued

W. Ray Cunningham, Director
Water Management Division

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS - Final

1. During the period beginning on the effective date of this permit and lasting through expiration, the permittee is authorized to discharge from Outfall 001 - Cooling Pond Blowdown to an unnamed reclaimed lake to an unnamed canal to Little Payne Creek.

Such discharges shall be limited and monitored by the permittee as specified below:

EFFLUENT PARAMETERS	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS	
	Daily Maximum	Daily Average	Measurement Frequency	Sample Type
Flow, MGD	Report	Report	Continuous	Recorder/Calculation
Point of Discharge Temp., °F				
Summer (May-Oct)	Report	92.0	Continuous	Recorders
Winter (Nov-Apr)	Report	88.7	Continuous	Recorders
	Also see item 11, page I-5.			
Temperature, °C	Report	---	1/month	Grab
	Also see item 7, page I-4.			
pH, Standard Units	See item 2, pg. I-4.		1/month	Grab
Total Phosphorus (as P), mg/l	Report	Report	1/month	Grab
Total Ammonia (as N), mg/l	Report	---	1/month	Grab
	Also see item 5, page I-4.			
Un-ionized Ammonia, mg/l	0.02	Report	1/month	Calculation
	Also see item 7, page I-4.			
Dissolved Oxygen, mg/l	See item 6, page I-4.		1/day	Grab
Oil & Grease, mg/l	5.0	---	1/month	Grab
Total Nitrogen (as N), mg/l	Report	Report	1/month	Grab
	Also see item 5, page I-4.			
Total Kjeldahl Nitrogen, mg/l	Report	Report	1/month	Grab

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS - Final (continued)

1. During the period beginning on the effective date of this permit and lasting through expiration, the permittee is authorized to discharge from Outfall 001 - Cooling Pond Blowdown to an unnamed reclaimed lake to an unnamed canal to Little Payne Creek.

Such discharges shall be limited and monitored by the permittee as specified below:

EFFLUENT PARAMETERS	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS	
	Daily Maximum	Daily Average	Measurement Frequency	Sample Type
Total Sulfate, mg/l	Report	Report	1/month	Grab
Total Suspended Solids, mg/l	150.0	50.0	1/month	Grab
Total Residual Chlorine, mg/l	0.01	Report	1/month	Grab
Total Recoverable Antimony, mg/l	4.30	Report	2/year	Grab
Total Recoverable Arsenic, mg/l	0.05	Report	2/year	Grab
Total Recoverable Beryllium, µg/l	0.13	Report	2/year	Grab
Total Recoverable Cadmium, µg/l	1.2	Report	2/year	Grab
Total Recoverable Copper, µ/l	12.2	Report	2/year	Grab
Total Recoverable Iron, mg/l	1.0	Report	2/year	Grab
Total Recoverable Lead, µg/l	3.34	Report	2/year	Grab

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS - Final (continued)

1. During the period beginning on the effective date of this permit and lasting through expiration, the permittee is authorized to discharge from Outfall 001 - Cooling Pond Blowdown to an unnamed reclaimed lake to an unnamed canal to Little Payne Creek.

Such discharges shall be limited and monitored by the permittee as specified below:

EFFLUENT PARAMETERS	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS	
	Daily Maximum	Daily Average	Measurement Frequency	Sample Type
Total Recoverable Nickel, µg/l	163	Report	2/year	Grab
Total Recoverable Selenium, µg/l	5.0	Report	2/year	Grab
Total Recoverable Silver µg/l	0.07	Report	2/year	Grab
Total Recoverable Thallium, µg/l	48	Report	2/year	Grab
Total Recoverable Zinc, µg/l	110	Report	2/year	Grab
Specific Conductance, µmhos/cm	1275	Report	1/day	Garb
Gross Alpha Particle Activity (including radium 226, but excluding radon and uranium), pCi/L	15	Report	1/month	Grab
Carbonaceous Biochemical Oxygen Demand (5-day), mg/l	3.0	1.0	1/month	Grab
Total Hardness (as $CaCO_3$), mg/l	Report	Report	1/Month	Grab
Acute Whole Effluent Toxicity	See item 8, page I-4.		See Part IV	See Part IV

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS - Final (continued)

2. The pH shall not be less than 6.0 nor greater than 8.5 standard units.

3. There shall be no discharge of floating solids or visible foam in other than trace amounts, nor shall the effluent cause a visible sheen on the receiving waterbody (i.e., discharge canal).

4. Samples taken in compliance with the monitoring requirements specified on pages I-1, I-2 and I-3 shall be taken at the nearest accessible point after final treatment, but prior to mixing with the receiving waterbody (reclaimed lake).

5. The effluent concentrations for Total Nitrogen and Total Ammonia shall not exceed at any time, background levels, as indicated in attachment 1.

6. The daily minimum concentration for dissolved oxygen (DO) shall not be less than 5.0 mg/l. The time and depth for sampling DO shall be specified and recorded. DO monitoring shall occur after dawn and before 10 am, whenever possible.

7. Effluent samples for pH and temperature (grab) shall be taken simultaneously with each total ammonia grab sample. Un-ionized ammonia shall be calculated in accordance with Table I (attached). All measured values for pH, temperature, and total ammonia used to calculate an un-ionized ammonia value shall be reported as an attachment to the Discharge Monitoring Report (DMR) Form (EPA No. 3320-1). All calculated un-ionized ammonia values shall also be reported on the attachment. The daily maximum value for un-ionized ammonia for each reporting period shall be reported on the DMR.

8. The permittee shall conduct acute whole effluent toxicity (WET) monitoring as specified in Part IV to determine if reasonable potential to exceed Florida Administrative Code (FAC) §17-302.500(d) (April 25, 1993) exists. EPA will review the monitoring results and may modify this permit to include an acute WET limit if the results of any test (screening or definitive) indicate that there is reasonable potential to exceed FAC §17-302.500(d), consistent with the requirements of 40 CFR §122.44(d)(1)(iv).

9. If the results for a given sample analysis are such that any parameter is not detected at or above the minimum level for the test method used, a value of zero will be used for that sample in calculating an arithmetic mean value for the parameter. If the resulting calculated arithmetic mean value for that reporting period is zero, the permittee shall report "NODI=B" on the Discharge Monitoring Report (DMR) Form (EPA No. 3320-1). For each quantitative sample value that is not detectable, the test method used and the minimum level for that method shall be attached to and submitted with the DMR. The permittee shall then be considered in compliance with the appropriate effluent limitation and/or reporting requirement.

10. During plant operation, necessary measures shall be used to settle, filter, treat or absorb silt-containing or pollutant-laden storm water runoff to limit the suspended solids to 50.0 mg/l or less at Outfalls 001 and 002 during rainfall periods less than the 10-year, 24-hour rainfall event. Control measures shall consist at the minimum of filters, sediment traps, barriers, berms or vegetative planting. Exposed or disturbed soil shall be protected as soon as possible to minimize silt and sediment-laden runoff.

11. The temperature at the edge of the thermal mixing zone shall not exceed the limitations of Rule 17-302.520(4)(a), Florida Administrative Code (FAC), which states that the . The mixing zone shall be a 250 foot radius semicircle centered at the point of entry into the unnamed reclaimed lake. If the temperature at the point of discharge exceeds the applicable limitation on page I-1, the permittee shall take two additional grab samples one at the edge of the mixing zone and one at the northeastern corner of the unnamed reclaimed lake (to determine ambient temperature) within the same 24-hour period. Any difference in the value of the sample take at the edge of the mixing zone above the value of the sample take at the edge of the mixing zone shall be considered a violation of the permit.

B. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS - Final

1. During the period beginning on the effective date of this permit and lasting through expiration, the permittee is authorized to discharge from Outfall 002 - Storm water runoff associated with industrial activity to an unnamed old mine cut to an unnamed reclaimed lake to an unnamed canal to Little Payne Creek.

Such discharges shall be limited and monitored by the permittee as specified below:

EFFLUENT PARAMETERS	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS	
	Daily Maximum	Daily Average	Measurement Frequency	Sample Type
Flow, MGD	Report	Report	1/day of discharge	Estimate
Carbonaceous Biochemical Oxygen Demand (5-day), mg/l	Report	12.0	1/day of discharge	Grab
Total Suspended Solids, mg/l	50.0	Report	1/day of discharge	Grab
Oil & Grease, mg/l	5.0	Report	1/day of discharge	Grab
pH, Standard Units	See item 2, below.		1/day of discharge	Grab

2. The pH shall not be less than 6.0 nor greater than 8.5 standard units.

3. There shall be no discharge of floating solids or visible foam in other than trace amounts, nor shall the effluent cause a visible sheen on the receiving waterbody (i.e., unnamed reclaimed lake).

4. Samples taken in compliance with the monitoring requirements specified above shall be taken at the nearest accessible point after final treatment, but prior to mixing with the receiving waterbody.

continued

B. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS - Final (continued)

5. During plant operation, necessary measures shall be used to settle, filter, treat or absorb silt-containing or pollutant-laden storm water runoff to limit the suspended solids to 50.0 mg/l or less at Outfalls 001 and 002 during rainfall periods less than the 10-year, 24-hour rainfall event. Control measures shall consist at the minimum of filters, sediment traps, barriers, berms or vegetative planting. Exposed or disturbed soil shall be protected as soon as possible to minimize silt and sediment-laden runoff.

6. If the results for a given sample analysis are such that any parameter is not detected at or above the minimum level for the test method used, a value of zero will be used for that sample in calculating an arithmetic mean value for the parameter. If the resulting calculated arithmetic mean value for that reporting period is zero, the permittee shall report "NODI=B" on the Discharge Monitoring Report (DMR) Form (EPA No. 3320-1). For each quantitative sample value that is not detectable, the test method used and the minimum level for that method shall be attached to and submitted with the DMR. The permittee shall then be considered in compliance with the appropriate effluent limitation and/or reporting requirement.

C. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS - Final

1. During the period beginning on the effective date of this permit and lasting through expiration, the permittee is authorized to discharge from Internal Outfall 003 - Low Volume Waste (including Reverse Osmosis Concentrate, Boiler Blowdown & Lab Waste) to the site Cooling Reservoir.

Such discharges shall be limited and monitored by the permittee as specified below:

EFFLUENT PARAMETERS	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS	
	Daily Maximum	Daily Average	Measurement Frequency	Sample Type
Flow, MGD	Report	Report	1/month	Calculation
Total Suspended Solids, mg/l	100.0	30.0	1/month	Grab
Oil & Grease, mg/l	20.0	15.0	1/month	Grab
pH, Standard Units	See item 2, below.		1/month	Grab

2. The pH shall not be less than 6.0 nor greater than 9.0 Standard Units.

3. Samples taken in compliance with the monitoring requirements specified above shall be taken at the nearest accessible point after final treatment, but prior to entering the Cooling Reservoir.

4. If the results for a given sample analysis are such that any parameter is not detected at or above the minimum level for the test method used, a value of zero will be used for that sample in calculating an arithmetic mean value for the parameter. If the resulting calculated arithmetic mean value for that reporting period is zero, the permittee shall report "NODI=B" on the Discharge Monitoring Report (DMR) Form (EPA No. 3320-1). For each quantitative sample value that is not detectable, the test method used and the minimum level for that method shall be attached to and submitted with the DMR. The permittee shall then be considered in compliance with the appropriate effluent limitation and/or reporting requirement.

D. SCHEDULE OF COMPLIANCE

1. The permittee shall achieve compliance with the effluent limitations specified for discharges in accordance with the following schedule:

   a. Achieve effluent limitations.. Effective Date of Permit

   b. Submit Complete EPA Form 2C for Outfall 001..... No later than 2 years from commencement of discharge from Outfall 001

   c. Submit Complete EPA Form 2C for Outfall 002..... No later than 2 years from commencement of discharge from Outfall 002

   d. Submittal of the Biological Assessment Plan (Part III.N).....No later than 1 year prior to commercial startup

2. No later than 14 calendar days following a date identified in the above schedule of compliance, the permittee shall submit either a report of progress, or in the case of specific actions being required by identified dates, a written notice of compliance or noncompliance. In the latter case, the notice shall include the cause of noncompliance, any remedial actions taken, and the probability of meeting the nest scheduled requirement.

Part II

STANDARD CONDITIONS FOR NPDES PERMITS

SECTION A. GENERAL CONDITIONS

1. Duty to Comply

The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

2. Penalties for Violations of Permit Conditions

Any person who violates a permit condition is subject to a civil penalty not to exceed $25,000 per day for each violation. Any person who negligently violates any permit condition is subject to criminal penalties of $2,500 to $25,000 per day of violation, or imprisonment for not more than 1 year, or both. Any person who knowingly violates permit conditions is subject to criminal penalties of $5,000 to $50,000 per day of violation, or imprisonment for not more than 3 years, or both. Also, any person who violates a permit condition may be assessed an administrative penalty not to exceed $10,000 per violation with the maximum amount not to exceed $125,000. [Ref: 40 CFR 122.41(a)]

3. Duty to Mitigate

The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

4. Permit Modification

After notice and opportunity for a hearing, this permit may be modified, terminated, or revoked for cause including, but not limited to, the following:

a. Violation of any terms or conditions of this permit;

b. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts;

c. A change in any conditions that requires either temporary interruption or elimination of the permitted discharge; or

d. Information newly acquired by the Agency indicating the discharge poses a threat to human health or the environment.

If the permittee believes that any past or planned activity would be cause for modification or revocation and reissuance under 40 CFR 122.62, the permittee must report such information to the Permit Issuing Authority. The submittal of a new application may be required of the permittee. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

5. Toxic Pollutants

Notwithstanding Paragraph A-4, above, if a toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established under Section 307(a) of the Act for a toxic pollutant which is present in the discharge and such standard or prohibition is more stringent than any limitation of such pollutant in this permit, this permit shall be modified or revoked and reissued to conform to the toxic effluent standard or prohibition and the permittee so notified.

6. Civil and Criminal Liability

Except as provided in permit conditions on "Bypassing" Section B, Paragraph B-3, and "Upsets" Section b, Paragraph B-4, nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance.

7. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under Section 311 or the Act.

8. State Laws

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or regulation under authority preserved by Section 510 of the Act.

9. Property Rights

The issuance of this permit does not convey any property rights of any sort, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State, or local laws or regulations.

10. Onshore or Offshore Construction

This permit does not authorize or approve the construction of any onshore or offshore physical structures or facilities or the undertaking of any work in any waters of the United States.

11. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

12. Duty to Provide Information

The permittee shall furnish to the Permit Issuing Authority, within a reasonable time, any information which the Permit Issuing Authority may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The permittee shall also furnish to the Permit Issuing Authority upon request, copies of records required to be kept by this permit.

SECTION B. OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

1. Proper Operation and Maintenance

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

2. Need to Halt or Reduce not a Defense

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the condition of this permit.

3. Bypass of Treatment Facilities

a. Definitions

(1) "Bypass means the intentional diversion of waste streams from any portion of a treatment facility, which is not a designed or established operating mode for the facility.

(2) "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

b. Bypass not exceeding limitations.

The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of Paragraphs c. and d. of this section.

c. Notice

(1) Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten days before the date of the bypass; including an evaluation of the anticipated quality and effect of the bypass.

(2) Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in Section D, Paragraph D-8 (24-hour notice).

d. Prohibition of bypass

(1) Bypass is prohibited and the Permit Issuing Authority may take enforcement action against a permittee for bypass, unless:

(a) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;

(b) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of reasonable engineering judgement to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and

(c) The permittee submitted notices as required under Paragraph c. of this section.

(2) The permit Issuing Authority may approve an anticipated bypass, after considering its adverse effects, if the Permit Issuing Authority determines that it will meet the three conditions listed above in Paragraph d.(1) of this section.

4. Upsets

"Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, lack of preventive maintenance, or careless or improper operation. An upset constitutes an affirmative defense to an action brought for non-compliance with such technology based permit limitation if the requirements of 40 CFR 122.41(n)(3) are met.

5. Removed Substances

This permit does not authorize discharge of solids, sludge, filter backwash, or other pollutants removed in the course of treatment of control of wastewaters of the United States unless specifically limited in Part 1.

SECTION C. MONITORING AND RECORDS

1. Representative Sampling

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. All samples shall be taken at the monitoring points specified in this permit and, unless otherwise specified, before the effluent joins or is diluted by any other wastestream, body of water, or substance. Monitoring points shall not be changed without notification to and the approval of the Permit Issuing Authority.

2. Flow Measurements

Appropriate flow measurements devices and methods consistent with accepted scientific practices shall be selected and used to insure the accuracy and reliability of measurements of the volume of monitored discharges. The devices shall be installed, calibrated and maintained to insure that the accuracy of the measurements are consistent with the accepted capability of that type of device. Devices selected shall be capable of measuring flows with a maximum deviation of less than ±10% from the true discharge rates throughout the range of expected discharge volumes. Once-through condenser cooling water flow which is monitored by pump logs, or pump hour meters as specified in Part I of this permit and based on the manufacture's pump curves shall not be subject to this requirement. Guidance in selection, installation, calibration, and operation of acceptable flow measurement devices can be obtained from the following references:

(1) "A Guide of Methods and Standards for the Measurement of Water Flow", U.S. Department of Commerce, National Bureau of Standards, NBS Special Publication 421, May 1975, 97 pp. (Available from the U.S. Government Printing Office, Washington, D.C. 20402. Order by SD catalog No. C13.10:421.)

(2) "Water Measurement Manual", U.S. Department of Interior, Bureau of Reclamation, Second Edition, Revised Reprint, 1974, 327 pp. (Available from the U.S. Government Printing Office, Washington, D.C. 20402. Order by catalog No. 127.19/2:W29/2, Stock No. S/N 24003-0027.)

(3) "Flow Measurement in Open Channels and Closed Conduits", U.S. Department of Commerce, National Bureau of Standards, NBS Special Publication 484, October 1977, 982 pp. (Available in paper copy or microfiche from National Technical Information Service (NTIS), Springfield, VA 22151. Order by NTIS No. PB-273 535/5ST.)

(4) "NPDES Compliance Flow Measurement Manual", U.S. Environmental Protection Agency, Office of Water Enforcement, Publication MCD-77, September 1981, 135 pp. (Available from the General Service Administration (8BRC), Centralized Mailing Lists Services, Building 41, Denver Federal Center, Denver, CO. 80255.)

3. Monitoring Procedures

Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in this permit.

4. Penalties for Tampering

The Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate, any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or imprisonment for not more than 2 years, or both.

5. Retention of Records

The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report, or application. This period may be extended by the Permit Issuing Authority at any time.

6. Record Contents

Records of monitoring information shall include:

a. The date, exact place, and time of sampling or measurements;

b. The individual(s) who performed the sampling of measurements;

c. The date(s) analyses were performed;

d. The individual(s) who performed the analyses;

e. The analytical techniques or methods used; and

f. The results of such analysis.

7. Inspection and Entry

The permittee shall allow the permit Issuing Authority, or a authorized representative, upon the presentation of credentials and other documents as may be required by law, to;

a. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit.

c. Inspect at reasonable time any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

SECTION D. REPORTING REQUIREMENTS

1. Change in Discharge

The permittee shall give notice to the Permit Issuing Authority as soon as possible of any planned physical alterations or additions to the permitted Facility. Notice is required only when:

a. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source; or

b. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under Section D, Paragraph D-10(a).

2. Anticipated Noncompliance

The permittee shall give advance notice to the Permit Issuing Authority of any planned change in the permitted facility or activity which may result in noncompliance with permit requirements. Any maintenance or facilities, which might necessitate unavoidable interruption of operation and degradation of effluent quality, shall be scheduled during noncritical water quality periods and carried out in a manner approved by the Permit Issuing Authority.

3. Transfer of Ownership or Control

A permit may be automatically transferred to another if:

a. The permittee notifies the Permit Issuing Authority of the proposed transfer at least 30 days in advance of the proposed transfer date;

b. The notice includes a written agreement between the existing and new permittees containing a specific date for transfer of permit responsibility, coverage, and liability between them; and

c. The Permit Issuing Authority does not notify the existing permittee of his or her intent to modify or revoke and reissue the permit. If this notice is not received, the transfer is effective on the date specified in the agreement mentioned in paragraph b.

4. Monitoring Reports

See Part III of this permit.

5. Additional Monitoring by the Permittee

If the permittee monitors any pollutant more frequently than required by this permit, using test procedures approved under 40 CFR 136 or as specified in this permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the Discharge Monitoring Report (DMR). Such increased frequency shall also be indicated.

6. Averaging of Measurements

Calculations for limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified by the Permit Issuing Authority in the permit.

7. Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date. Any reports of noncompliance shall include the cause of noncompliance, any remedial actions taken, and the probability of meeting the next scheduled requirement.

8. Twenty-Four Hour Reporting

The permittee shall orally report any noncompliance which may endanger health or the environment, within 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause, the period of noncompliance, including the exact dates and times; and if the noncompliance has not been corrected, the anticipated time it is expected to continue, and steps taken or planned to reduce, eliminate and prevent reoccurrence of the noncompliance. The Permit Issuing Authority may verbally waive the written report, on a case-by-case basis, when the oral report is made.

The following violations shall be included in the 24 hour report when they might endanger health or the environment:

a. An unanticipated bypass which exceeds any effluent limitation in the permit.

b. Any upset which exceeds any effluent limitation in the permit.

9. Other Noncompliance

The permittee shall report in narrative form, all instances of noncompliance not previously reported under Section D, Paragraphs D-2, D-4, D-7, and D-8 at the time monitoring reports are submitted. The reports shall contain the information listed in Paragraph D-8.

10. Changes in Discharges of Toxic Substances

The permittee shall notify the Permit Issuing Authority as soon as it knows or has reason to believe:

a. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic substance(s) (listed at 40 CFR 122, Appendix D, Table II and III) which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

(1) One hundred micrograms per liter (100 ug/l);

(2) Two hundred micrograms per liter (200 ug/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 ug) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/l) for antimony; or

(3) Five (5) times the maximum concentration value reported for that pollutant(s) in the application.

b. That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant (listed at 40 CFR 122, Appendix D. Table II and III) which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

(1) Five hundred Micrograms per liter (500 ug/l);

(2) One milligram per liter (1 mg/l) for antimony; or

(3) Ten (10) times the maximum concentration value reported for that pollutant(s) in the permit application.

11. Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit. The application should be submitted at least 180 days before the expiration date of this permit. The Permit Issuing Authority may grant permission to submit an application less than 180 days in advance but not later than the permit expiration date.

Where EPA is the Permit Issuing Authority, the terms and conditions of this permit are automatically continued in accordance with 40 CFR 122.6, only where the permittee has submitted a timely and complete application for a renewal permit and the Permit Issuing Authority is unable through no fault of the permittee to issue a new permit before expiration date.

12. Signatory Requirements

All applications, reports, or information submitted to the Permit Issuing Authority shall be signed and certified.

a. All permit applications shall be signed as follows:

(1) For a corporation: by a responsible corporate officer. For the purpose of this Section, a responsible corporate officer means: (1) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or (2) the manager of one or more manufacturing production facilities employing more than 250 persons or having gross annual sales or expenditures exceeding 25 million (in second quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

(2) For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or

(3) For a municipality, State, Federal, or other public agencies by either a principal executive officer or ranking elected official.

b. All reports required by the permit and other information requested by the Permit Issuing Authority shall be signed by a person described above or by a duly authorized representative only if:

(1) The authorization is made in writing by person described above;

(2) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may this be either a named individual or any individual occupying a named position.); and

(3) The written authorization is submitted to the Permit Issuing Authority.

c. Certification. Any person signing a document under paragraphs (a) or (b) of this section shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

13. Availability of Reports

Except for data determined to be confidential under 40 CFR Part 2, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Permit Issuing Authority. As required by the Act, permit applications, permits and effluent data shall not be considered confidential.

14. Penalties for Falsification of Reports

The Clean Water Act provides that any person who knowingly makes any false material statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance, or who knowingly falsifies, tampers with, or renders inaccurate any monitoring device or method required to be maintained under the Clean Water Act, shall, upon conviction, be punished by a fine of not more than $10,000 or by imprisonment for not more than 2 years, or both.

SECTION E. DEFINITIONS

1. Permit Issuing Authority

The Regional Administrator of EPA Region IV or his designee, unless at some time in the future the State receives authority to administer the NPDES program and assumes jurisdiction over the permit; at which time, the Director of the State program receiving the authorization becomes the issuing authority.

2. Act

"Act" means the Clean Water Act (formerly referred to as the Federal Water Pollution Control Act) Public Law 92-500, as amended by Public Laws 95-217, 95-576, 96-483, 97-117, and 100-4, 33 U.S.C. 1251 et seq.

3. Mass/Day Measurements

a. The "average monthly discharges" is defined and the total mass of all daily discharges sampled and/or measured during a calendar month on which daily discharges are sampled and measured, divided by the number of daily discharges sampled and/or measured during such month. It is therefore, and arithmetic mean found by adding the weights of the pollutant found each day of the month and then dividing this sum by the number of days the tests were reported. The limitation is identified as "Daily Average" or "Monthly Average" in Part I of the permit and the average monthly discharge value is reported in the "Average" column under "Quantity" on the Discharge Monitoring Report (DMR).

b. The "average weekly discharge" is defined as the total mass of all daily discharges sampled and/or measured during the calendar week on which daily discharges are sampled and measured, divided by the number of daily discharges sampled and/or measured during such week. It is, therefore, an arithmetic mean found by adding the weights of pollutants found each day of the week and then dividing this sum by the number of days the tests were reported. This limitation is identified as "Weekly Average" in Part I of the permit. Enter the highest weekly average of sample measurements obtained during the reporting period in the "Maximum" column under "Quantity" on the DMR.

c. The "maximum daily discharge" is the total mass (weight) of a pollutant discharged during a calendar day. If only one sample is taken during any calendar day the weight of pollutant calculated from it is the "maximum daily discharge". This limitation is identified as "Daily Maximum", in Part I of the permit and the highest such value recorded during the reporting period is reported in the "Maximum" column under "Quantity" on the DMR.

d. The "average annual discharge" is a rolling average equal to the arithmetic mean of the mass measured in all discharges sampled and/or measured during consecutive reporting periods which comprise one year. For parameters that are measured at least once per month, the annual average shall be computed at the end of each month and is equal to the arithmetic mean of the monthly average of the month being reported and the monthly average of each of the previous eleven months. This limitation is defined as "Annual Average" in Part I of the permit and the average annual discharge value is reported in the "Average" column under "Quantity" on the DMR.

4. Concentration Measurements

a. The "average monthly concentration", other than for fecal coliform bacteria, is the sum of the concentrations of all daily discharges sampled and/or measured during a calendar month on which daily discharges are sampled and measured, divided by the number of daily discharges sampled and/or measured during such month (arithmetic mean of the daily concentration values). The daily concentration value is equal to the concentration of a composite sample or in the case of grab samples is the arithmetic mean (weighted by flow value) of all the samples collected during that calendar day. This limitation is identified as "Monthly Average" or "Daily Average" under "Other Limits" in Part I of the permit and the average monthly concentration value is reported under the "Average" column under "Quality" of the DMR.

b. The "average weekly concentration", other than for fecal coliform bacteria, is the sum of the concentrations of all daily discharges sampled and/or measured during a calendar week on which daily discharges are sampled and measured divided by the number of daily discharges sampled and/or measured during such week (arithmetic mean of the daily concentration values). The daily concentration value is equal to the concentration of a composite sample or in the case of grab samples is the arithmetic mean (weighted by flow value) of all the samples collected during that calendar day. This limitation is identified as "Weekly Average" under "Other Limits" in Part I of the permit. Enter the highest weekly average of sample measurements obtained during the reporting period in the "Maximum" column under "Quality" on the DMR.

c. The "maximum daily concentration" is the concentration of a pollutant discharged during a calendar day. It is identified as "Daily Maximum" under "Other Units" in Part I of the permit and the highest such value recorded during the reporting period is reported under the "Maximum" column under "Quality" on the DMR.

d. The "average annual concentration", other than fecal coliform bacteria, is the rolling average equal to the arithmetic mean of the effluent or influent samples collected during consecutive reporting periods which comprise one year. For parameters that are measured at least once per month, the annual average shall be computed at the end of each month and is equal to the arithmetic mean of the monthly average of the month being reported and the monthly average of each of the previous eleven months. This limitation is identified as "Annual Average" under "Other Limits" in Part I of the permit and the average annual concentration value is reported under the "Average" column under "Quality" on the DMR.

5. Other Measurements

a. The effluent flow expressed as million gallons per day (MGD) is the 24 hour average flow averaged monthly. It is the arithmetic mean of the total daily flows recorded during the calendar month. Where monitoring requirements for flow are specified in Part I of the permit the flow rate values are reported in the "Average" column under "Quantity" on the DMR.

b. An "instantaneous flow measurement" is a measure of flow taken at the time of sampling, when both the sample and flow will be representative of the total discharge.

c. Where monitoring requirements for pH, dissolved oxygen or fecal coliform bacteria are specified in Part I of the permit, the values are generally reported in the "Quality or Concentration" column on the DMR.

d. The "average annual discharge" for fecal coliform bacteria shall be calculated in the same manner as that for mass limitations (see item II.E.3.d.).

6. Types of Samples

a. Composite Samples: A "composite sample" is a combination of not less than 8 influent or effluent portions, of at least 100 ml, collected over the full time period specified in Part I.A. The composite sample must be flow proportioned by either time interval between each aliquot or by volume as it relates to effluent flow at the time of sampling or total flow since collection of the previous aliquot. Aliquots may be collected manually or automatically.

b. Grab Samples: A "grab sample" is a single influent or effluent portion which is not a composite sample. The sample(s) shall be collected at the period(s) most representative of the total discharge.

7. Calculation of Means

a. Arithmetic Mean: The "arithmetic mean" of any set of values is the summation of the individual values divided by the number of individual values.

b. Geometric Mean: The "geometric mean" of any set of values is the N^{th} root of the product of the individual values where N is equal to the number of individual values. The geometric mean is equivalent to the antilog of the arithmetic mean of the logarithms of the individual values. For purposes of calculating the geometric mean, values of zero (0) shall be considered to be one (1).

c. Weighted by Flow Value: "Weighted by flow value" means the summation of each concentration times its respective flow divided by the summation of the respective flows.

8. Calendar Day

A "calendar day" is defined as the period from midnight of one day until midnight of the next day. However, for purposes of this permit, any consecutive 24-hour period that reasonably represents the calendar day may be used for sampling.

9. Hazardous Substance

A "hazardous substance" means any substance designated under 40 CFR Part 116 pursuant to Section 311 of the Clean Water Act.

10. Toxic Pollutants

A "toxic pollutant" is any pollutant listed as toxic under Section 307(a)(1) of the Clean Water Act.

Part III - OTHER REQUIREMENTS

A. Reporting of Monitoring Results

Monitoring results obtained each calendar month must be summarized for that month and reported on a Discharge Monitoring Form (EPA No. 3320-1), postmarked no later than the 28th day of the month following the completed calendar month. (For example, data for January shall be submitted by February 28th.) Signed copies of these, and all other reports required by Section D of Part II, "Reporting Requirements", and Part III shall be submitted to the Permit Issuing Authority at the following address:

Environmental Protection Agency
Region IV
Water Management Division
Enforcement Section
345 Courtland Street
Atlanta, Georgia 30365

If no discharge occurs during the reporting period, sampling requirements of this permit do not apply. The statement "No Discharge" shall be written on the DMR form. If during the term of this permit the facility ceases discharge to surface waters, the Permit Issuing Authority and the State shall be notified immediately upon cessation of discharge. This notification shall be in writing.

B. Reopener Clause

This permit shall be modified, or alternatively, revoked and reissued to comply with any applicable effluent standard or limitation, or sludge disposal requirement issued or approved under Sections 301(b)(2)(c) and (D), 304(b)(2), and 307(a)(2) of the Clean Water Act, if the effluent standard or limitation, or sludge disposal requirement so issued or approved:

(1) Contains different conditions or is otherwise more stringent than any condition in the permit; or
(2) Controls any pollutant, or disposal method not in the permit.

The permit as modified or reissued under this paragraph shall contain any other requirements of the Act then applicable.

Specifically, the effluent limitations for total recoverable cadmium, total recoverable copper, total recoverable lead, total recoverable nickel, and total recoverable zinc may be adjusted after two-years from the commencement of discharge from Outfall 001 to incorporate more stringent limitations based data on the total hardness of the effluent.

C. Polychlorinated Biphenyl Compounds

There shall be no discharge of polychlorinated biphenyl compounds, such as those commonly used for transformer fluid.

D. Toxic Compounds

The company shall notify the Director in writing at least six months prior to planned use and discharge of any chemical, other than chlorine or other product previously reported to the Director, which may be toxic to aquatic life. Such notification shall include:

1. Name and general composition of the chemical,
2. Frequencies of use,
3. Quantities to be used,
4. Proposed discharge concentrations,
5. Half-life and degradation products of each compound from die-away studies,
6. Product Data Sheet,
7. Product label, and
8. Acute and chronic toxicity data (including laboratory reports). This information shall include any tests performed by the vendor and another set of toxicity bioassays examining synergistic effects, as follows:

One time toxicity tests should be conducted according to Part IV.1 of the permit on the proposed chemicals using grab samples of 100% effluent as the dilution water. All proposed chemicals should be combined together with the effluent at several dilutions, including the highest proposed concentration (100%), 50% of the highest concentration, 25%, 12.5%, and 6.25%. Two control solutions should be used: a regular freshwater control prepared in accordance with EPA/600/4-90/027 (or the most current edition), and a grab sample of 100% effluent (without the proposed additives). Also, if a previously approved additive has not yet been put into use by the facility, an additional test shall be run, using effluent samples to which the approved compound has also been added (at expected maximum effluent concentrations) as the dilution water. Effluent concentrations should be measured, if possible, at the initiation of the test and every 24 hours thereafter until the end of the test period. For all new proposed additives, a separate test must also be conducted using laboratory-produced moderately hard water as the control/dilution water.

Information shall be reported according to protocol outlined in Section 12 of EPA/600/4-90/027, or the most current edition. Upon receipt of this information, EPA will determine if a major modification to this permit is warranted. Discharge of materials subject to this part is prohibited prior to approval by the permitting authority.

E. Products Registered Under FIFRA

Discharge of any product under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) to any waste stream which may ultimately be released to lakes, rivers, streams, or other waters of the United States is prohibited unless specifically authorized elsewhere in this permit. This requirement is not applicable to products used for lawn and agricultural purposes, or to herbicides if used in accordance with labeled instructions and any applicable State permit.

F. Combined Waste Streams

In the event that waste streams from various sources are combined for treatment or discharge, the quantity of each pollutant or pollutant property attributable to each controlled waste source shall not exceed the specified limitation for that waste source (ref. 40 CFR Section 423.15(n);1982).

G. Total Residual Chlorine (TRC)

Testing for TRC shall be conducted according to either the low-level amperometric titration method, of the DPD colorimetric method as specified in Section 4500-Cl E. or 4500-Cl G., respectively, Standard Methods for the Examination of Water and Wastewater, 17th edition (or most current edition).

H. Erodible Materials

The permittee shall not store coal, soil, or other similar erodible materials in a manner in which runoff is uncontrolled, nor shall construction activities be conducted in a manner which produces uncontrolled runoff unless such uncontrolled runoff has been specifically approved by the Director. "Uncontrolled" shall mean without sedimentation basin or other controls approved by the Director.

I. Detection Limit

If a quantitative value is not detectable for any parameter limited or monitored, as required by this permit, the permittee shall report "NODI=B" on the Discharge Monitoring Report (DMR) Form (EPA No. 3320-1). The test method, as well as the minimum level for the analytical test method selected, shall be attached to and submitted with the DMR. The permittee shall then be considered to be in compliance with the appropriate effluent reporting requirement.

J. Burning of Chemical Wastes

The discharge of any waste resulting from the combustion of chemical metal cleaning wastes, toxic wastes, or hazardous wastes to any waste stream which ultimately discharges to waters of the United States is prohibited, unless specifically authorized elsewhere in this permit.

K. Unauthorized Discharges

Unless as otherwise authorized by this permit, no direct discharge from any solid waste storage area, or from any on-site retention ponds, to waters of the United States is authorized by this permit without prior approval by the Director, Water Management Division.

Additionally, there shall be no point source discharge of metal cleaning waste to any waste stream which ultimately discharges to waters of the United States, except wastes associated with combustion turbine and compressor wash operations. Wash water associated with combustion turbine and compressor wash operations shall be routed to the equalization basin for

treatment, and are authorized to be discharged to site cooling reservoir.

Per 40 CFR Section 423.11(d) (dated 11/19/82), metal cleaning waste means any wastewater resulting from cleaning (with or without chemical compounds) any metal process equipment including, but not limited to, boiler tube cleaning, boilerside cleaning, and air preheater cleaning.

L. Loading and Unloading Facilities

The permittee shall operate and maintain loading and unloading facilities in such a manner in order to preclude spillage of coal, chemicals, etc., used at the facility, and shall take all actions necessary to clean-up and control any such spill which may occur.

M. Storm Water Discharges from Petroleum Storage Areas

The permittee is authorized to discharge storm water from diked petroleum storage or handling areas, provided the following conditions are met:

Such discharges shall be limited and monitored by the permittee as specified below:

1. The facility shall have a valid SPCC Plan pursuant to 40 CFR Part 112.

2. In draining the diked area, a portable oil skimmer or similar device or absorbent material shall be used to remove oil and grease (as indicated by the presence of a sheen) immediately prior to draining.

3. Monitoring records shall be maintained in the form of log and shall contain the following information, as a minimum:

   a. Date and time of discharge;
   b. Estimated volume of discharge;
   c. Initials of person making visual inspection and authorizing discharge; and
   d. Observed conditions of storm water discharged.

4. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of a visible oil sheen at any time.

N. Biological Assessment Plan of Study

Per the State Certification, no later than one year prior to commercial startup the permittee shall submit to the permitting authority a Biological Assessment Plan of Study for macroinvertebrates for the receiving waterbody (reclaimed lake). Upon approval of the plan of study by the permitting authority, the permittee shall carry out this biological assessment prior to commercial startup, and once every five years thereafter.

O. Acute Whole Effluent Toxicity Testing

The permittee shall conduct acute whole effluent toxicity monitoring, as specified in Part IV. The effluent shall be monitored for acute whole effluent toxicity twice a year. EPA shall review these tests and the permit may be reopened for modification to establish an acute whole effluent toxicity limit, as authorized and required by 40 CFR Section 122.44(d)(1)(iv) to ensure that the requirements of Florida Administrative Code (FAC) 17-4.244(3)(a) (June 13, 1993) are maintained.

PART IV
Whole Effluent Toxicity Testing Program

As required by Part I of this permit, the permittee shall initiate the series of tests described below beginning no later than 120 days from the commencement of discharge to evaluate whole effluent toxicity of the discharge from outfall 001. All test species, procedures and quality assurance criteria used shall be in accordance with Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms, EPA/600/4-90/027, or the most current edition, unless otherwise specified below. The dilution/control water used will moderately hard water as described in EPA/600/4-90/027, Section 7. A standard reference toxicant quality assurance test shall be conducted concurrently with each species used in the toxicity tests and the results submitted with the Discharge Monitoring Report (DMR) Form. Alternatively, if monthly QA/QC reference toxicant tests are conducted, these results must be submitted with the DMR.

1. All screening and definitive tests shall be conducted on a grab sample. If control mortality exceeds 10% for either species, the test for that species (including the control) shall be repeated. A test will be considered valid only if control mortality does not exceed 10% for either species. Results from all tests shall be reported according to EPA/600/4-90/027, Section 12, Report Preparation (or the most current edition). Each report shall be submitted to EPA within 45 days of completion of a given test.

2. a. The permittee shall monitor acute whole effluent toxicity by conducting 96-hour static screening tests on the test species Ceriodaphnia dubia and Cyprinella leedsi (Notropis leedsi), twice a year on samples of whole (100%) effluent and a control (0% effluent). The permittee may request that the permit be modified to reduce the test frequency to annually, once three valid consecutive biannual screening tests demonstrate no unacceptable toxicity.

   b. All screening test results are to be entered on the DMR in the following manner: if less than 80% survival of a test species occurs in any test, '<100%' should be entered on the DMR for that species. If 80% or greater survival occurs, '>100%' should be entered.

3. a. If unacceptable toxicity is noted in any valid screening test, a minimum of two valid 96-hour static renewal definitive acute toxicity tests shall be completed within 30 days of the completion of the screening test on the specie(s) indicating unacceptable toxicity. If only two follow-up definitive tests are run, they must be initiated at least seven days apart. All tests shall be conducted on a control (0%) and the following dilution concentrations: 100.0%, 50.0%, 25.0%, 12.5%, and 6.25%.

b. Results from the definitive tests, required due to unacceptable acute toxicity in the "screening" test, must be reported on the DMR Form for the month in which the first definitive test was begun.

PART V

BEST MANAGEMENT PRACTICES/POLLUTION PREVENTION CONDITIONS FOR STEAM ELECTRIC GENERATING FACILITIES

In accordance with Section 304(e) and 402(a)(2) of the Clean Water Act (CWA) as amended, 33 U.S.C. §§ 1251 et seq., and consistent with the policy of the Pollution Prevention Act of 1990, 42 U.S.C. §§ 13101-13109, the permittee must develop and implement a Best Management Practices plan incorporating pollution prevention measures. References which may be used in developing the plan are "Criteria and Standards for Best Management Practices Authorized Under Section 304(e) of the Act", found at 40 CFR 125, Subpart K, the Storm Water Management Industrial Activities Guidance Manual, EPA/833-R92-002 and other EPA documents relating to Best Management Practice guidance.

1. Definitions

   a. The term **"pollutants"** refers to conventional, non-conventional and toxic pollutants, as appropriate for the NPDES storm water program and toxic pollutants.

   b. Conventional pollutants are: biochemical oxygen demand (BOD), suspended solids, pH, fecal coliform bacteria and oil & grease.

   c. Non-conventional pollutants are those which are not defined as conventional or toxic, such as phosphorus, nitrogen or ammonia. (Ref: 40 CFR Part 122, Appendix D, Table IV)

   d. For purposes of this part, Toxic pollutants include, but are not limited to: a) any toxic substance listed in Section 307(a)(1) of the CWA, any hazardous substance listed in Section 311 of the CWA, and b) any substance (that is not also a conventional or non-conventional pollutant) for which EPA has published an acute or chronic toxicity criterion, or that is a pesticide regulated by the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA).

   e. **"Pollution prevention"** refers to the first category of EPA's preferred hazardous waste management strategy - source reduction.

   f. **"Significant Materials"** is defined as raw materials; fuels; materials such as solvents and detergents; hazardous substances designated under Section 101(14) of CERCLA; and any chemical the facility is required to report pursuant to EPCRA, Section 313; fertilizers; pesticides; and waste products such as ashes, slag and sludge.

g. **"Source reduction"** means any practice which: i) reduces the amount of any pollutant entering a waste stream or otherwise released into the environment (including fugitive emissions) prior to recycling, treatment or disposal; and ii) reduces the hazards to public health and the environment associated with the release of such pollutant. The term includes equipment or technology modifications, process or procedure modifications, reformulation or redesign of products, substitution of raw materials, and improvements in housekeeping, maintenance, training, or inventory control. It does not include any practice which alters the physical, chemical, or biological characteristics or the volume of a pollutant through a process or activity which itself is not integral to, or previously considered necessary for, the production of a product or the providing of a service.

h. **"BMP3"** means a Best Management Plan incorporating the requirements of 40 CFR § 125, Subpart K, plus pollution prevention techniques, except where other existing programs are deemed equivalent by the permittee. The permittee shall certify the equivalency of the other referenced programs.

i. **"Reportable Quantity (RQ) Discharge"** A RQ release occurs when a quantity of a hazardous substance or oil is spilled or released within a 24-hour period of time and exceeds the RQ level assigned to that substance under CERCLA or the Clean Water Act. These levels or quantities are defined in terms of gallons or pounds. Regulations listing these quantities are contained at 40 CFR 302.4, 40 CFR 117.21 and 40 CFR 110.

j. The term **"material"** refers to chemicals or chemical products used in any plant operation (i.e., caustic soda, hydrazine, degreasing agents, paint solvents, etc.). It does not include lumber, boxes, packing materials, etc.

2. Best Management Practices/Pollution Prevention Plan

The permittee shall develop and implement a BMP3 plan for the facility which is the source of wastewater and storm water discharges covered by this permit. The plan shall be directed toward reducing those pollutants of concern which discharge, or could discharge, to surface waters to and shall be prepared in accordance with good engineering and good housekeeping practices. For the purposes of this permit, pollutants of concern shall be limited to toxic pollutants and significant materials, as defined above, known to the discharger. The plan shall address all activities which could or do contribute these pollutants to the surface water discharge, including storm water, water and waste treatment, and plant ancillary activities.

3. Signatory Authority & Management Responsibilities

A copy of the BMP3 plan shall be retained at the facility and shall be made available to the permit issuing authority upon request.

The BMP3 plan shall contain a written statement from corporate or plant management indicating management's commitment to the goals of the BMP3 program. The BMP3 plan shall be signed and reviewed by the plant environmental engineering staff and plant management.

4. BMP3 Plan Requirements

The following requirements may be incorporated by reference from existing facility procedures:

a. **Name and description of facility**

b. **A site map** - At a minimum the site map must include information of the following: discharge points ("outfalls"); drainage patterns; identification of the types of pollutants likely to be discharged from each drainage area; direction of flow; surface water bodies, including any proximate stream, river, lake, or other waterbody receiving storm water discharge from the site; structural control measures (physically constructed features used to control storm water flows); locations of "significant materials" exposed to storm water; locations of industrial activities (such as fueling stations, loading and unloading areas, vehicle or equipment maintenance areas, waste disposal areas, storage areas).

c. **A materials inventory** including the types of materials that are handled, stored, or processed onsite, particularly significant materials. To complete the materials inventory, the permittee must list materials that have been exposed to storm water in the past 3 years (focus on areas where materials are stored, processed, transported, or transferred and provide a narrative description of methods and location of storage and disposal areas, materials management practices, treatment practices, and any structural/nonstructural control measures.

d. **A list of significant spills and leaks of toxic or hazardous materials that have occurred in the past 3 years.** "Significant spills" includes releases in excess of reportable quantities.

e. **A summary of any existing storm water sampling data and a description of the sample collection procedures used.**

f. **A site evaluation summary** - The Site Evaluation Summary should provide a narrative description of activities with a high potential to contaminate storm water at the site, including those associated with materials loading and unloading, outdoor storage, outdoor manufacturing or processing, onsite disposal, and significant dust or particulate generating activities. The summary should also include a description of any pollutants of concern that may be associated with such activities.

g. **A narrative description of the following BMP's:**

(i) - Good Housekeeping Practices

(ii) - Preventive Maintenance The permittee must develop a preventive maintenance program that involves inspections and maintenance of storm water management devices and routine inspections of facility operations to detect faulty equipment. Equipment (such as tanks, containers, and drums) should be checked regularly for signs of deterioration.

(iii) - Visual Inspections Regular inspections shall be performed by qualified, trained plant personnel. Reports shall note when inspections were done, the name of the person who conducted the inspection, which areas were inspected, what problems were found, and what steps were taken to correct any problems.

(iv) - Spill Prevention and Responses Areas where spills are likely to occur and their drainage points must be clearly identified in the BMP3 plan. Employees shall be made aware of response procedures, including material handling and storage requirements, and should have access to appropriate cleanup equipment.

(v) - Sediment and Erosion Control The BMP3 must identify activities that present a potential for significant soil erosion and measures taken to control such erosion.

(vi) - Management of Runoff The permittee must describe existing storm water controls found at the facility and any additional measures that can be implemented to improve the prevention and control of polluted storm water. Examples include: vegetative swales, reuse of collected storm water, infiltration trenches, and detention ponds.

5. Best Management Practices & Pollution Prevention Committee:

A Best Management Practices Committee (Committee) should be established to direct or assist in the implementation of the BMP3 plan. The Committee should be comprised of individuals within the plant organization who are responsible for developing, implementing, monitoring of success, and revision of the BMP3 plan. The activities and responsibilities of the Committee should address all aspects of the facility's BMP3 plan. The scope of responsibilities of the Committee should be described in the plan.

6. Employee Training

Employee training programs shall inform appropriate personnel of the components & goals of the BMP3 plan and shall describe employee responsibilities for implementing the plan. Training shall address topics such as good housekeeping, materials management, recordkeeping & reporting, spill prevention & response, as well as specific waste reduction practices to be employed. The plan shall identify periodic dates for such training.

7. Plan Development & Implementation

The BMP3 plan shall be developed or updated within 3 months after the effective date of this permit and implemented 6 months after the effective date of this permit, unless any later dates are specified by the Director.

In cases of facilities that were not previously required to have a BMP plan, the plan must be developed within 6 months after the plant start-up and implemented within 18 months after plant start-up, unless any later dates are specified by the Director.

8. Plan Review & Modification

If following review by the Permit Issuing Authority, or authorized representative, the BMP3 plan is determined insufficient, he/she may notify the permittee that the BMP3 plan does not meet one or more of the minimum requirements of this Part. Upon such notification from the Permit Issuing Authority, or authorized representative, the permittee shall amend the plan and shall submit to the Permit Issuing Authority a written certification that the requested changes have been made. Unless otherwise provided by the Permit Issuing Authority, the permittee shall have 30 days after such notification to make the changes necessary.

The permittee shall modify the BMP3 plan whenever there is a change in design, construction, operation, or maintenance, which has a significant effect on the potential for the discharge of pollutants to waters of the United States or if the plan proves to be ineffective in achieving the general objectives of reducing pollutants in wastewater or storm water discharges. Modifications to the plan may be reviewed by EPA in the same manner as described above.

9. Annual Site Compliance Evaluation

Qualified personnel must conduct site compliance evaluations at appropriate intervals, but at least once a year. Compliance evaluations shall include:

- inspection of storm water drainage areas for evidence of pollutants entering the drainage system;

- evaluation of the effectiveness of BMP's;

- observations of structural measures, sediment controls, and other storm water BMP's to ensure proper operation;

- revision of the plan as needed within 2 weeks of the inspection, and implementation of any necessary changes within 12 weeks of the inspection; and

- preparation of a report summarizing inspection results and follow-up actions, identifying the date of inspection and personnel who conducted the inspection.

The inspection report shall be signed by the plant environmental engineering staff and plant management and kept with the BMP3 plan.

10. Recordkeeping and Internal Reporting

For at least one year after the expiration of this permit, the permittee shall record and maintain records of spills, leaks, inspections, and maintenance activities. For spills and leaks, records should include information such as the date and time of the incident, weather conditions, cause, and resulting environmental problems.

Percent Un-ionized Ammonia in Aqueous Ammonia Solution

Temperature: Degrees Celcius

pH	5.5000	6.0000	6.5000	7.0000	7.5000	8.0000	8.5000	9.0000	9.5000	10.0000
6.0000	0.0130	0.0136	0.0141	0.0147	0.0153	0.0159	0.0166	0.0172	0.0179	0.0186
6.1000	0.0164	0.0171	0.0178	0.0185	0.0192	0.0200	0.0208	0.0217	0.0225	0.0235
6.2000	0.0206	0.0215	0.0224	0.0233	0.0242	0.0252	0.0262	0.0273	0.0284	0.0295
6.3000	0.0260	0.0270	0.0282	0.0293	0.0305	0.0317	0.0330	0.0344	0.0357	0.0372
6.4000	0.0327	0.0340	0.0354	0.0369	0.0384	0.0400	0.0416	0.0432	0.0450	0.0468
6.5000	0.0412	0.0429	0.0446	0.0464	0.0483	0.0503	0.0523	0.0544	0.0566	0.0589
6.6000	0.0518	0.0539	0.0562	0.0585	0.0608	0.0633	0.0659	0.0685	0.0713	0.0741
6.7000	0.0652	0.0679	0.0707	0.0736	0.0766	0.0797	0.0829	0.0862	0.0897	0.0933
6.8000	0.0821	0.0855	0.0890	0.0926	0.0964	0.1000	0.1040	0.1090	0.1130	0.1170
6.9000	0.1030	0.1080	0.1120	0.1170	0.1210	0.1260	0.1310	0.1370	0.1420	0.1480
7.0000	0.1300	0.1350	0.1410	0.1470	0.1530	0.1590	0.1650	0.1720	0.1790	0.1860
7.1000	0.1640	0.1700	0.1770	0.1850	0.1920	0.2000	0.2080	0.2160	0.2250	0.2340
7.2000	0.2060	0.2140	0.2230	0.2320	0.2420	0.2520	0.2620	0.2720	0.2830	0.2940
7.3000	0.2590	0.2700	0.2810	0.2920	0.3040	0.3160	0.2390	0.3420	0.3560	0.3700
7.4000	0.3260	0.3390	0.3530	0.3680	0.3830	0.3980	0.4140	0.4310	0.4480	0.4660
7.5000	0.4100	0.4270	0.4440	0.4620	0.4810	0.5010	0.5210	0.5420	0.5630	0.5860
7.6000	0.5160	0.5370	0.5590	0.5820	0.6050	0.6290	0.6550	0.6810	0.7080	0.7360
7.7000	0.6480	0.6750	0.7020	0.7310	0.7600	0.7910	0.8230	0.8560	0.8900	0.9250
7.8000	0.8150	0.8480	0.8830	0.9190	0.9550	0.9940	1.0300	1.0700	1.1200	1.1600
7.9000	1.0200	1.0700	1.1100	1.1500	1.2000	1.2500	1.3000	1.3500	1.4000	1.4600
8.0000	1.2900	1.3400	1.3900	1.4500	1.5100	1.5700	1.6300	1.6900	1.7600	1.8300
8.1000	1.6100	1.6800	1.7500	1.8200	1.8900	1.9600	2.0400	2.1200	2.2100	2.2900
8.2000	2.0200	2.1000	2.1900	2.2800	2.3700	2.4600	2.5600	2.6600	2.7600	2.8700
8.3000	2.5300	2.6300	2.7400	2.8500	2.9600	3.0800	3.2000	3.3200	3.4500	3.5800
8.4000	3.1700	3.2900	3.4200	3.5600	3.7000	3.8400	3.9900	4.1500	4.3100	4.4700
8.5000	3.9500	4.1100	4.2700	4.4400	4.6100	4.7900	4.9700	5.1600	5.3600	5.5600
8.6000	4.9300	5.1200	5.3200	5.5300	5.7400	5.9600	6.1800	6.4200	6.6600	6.9100
8.7000	6.1300	6.3600	6.6100	6.8600	7.1200	7.3900	7.6600	7.9500	8.2400	8.5400
8.8000	7.5900	7.8800	8.1800	8.4800	8.8000	9.1200	9.4600	9.8000	10.2000	10.5000
8.9000	9.3700	9.7200	10.1000	10.5000	10.8000	11.2000	11.6000	12.0000	12.5000	12.9000
9.0000	11.5000	11.9000	12.4000	12.8000	13.3000	13.7000	14.2000	14.7000	15.2000	15.7000
9.1000	14.1000	14.6000	15.1000	15.6000	16.1000	16.7000	17.2000	17.8000	18.4000	19.0000
9.2000	17.1000	17.7000	18.3000	18.9000	19.5000	20.1000	20.8000	21.4000	22.1000	22.8000
9.3000	20.6000	21.3000	22.0000	22.7000	23.4000	24.1000	24.8000	25.6000	26.3000	27.1000
9.4000	24.6000	25.4000	26.2000	27.0000	27.7000	28.6000	29.4000	30.2000	31.0000	31.9000
9.5000	29.2000	30.0000	30.9000	31.7000	32.6000	33.5000	34.4000	35.3000	36.2000	37.1000
9.6000	34.1000	35.1000	36.0000	36.9000	37.8000	38.8000	39.7000	40.7000	41.6000	42.6000
9.7000	39.5000	40.5000	41.4000	42.4000	43.4000	44.4000	45.3000	46.3000	47.3000	48.3000
9.8000	45.1000	46.1000	47.1000	48.1000	49.1000	50.1000	51.1000	52.1000	53.1000	54.0000
9.9000	50.8000	51.9000	52.9000	53.9000	54.8000	55.8000	56.8000	57.8000	58.7000	59.7000
10.0000	56.6000	57.6000	58.5000	59.5000	60.5000	61.4000	62.3000	63.3000	64.2000	65.1000

Percent Un-ionized Ammonia in Aqueous Ammonia Solution

Temperature: Degrees Celcius

pH	10.5000	11.0000	11.5000	12.0000	12.5000	13.0000	13.5000	14.0000	14.5000	15.0000
6.0000	0.0194	0.0201	0.0209	0.0218	0.0226	0.0235	0.0244	0.0254	0.0264	0.0274
6.1000	0.0244	0.0254	0.0264	0.0274	0.0285	0.0296	0.0307	0.0319	0.0332	0.0345
6.2000	0.0307	0.0319	0.0332	0.0345	0.0358	0.0373	0.0387	0.0402	0.0418	0.0434
6.3000	0.0386	0.0402	0.0418	0.0434	0.0451	0.0469	0.0487	0.0506	0.0526	0.0546
6.4000	0.0487	0.0506	0.0526	0.0547	0.0568	0.0590	0.0613	0.0637	0.0662	0.0687
6.5000	0.0612	0.0637	0.0662	0.0688	0.0715	0.0743	0.0772	0.0802	0.0833	0.0865
6.6000	0.0771	0.0801	0.0833	0.0866	0.0900	0.0935	0.0972	0.1010	0.1050	0.1090
6.7000	0.0970	0.1010	0.1050	0.1090	0.1130	0.1180	0.1220	0.1270	0.1320	0.1370
6.8000	0.1220	0.1270	0.1320	0.1370	0.1430	0.1480	0.1540	0.1600	0.1660	0.1720
6.9000	0.1540	0.1600	0.1660	0.1730	0.1790	0.1860	0.1940	0.2010	0.2090	0.2170
7.0000	0.1930	0.2010	0.2090	0.2170	0.2260	0.2350	0.2440	0.2530	0.2630	0.2730
7.1000	0.2430	0.2530	0.2630	0.2730	0.2840	0.2950	0.3070	0.3190	0.3310	0.3440
7.2000	0.3060	0.3180	0.3310	0.3440	0.3570	0.3710	0.3860	0.4010	0.4160	0.4320
7.3000	0.3850	0.4000	0.4160	0.4330	0.4490	0.4670	0.4850	0.5040	0.5230	0.5430
7.4000	0.4840	0.5040	0.5230	0.5440	0.5650	0.5870	0.6100	0.6330	0.6580	0.6830
7.5000	0.6090	0.6330	0.6580	0.6840	0.7100	0.7380	0.7670	0.7960	0.8270	0.8590
7.6000	0.7660	0.7960	0.8270	0.8590	0.8930	0.9270	0.9630	1.0000	1.0400	1.0800
7.7000	0.9620	1.0000	1.0400	1.0800	1.1200	1.1600	1.2100	1.2600	1.3000	1.3500
7.8000	1.2100	1.2600	1.3000	1.3600	1.4100	1.4600	1.5200	1.5800	1.6400	1.7000
7.9000	1.5200	1.5800	1.6400	1.7000	1.7700	1.8300	1.9000	1.9800	2.0500	2.1300
8.0000	1.9000	1.9700	2.0500	2.1300	2.2100	2.3000	2.3800	2.4800	2.5700	2.6700
8.1000	2.3800	2.4700	2.5700	2.6700	2.7700	2.8700	2.9800	3.1000	3.2100	3.3300
8.2000	2.9800	3.0900	3.2100	3.3400	3.4600	3.5900	3.7300	3.8700	4.0100	4.1600
8.3000	3.7200	3.8600	4.0100	4.1600	4.3200	4.4800	4.6500	4.8200	5.0000	5.1800
8.4000	4.6400	4.8200	5.0000	5.1900	5.3800	5.5800	5.7800	5.9900	6.2100	6.4400
8.5000	5.7700	5.9900	6.2100	6.4400	6.6800	6.9200	7.1700	7.4300	7.7000	7.9700
8.6000	7.1600	7.4200	7.7000	7.9800	8.2600	8.5600	8.8600	9.1800	9.5000	9.8300
8.7000	8.8500	9.1700	9.5000	9.8400	10.2000	10.5000	10.9000	11.3000	11.7000	12.1000
8.8000	10.9000	11.3000	11.7000	12.1000	12.5000	12.9000	13.4000	13.8000	14.3000	14.7000
8.9000	13.3000	13.8000	14.3000	14.7000	15.2000	15.7000	16.3000	16.8000	17.3000	17.9000
9.0000	16.2000	16.8000	17.3000	17.9000	18.5000	19.0000	19.6000	20.2000	20.9000	21.5000
9.1000	19.6000	20.2000	20.9000	21.5000	22.2000	22.8000	23.5000	24.2000	24.9000	25.6000
9.2000	23.5000	24.2000	24.9000	25.7000	26.4000	27.1000	27.9000	28.7000	29.5000	30.3000
9.3000	27.9000	28.7000	29.5000	30.3000	31.1000	31.9000	32.8000	33.6000	34.5000	35.3000
9.4000	32.7000	33.6000	34.5000	35.4000	36.2000	37.1000	38.0000	38.9000	39.8000	40.8000
9.5000	38.0000	38.9000	39.8000	40.8000	41.7000	42.6000	43.6000	44.5000	45.5000	46.4000
9.6000	43.5000	44.5000	45.5000	46.4000	47.4000	48.3000	49.3000	50.3000	51.2000	52.2000
9.7000	49.3000	50.2000	51.2000	52.2000	53.1000	54.1000	55.0000	56.0000	56.9000	57.8000
9.8000	55.0000	56.0000	56.9000	57.9000	58.8000	59.7000	60.7000	61.6000	62.5000	63.3000
9.9000	60.6000	61.5000	62.5000	63.4000	64.3000	65.1000	66.0000	66.8000	67.7000	68.5000
10.0000	66.0000	66.8000	67.7000	68.5000	69.3000	70.2000	71.0000	71.7000	72.5000	73.3000

Percent Un-ionized Ammonia in Aqueous Ammonia Solution

Temperature: Degrees Celcius

pH	15.5000	16.0000	16.5000	17.0000	17.5000	18.0000	18.5000	19.0000	19.5000	20.0000
6.0000	0.0284	0.0295	0.0306	0.0318	0.0330	0.0343	0.0356	0.0369	0.0383	0.0397
6.1000	0.0358	0.0372	0.0386	0.0401	0.0416	0.0431	0.0448	0.0465	0.0482	0.0500
6.2000	0.0451	0.0468	0.0486	0.0504	0.0523	0.0543	0.0564	0.0585	0.0607	0.0629
6.3000	0.0567	0.0589	0.0611	0.0635	0.0659	0.0684	0.0709	0.0736	0.0763	0.0792
6.4000	0.0714	0.0741	0.0769	0.0799	0.0829	0.0860	0.0893	0.0926	0.0961	0.0997
6.5000	0.0898	0.0933	0.0968	0.1010	0.1040	0.1080	0.1120	0.1170	0.1210	0.1250
6.6000	0.1130	0.1170	0.1220	0.1270	0.1310	0.1360	0.1410	0.1470	0.1520	0.1580
6.7000	0.1420	0.1480	0.1530	0.1590	0.1650	0.1720	0.1780	0.1850	0.1920	0.1990
6.8000	0.1790	0.1860	0.1930	0.2000	0.2080	0.2160	0.2240	0.2320	0.2410	0.2500
6.9000	0.2250	0.2340	0.2430	0.2520	0.2620	0.2720	0.2820	0.2920	0.3030	0.3150
7.0000	0.2840	0.2940	0.3060	0.3170	0.3290	0.3420	0.3550	0.3680	0.3810	0.3960
7.1000	0.3570	0.3700	0.3840	0.3990	0.4140	0.4300	0.4460	0.4630	0.4800	0.4980
7.2000	0.4490	0.4660	0.4830	0.5020	0.5210	0.5400	0.5610	0.5820	0.6030	0.6260
7.3000	0.5640	0.5860	0.6080	0.6310	0.6550	0.6790	0.7050	0.7310	0.7580	0.7860
7.4000	0.7090	0.7360	0.7640	0.7930	0.8230	0.8540	0.8860	0.9190	0.9530	0.9880
7.5000	0.8910	0.9250	0.9600	0.9660	1.0300	1.0700	1.1100	1.1500	1.2000	1.2400
7.6000	1.1200	1.1600	1.2100	1.2500	1.3000	1.3500	1.4000	1.4500	1.5000	1.5600
7.7000	1.4100	1.4600	1.5100	1.5700	1.6300	1.6900	1.7500	1.8200	1.8800	1.9500
7.8000	1.7600	1.8300	1.9000	1.9700	2.0400	2.1200	2.2000	2.2800	2.3600	2.4400
7.9000	2.2100	2.2900	2.3800	2.4700	2.5600	2.6500	2.7500	2.8500	2.9500	3.0600
8.0000	2.7700	2.8700	2.9700	3.0800	3.2000	3.3100	3.4400	3.5600	3.6900	3.8200
8.1000	3.4600	3.5800	3.7200	3.8500	3.9900	4.1400	4.2900	4.4400	4.6000	4.7600
8.2000	4.3100	4.4700	4.6300	4.8000	4.9800	5.1500	5.3400	5.5300	5.7200	5.9200
8.3000	5.3700	5.5600	5.7600	5.9700	6.1800	6.4000	6.6300	6.8600	7.1000	7.3400
8.4000	6.6700	6.9100	7.1500	7.4000	7.6600	7.9300	8.2000	8.4900	8.7700	9.0700
8.5000	8.2500	8.5400	8.8400	9.1400	9.4600	9.7800	10.1000	10.5000	10.8000	11.2000
8.6000	10.2000	10.5000	10.9000	11.2000	11.6000	12.0000	12.4000	12.8000	13.2000	13.7000
8.7000	12.5000	12.9000	13.3000	13.8000	14.2000	14.7000	15.1000	15.6000	16.1000	16.6000
8.8000	15.2000	15.7000	16.2000	16.7000	17.2000	17.8000	18.3000	18.9000	19.5000	20.0000
8.9000	18.4000	19.0000	19.6000	20.2000	20.8000	21.4000	22.0000	22.7000	23.3000	24.0000
9.0000	22.1000	22.8000	23.5000	24.1000	24.8000	25.5000	26.2000	27.0000	27.7000	28.4000
9.1000	26.4000	27.1000	27.8000	28.6000	29.4000	30.1000	30.9000	31.7000	32.5000	33.3000
9.2000	31.1000	31.9000	32.7000	33.5000	34.4000	35.2000	36.1000	36.9000	37.8000	38.6000
9.3000	36.2000	37.1000	38.0000	38.8000	39.7000	40.6000	41.5000	42.4000	43.3000	44.2000
9.4000	41.7000	42.6000	43.5000	44.4000	45.4000	46.3000	47.2000	48.1000	49.0000	49.9000
9.5000	47.3000	48.3000	49.2000	50.2000	51.1000	52.0000	52.9000	53.9000	54.8000	55.7000
9.6000	53.1000	54.0000	55.0000	55.9000	56.8000	57.7000	58.6000	59.5000	60.4000	61.3000
9.7000	58.8000	59.7000	60.6000	61.5000	62.3000	63.2000	64.1000	64.9000	65.7000	66.6000
9.8000	64.2000	65.1000	65.9000	66.8000	67.6000	68.4000	69.2000	70.0000	70.7000	71.5000
9.9000	69.3000	70.1000	70.9000	71.7000	72.4000	73.1000	73.9000	74.6000	75.3000	75.9000
10.0000	74.0000	74.7000	75.4000	76.1000	76.8000	77.4000	78.1000	78.7000	79.3000	79.9000

Percent Un-ionized Ammonia in Aqueous Ammonia Solution

Temperature: Degrees Celcius

pH	20.5000	21.0000	21.5000	22.0000	22.5000	23.0000	23.5000	24.0000	24.5000	25.0000
6.0000	0.0412	0.0427	0.0443	0.0459	0.0476	0.0493	0.0511	0.0530	0.0549	0.0569
6.1000	0.0518	0.0538	0.0557	0.0578	0.0599	0.0621	0.0644	0.0667	0.0691	0.0716
6.2000	0.0653	0.0677	0.0702	0.0727	0.0754	0.0782	0.0810	0.0839	0.0870	0.0901
6.3000	0.0821	0.0852	0.0883	0.0916	0.0949	0.0984	0.1020	0.1060	0.1090	0.1130
6.4000	0.1030	0.1070	0.1110	0.1150	0.1190	0.1240	0.1280	0.1330	0.1380	0.1430
6.5000	0.1300	0.1350	0.1400	0.1450	0.1500	0.1560	0.1620	0.1670	0.1730	0.1800
6.6000	0.1640	0.1700	0.1760	0.1830	0.1890	0.1960	0.2030	0.2110	0.2180	0.2260
6.7000	0.2060	0.2140	0.2220	0.2300	0.2380	0.2470	0.2560	0.2650	0.2750	0.2840
6.8000	0.2590	0.2690	0.2790	0.2890	0.3000	0.3100	0.3220	0.3330	0.3450	0.3580
6.9000	0.3260	0.3380	0.3510	0.3640	0.3770	0.3900	0.4050	0.4190	0.4340	0.4500
7.0000	0.4100	0.4250	0.4410	0.4570	0.4740	0.4910	0.5090	0.5270	0.5460	0.5660
7.1000	0.5160	0.5350	0.5550	0.5750	0.5960	0.6170	0.6400	0.6630	0.6870	0.7110
7.2000	0.6490	0.6730	0.6970	0.7230	0.7490	0.7760	0.8040	0.8330	0.8630	0.8940
7.3000	0.8150	0.8450	0.8760	0.9080	0.9410	0.9750	1.0100	1.0500	1.0800	1.1200
7.4000	1.0200	1.0600	1.1000	1.1400	1.1800	1.2200	1.2700	1.3100	1.3600	1.4100
7.5000	1.2900	1.3300	1.3800	1.4300	1.4800	1.5400	1.5900	1.6500	1.7100	1.7700
7.6000	1.6100	1.6700	1.7300	1.8000	1.8600	1.9300	2.0000	2.0700	2.1400	2.2200
7.7000	2.0200	2.1000	2.1700	2.2500	2.3300	2.4100	2.5000	2.5900	2.6800	2.7700
7.8000	2.5300	2.6300	2.7200	2.8200	2.9200	3.0200	3.1300	3.2400	3.3500	3.4700
7.9000	3.1700	3.2800	3.4000	3.5200	3.6400	3.7700	3.9000	4.0400	4.1800	4.3300
8.0000	3.9600	4.1000	4.2400	4.3900	4.5500	4.7000	4.8700	5.0300	5.2100	5.3800
8.1000	4.9300	5.1000	5.2800	5.4700	5.6600	5.8500	6.0500	6.2600	6.4700	6.6900
8.2000	6.1300	6.3400	6.5600	6.7900	7.0200	7.2500	7.5000	7.7500	8.0100	8.2700
8.3000	7.6000	7.8600	8.1200	8.3900	8.6800	8.9600	9.2600	9.5600	9.8800	10.2000
8.4000	9.3800	9.6900	10.0000	10.3000	10.7000	11.0000	11.4000	11.7000	12.1000	12.5000
8.5000	11.5000	11.9000	12.3000	12.7000	13.1000	13.5000	13.9000	14.4000	14.8000	15.3000
8.6000	14.1000	14.5000	15.0000	15.5000	15.9000	16.4000	16.9000	17.4000	17.9000	18.5000
8.7000	17.1000	17.6000	18.2000	18.7000	19.3000	19.8000	20.4000	21.0000	21.6000	22.2000
8.8000	20.6000	21.2000	21.8000	22.5000	23.1000	23.7000	24.4000	25.1000	25.7000	26.4000
8.9000	24.7000	25.3000	26.0000	26.7000	27.4000	28.2000	28.9000	29.6000	30.4000	31.1000
9.0000	29.2000	29.9000	30.7000	31.5000	32.3000	33.0000	33.8000	34.6000	35.5000	36.3000
9.1000	34.2000	35.0000	35.8000	36.6000	37.5000	38.3000	39.2000	40.0000	40.9000	41.7000
9.2000	39.5000	40.4000	41.2000	42.1000	43.0000	43.9000	44.8000	45.7000	46.5000	47.4000
9.3000	45.1000	46.0000	46.9000	47.8000	48.7000	49.6000	50.5000	51.4000	52.3000	53.2000
9.4000	50.9000	51.8000	52.7000	53.6000	54.5000	55.4000	56.2000	57.1000	58.0000	58.8000
9.5000	56.6000	57.5000	58.3000	59.2000	60.1000	60.9000	61.8000	62.6000	63.5000	64.3000
9.6000	62.1000	63.0000	63.8000	64.6000	65.5000	66.3000	67.1000	67.8000	68.6000	69.4000
9.7000	67.4000	68.2000	68.9000	69.7000	70.5000	71.2000	71.9000	72.7000	73.4000	74.0000
9.8000	72.2000	72.9000	73.7000	74.3000	75.0000	75.7000	76.3000	77.0000	77.6000	78.2000
9.9000	76.6000	77.2000	77.9000	78.4000	79.1000	79.7000	80.3000	80.8000	81.4000	81.9000
10.0000	80.5000	81.0000	81.6000	82.1000	82.6000	83.2000	83.6000	84.1000	84.6000	85.1000

Percent Un-ionized Ammonia in Aqueous Ammonia Solution

Temperature: Degrees Celcius

pH	25.5000	26.0000	26.5000	27.0000	27.5000	28.0000	28.5000	29.0000	29.5000	30.0000
6.0000	0.0589	0.0610	0.0632	0.0654	0.0678	0.0701	0.0726	0.0752	0.0778	0.0805
6.1000	0.0742	0.0768	0.0796	0.0824	0.0853	0.0883	0.0914	0.0946	0.0979	0.1010
6.2000	0.0933	0.0967	0.1000	0.1040	0.1070	0.1110	0.1150	0.1190	0.1230	0.1280
6.3000	0.1170	0.1220	0.1260	0.1300	0.1350	0.1400	0.1450	0.1500	0.1550	0.1600
6.4000	0.1480	0.1530	0.1590	0.1640	0.1700	0.1760	0.1820	0.1890	0.1950	0.2020
6.5000	0.1860	0.1930	0.2000	0.2070	0.2140	0.2210	0.2290	0.2370	0.2460	0.2540
6.6000	0.2340	0.2420	0.2510	0.2600	0.2690	0.2790	0.2890	0.2990	0.3090	0.3200
6.7000	0.2950	0.3050	0.3160	0.3270	0.3390	0.3510	0.3630	0.3760	0.3890	0.4020
6.8000	0.3710	0.3840	0.3970	0.4110	0.4260	0.4410	0.4560	0.4720	0.4890	0.5060
6.9000	0.4660	0.4830	0.5000	0.5170	0.5360	0.5540	0.5740	0.5940	0.6150	0.6360
7.0000	0.5860	0.6070	0.6280	0.6510	0.6740	0.6970	0.7220	0.7470	0.7720	0.7990
7.1000	0.7370	0.7630	0.7900	0.8180	0.8460	0.8760	0.9070	0.9380	0.9700	1.0000
7.2000	0.9260	0.9580	0.9920	1.0300	1.0600	1.1000	1.1400	1.1800	1.2200	1.2600
7.3000	1.1600	1.2000	1.2500	1.2900	1.3300	1.3800	1.4300	1.4800	1.5300	1.5800
7.4000	1.4600	1.5100	1.5600	1.6200	1.6700	1.7300	1.7900	1.8500	1.9200	1.9800
7.5000	1.8300	1.8900	1.9600	2.0300	2.1000	2.1700	2.2500	2.3200	2.4000	2.4800
7.6000	2.2900	2.3700	2.4600	2.5400	2.6300	2.7200	2.8100	2.9100	3.0100	3.1100
7.7000	2.8700	2.9700	3.0700	3.1800	3.2900	3.4000	3.5100	3.6300	3.7500	3.8800
7.8000	3.5900	3.7100	3.8400	3.9700	4.1000	4.2400	4.3800	4.5300	4.6800	4.8400
7.9000	4.4700	4.6300	4.7800	4.9400	5.1100	5.2800	5.4600	5.6400	5.8200	6.0100
8.0000	5.5700	5.7500	5.9500	6.1500	6.3500	6.5600	6.7800	7.0000	7.2200	7.4000
8.1000	6.9100	7.1400	7.3700	7.6200	7.8700	8.1200	8.3800	8.6500	8.9200	9.2100
8.2000	8.5400	8.8200	9.1100	9.4000	9.7000	10.0000	10.3000	10.7000	11.0000	11.3000
8.3000	10.5000	10.9000	11.2000	11.6000	11.9000	12.3000	12.7000	13.0000	13.4000	13.8000
8.4000	12.9000	13.3000	13.7000	14.1000	14.6000	15.0000	15.4000	15.9000	16.4000	16.8000
8.5000	15.7000	16.2000	16.7000	17.2000	17.7000	18.2000	18.7000	19.2000	19.8000	20.3000
8.6000	19.0000	19.6000	20.1000	20.7000	21.3000	21.8000	22.4000	23.0000	23.7000	24.3000
8.7000	22.8000	23.4000	24.1000	24.7000	25.4000	26.0000	26.7000	27.4000	28.1000	28.8000
8.8000	27.1000	27.8000	28.5000	29.2000	30.0000	30.7000	31.4000	32.2000	32.9000	33.7000
8.9000	31.9000	32.7000	33.4000	34.2000	35.0000	35.8000	36.6000	37.4000	38.2000	39.0000
9.0000	37.1000	37.9000	38.7000	39.6000	40.4000	41.2000	42.1000	42.9000	43.8000	44.6000
9.1000	42.6000	43.5000	44.3000	45.2000	46.1000	46.9000	47.8000	48.6000	49.5000	50.4000
9.2000	48.3000	49.2000	50.1000	50.9000	51.8000	52.7000	53.5000	54.4000	55.2000	56.1000
9.3000	54.0000	54.9000	55.8000	56.6000	57.5000	58.3000	59.2000	60.0000	60.8000	61.6000
9.4000	59.7000	60.5000	61.4000	62.2000	63.0000	63.8000	64.6000	65.4000	66.2000	66.9000
9.5000	65.1000	65.9000	66.7000	67.4000	68.2000	68.9000	69.7000	70.4000	71.1000	71.8000
9.6000	70.1000	70.8000	71.6000	72.3000	73.0000	73.6000	74.3000	75.0000	75.6000	76.2000
9.7000	74.7000	75.4000	76.0000	76.6000	77.3000	77.9000	78.5000	79.0000	79.6000	80.1000
9.8000	78.8000	79.4000	80.0000	80.5000	81.1000	81.6000	82.1000	82.6000	83.1000	83.6000
9.9000	82.4000	82.9000	83.4000	83.9000	84.3000	84.8000	85.2000	85.7000	86.1000	86.5000
10.0000	85.5000	85.9000	86.3000	86.8000	87.1000	87.5000	87.9000	88.3000	88.6000	89.0000

Table 50-9.a. Water Quality of the Offsite Discharge from the Reclaimed Lake (mg/L)

Parameter	Cooling Reservoir Blowdown Quality (Outfall 001)	Ambient Water*	Class III Surface Water Standard
Flow (cfs)	4.80	2.77	
Nitrogen-ammonia	0.0	0.18	
Nitrogen-nitrate	1.67	0.44	
Nitrogen-nitrite	0.0	0.120	
Nitrogen-total organic	0.0	2.19	
Nitrogen-total nitrogen	1.67	2.93	
Phosphorus	1.550	2.50	
DO	5.38	10.3	>5
BOD_5	0.7	11.5	
Alkalinity	166.3	57.5	>20.0
Aluminum	0.033		<1.500
Ammonia (unionized)	0.0	0.050	<0.02
Antimony	0.007	0.000	<4.300
Arsenic	0.001	0.000	<0.050
Barium	0.165	0.000	
Benzene	0.000	0.000	<0.071
Beryllium	0.000089	0.000	<0.00013
Cadmium	0.000173	0.0000	<0.00117
Calcium	70.37	22.5	
Chloride	31	15.0	
Chlorine	0.0007		<0.010
Chromium, total	0.00003	0.00000	
Chromium, VI	0.00	0.0	<0.011
Chromium, III	0.00003		<0.214
Color (pt-co)	52.5	79.5	
Copper	0.002	0.000	<0.012
Cyanide	0.000003	0.000000	<0.0052
Fecal coliform	0.3		<200
Fluoride	0.82	1.78	<10.00
Gross alpha	1.94	1.95	<15
Iron	0.634	0.000	<1.000
Lead	0.001096	0.004000	<0.00334
Magnesium	24.20	12.9	
Manganese	0.004	0.000	
Mercury	0.000007	0.000000	<0.000012
Nickel	0.010	0.000	<0.163
Oil and grease	0.56	0.00	<5

Table 50-9.a. Water Quality of the Offsite Discharge from the Reclaimed Lake (mg/L) (Continued, Page 2 of 2)

Parameter	Cooling Reservoir Blowdown Quality (Outfall 001)	Ambient Water*	Class III Surface Water Standard
Potassium	7.76		
Radium 226	2.45	1.05	< 5
Radium 228	0.09	0.50	< 5
Selenium	0.000041	0.000000	< 0.005
Silver	0.000000	0.00004	< 0.000070
Sodium	33.28	22.5	
Sulfate	114.10	48.1	
Sulfide	0.87		
Surfactants	0.199	0.025	< 0.500
TDS	447.4	214.0	< 826.0
TOC	34.2		
TSS	11	15.6	
Zinc	0.027	0.000	< 0.110

*Average concentrations measured at SW-6 and SW-7.

Source: ECT, 1993.

FACT SHEET
APPLICATION FOR
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
PERMIT TO DISCHARGE WASTEWATER
TO WATERS OF THE U.S.

NPDES No.: FL0043869 Appl. Date: July 30, 1992
Permit Writer: Karrie-Jo Shell Public Notice Date:

1. SYNOPSIS OF APPLICATION

a. Name and Address of Applicant

Tampa Electric Company (TECO)
P.O. Box 111
Tampa, FL 33602-00111

for

Polk Power Station Project
State Road 37
Polk County, FL 33835

b. Type of Facility

Generation, transmission, and distribution of electricity, generally falling under the Standard Industrial Classification Code of 4911. Plant fuels will be natural gas, derived gas coal and No. 2 oil.

c. Design Capacity of Facility

Upon completion, the total generating capacity of the units would be approximately 1,150 MW. The generating units would be developed according to a phased schedule.

The initial phase would be the construction of a nominal net 260-MW Integrated Coal Gasification Combined Cycle (IGCC) unit centered on a nominal net 150-MW advanced combustion turbine unit. This unit would burn coal-derived gas and would have the capability to burn low sulfur No. 2 fuel as a backup fuel.

Phase II would consist of construction of the two nominal net 220-MW combined cycle units and one nominal 75-MW combustion turbine unit. These units would also burn natural gas as the primary fuel or low sulfur No. 2 fuel oil as the backup.

Phase III would consist of construction of five more nominal net 75-MW combined cycle units. These units would also burn natural gas as the primary fuel or low sulfur No. 2 fuel oil as the backup fuel.

d. Applicant's Receiving Water

Outfall	Lat.	Long.	Name
001	27°43'41"	81°58'22"	Unnamed reclaimed lake to unnamed canal to Little Payne Creek
002	27°44'01"	81°59'13"	Unnamed old mine cut to unnamed canal to Little Payne Creek

The receiving streams are classified as Class III waters suitable for recreation, propagation and maintenance of a healthy, well-balanced population of fish and wildlife. Little Payne Creek is freshwater.

(For a sketch of the location of the discharges, see Attachment A.)

e. Description of Wastewater Treatment Facilities

The facility will use a closed loop cooling system (cooling reservoir) for heat dissipation. The cooling reservoir will receive treated effluent from an on-site Industrial Wastewater Treatment plant, treated effluent from an on-site Sanitary Wastewater Treatment Plant, groundwater seepage, treated low-volume wastes (reject water from the Reverse Osmosis Unit, treated boiler blowdown & lab wastes), treated wastewater from on-site oil/water separators, groundwater from the Floridan aquifer (make-up) and recirculated cooling water.

The Industrial Waste Treatment (IWT) will treat the process and service wastewater, and storm water runoff and washdown from the materials storage areas. The proposed Industrial Wastewater Treatment will include the following basins and units: oil/water separation; neutralization tank; diversion boxes; slag runoff retention basin; oxidation tank; clarification; and filtration.

All oil-bearing equipment will be segregated using curbed areas with drains directing washdown, runoff, minor leaks, and spills to the oil/water separation system.

Low volume wastes (boiler blowdown, laboratory wastes, and RO concentrate) will be combined in a neutralization tank for pH adjustment.

Filter backwash water from the makeup water treatment would be directed to the equalization basin, and subsequently filtered.

The **metal cleaning wastes** *associated with the combustion turbine and compressor washing* will be routed to the equalization basin for subsequent filtration treatment. Spent chemicals and metal cleaning wastes not associated with wash operations will be disposed off site by a licensed contractor.

Storm water runoff from the coal delivery, handling, and storage areas will be directed to the coal grinding area for use in the

coal grinding/slurry system.

f. Description of Discharges (as reported by applicant)

Outfall 001 - Cooling Reservoir Discharge

Average Daily Flow, MGD	- 3.1
Average Daily pH , SU	- 6.6
Average Daily Temp. (Winter), °F	- 65
Average Daily Temp. (Summer), °F	- 87

Pollutants that are present in significant quantities, or which are subject to effluent limitations are as follows:

Parameter	Reported Daily Average Concentration, mg/L
Total Suspended Solids	11
Ammonia Nitrogen	0.01
Total Antimony	0.007
Total Arsenic	0.001
Total Beryllium	0.0001
Total Cadmium	0.0002
Total Residual Chlorine	0.0007
Total Copper	0.002
Total Iron	0.6
Total Lead	0.001
Total Nickel	0.01
Oil and Grease	0.6
Radioactivity, Radium 226	2.5 pCi/L
Total Selenium	0.00004

Parameter	Reported Daily Average Concentration, mg/L
Sulfates	114.1
Total Zinc	0.03

Outfall 002 - Storm Water Associated with Industrial Activity
No data provided.

2. PROPOSED EFFLUENT LIMITATIONS

Outfall 001

EFFLUENT PARAMETERS	DISCHARGE LIMITATIONS Daily Maximum	Daily Average
Flow, MGD	Report	Report
POD Temp., °F		
Summer (May-Oct)	Report	92.0
Winter (Nov-Apr)	Report	88.7
Total Ammonia (as N), mg/l	Report	---

Outfall 001 (continued)

EFFLUENT PARAMETERS	DISCHARGE LIMITATIONS	
	Daily Maximum	Daily Average
Temp, °C	Report Also see item 7, below.	---
Total Phosphorus, mg/l	Report	Report
Un-ionized Ammonia, mg/l	0.02 Also see item 7, below.	Report
Dissolved Oxygen, mg/l	See item 6, below.	
Oil & Grease, mg/l	5.0	---
Total Nitrogen, mg/l	Report Also see item 5, below.	Report
Total Kjeldahl Nitrogen, mg/l	Report	Report
Total Sulfate, mg/l	Report	Report
Total Dissolved Solids, mg/l	Report	Report
Total Suspended Solids, mg/l	150.0	50.0
Total Residual Chlorine, mg/l	0.01	Report
Total Recoverable Antimony, mg/l	4.30	Report
Total Recoverable Arsenic, mg/l	0.05	Report
Total Recoverable Beryllium, µg/l	0.13	Report
Total Recoverable Cadmium, µg/l	1.2	Report
Total Recoverable Copper, µ/l	12.2	Report
Total Recoverable Iron, mg/l	1.0	Report
Total Recoverable Lead, µg/l	3.34	Report
Total Recoverable Nickel, µg/l	163	Report
Total Recoverable Selenium, µg/l	5.0	Report
Total Recoverable Silver µg/l	0.07	Report
Total Recoverable Thallium, µg/l	48	Report
Total Recoverable Zinc, µg/l	110	Report
Specific Conductance, µmhos/cm	1275	Report
Gross Alpha Particle Activity (including radium 226, but excluding radon and uranium), pCi/L	15	Report
Carbonaceous Biochemical Oxygen Demand (5-day), mg/l	3.0	1.0
Total Hardness (as $CaCO_3$), mg/l	Report	Report
Acute Whole Effluent Toxicity	$LC_{20} \geq 100\%$	

2. The pH shall not be less than 6.0 nor greater than 8.5 standard units.

3. There shall be no discharge of floating solids or visible foam in other than trace amounts, nor shall the effluent cause a visible sheen on the receiving waterbody (i.e., lake).

4. Samples taken in compliance with the monitoring requirements specified above shall be taken at the nearest accessible point after final treatment, but prior to mixing with the receiving waterbody.

5. The effluent concentrations for Total Nitrogen and Total Ammonia shall not exceed background levels at any time.

6. The daily minimum concentration for dissolved oxygen (DO) shall not be less than 5.0 mg/l. The time and depth for sampling DO shall be specified and recorded. DO monitoring shall occur after dawn and before 10 am, whenever possible.

7. Effluent samples for pH and temperature (grab) shall be taken simultaneously with each total ammonia grab sample. Un-ionized ammonia shall be calculated in accordance with Table I (attached). All measured values for pH, temperature, and total ammonia used to calculate an un-ionized ammonia value shall be reported as an attachment to the Discharge Monitoring Report (DMR) Form (EPA No. 3320-1). All calculated un-ionized ammonia values shall also be reported on the attachment. The daily maximum value for un-ionized ammonia for each reporting period shall be reported on the DMR.

8. The permittee shall conduct acute whole effluent toxicity (WET) monitoring as specified in Part IV to determine if reasonable potential to exceed Florida Administrative Code (FAC) §17-302.500(d) (April 25, 1993) exists. EPA will review the monitoring results and may modify this permit to include an acute WET limit if the results of any test (screening or definitive) indicate that there is reasonable potential to exceed FAC §17-302.500(d), consistent with the requirements of 40 CFR §122.44(d)(1)(iv).

9. The temperature at the edge of the thermal mixing zone shall not exceed the limitations of Rule 17-302.520(4)(a), Florida Administrative Code (FAC). The mixing zone shall be a 250 foot radius semicircle centered at the point of entry into the unnamed reclaimed lake. If the temperature at the point of discharge exceeds the applicable limitation on page I-1, the permittee shall take two additional grab samples one at the edge of the mixing zone and one at the northeastern corner of the unnamed reclaimed lake (to determine ambient temperature) within the same 24-hour period. Any difference in the value of the sample take at the edge of the mixing zone above the value of the sample take at the edge of the mixing zone shall be considered a violation of the permit.

Outfall 002

EFFLUENT PARAMETERS	DISCHARGE LIMITATIONS	
	Daily Maximum	Daily Average
Flow, MGD	Report	Report

Carbonaceous Biochemical Oxygen Demand (5-day),mg/l	Report	12.0
Total Suspended Solids, mg/l	50.0	Report
Oil & Grease, mg/l	5.0	Report
pH, Standard Units	See item 2, below.	

2. The pH shall not be less than 6.0 nor greater than 8.5 standard units.

3. There shall be no discharge of floating solids or visible foam in other than trace amounts, nor shall the effluent cause a visible sheen on the receiving waterbody (i.e., discharge canal).

4. Samples taken in compliance with the monitoring requirements specified above shall be taken at the nearest accessible point after final treatment, but prior to mixing with the receiving waterbody.

During plant operation, necessary measures shall be used to settle, filter, treat or absorb silt-containing or pollutant-laden storm water runoff to limit the suspended solids to 50.0 mg/l or less at Outfalls 001 and 002 during rainfall periods less than the 10-year, 24-hour rainfall event. Control measures shall consist at the minimum of filters, sediment traps, barriers, berms or vegetative planting. Exposed or disturbed soil shall be protected as soon as possible to minimize silt and sediment-laden runoff.

Outfall 003

EFFLUENT PARAMETERS	DISCHARGE LIMITATIONS	
	Daily Maximum	Daily Average
Flow, MGD	Report	Report
Total Suspended Solids, mg/l	100.0	30.0
Oil & Grease, mg/l	20.0	15.0
pH, Standard Units	See item 2, below.	

2. The pH shall not be less than 6.0 nor greater than 9.0 Standard Units.

3. Samples taken in compliance with the monitoring requirements specified above shall be taken at the nearest accessible point after final treatment, but prior to entering the Cooling Reservoir.

For all outfalls, if the results for a given sample analysis are such that any parameter is not detected at or above the minimum level for the test method used, a value of zero will be used for that sample in calculating an arithmetic mean value for the parameter. If the resulting calculated arithmetic mean value for that reporting period is zero, the permittee shall report "NODI=B" on the Discharge Monitoring Report (DMR) Form (EPA No. 3320-1). For each quantitative sample value that is not detectable, the test method used and the minimum level for that method for that permittee shall then be considered in compliance with the appropriate effluent limitation and/or reporting requirement.

3. BASIS FOR FINAL LIMITS AND PERMIT CONDITIONS

A. New Source Performance Standards for the Steam Electric Power Generating Point Source Category, 40 CFR Part 423.15 (November 19, 1982, 47 FR 52290).

Where necessary, limitations and monitoring requirements have been established for internal waste streams (e.g., wastes which combine with other contaminated wastes or cooling water prior to discharge) in accordance with 40 CFR Section 122.45(h). Unless otherwise noted, the reason for designated internal waste streams is that the required pollutant concentration limitations cannot be monitored after combination, due to dilution.

B. Florida Water Quality Standards: The receiving waters are classified as Class III surface waters suited for recreation, and the propagation and maintenance of a healthy, well-balanced population of fish and wildlife. Water quality standards for this classified water are found in Florida Administrative Code (FAC) Chapters 17-3 (dated May 29, 1990), 17-4 (dated July 11, 1993), and 17-302 (dated April 25, 1993).

C. Site Condition of Certification dated January 25, 1994.

OUTFALL 001

Flow & Total Hardness

Monitoring and reporting requirements are based on Best Professional Judgements (BPJ), and are consistent with Section 308(a) of the Clean Water Act (CWA).

POD Discharge Temperature, Total Suspended Solids, Acute Whole Effluent Toxicity & Carbonaceous Biochemical Oxygen Demand (5-day)

Limitations and monitoring requirements are based on the Site Certification.

Total Ammonia, Total Nitrogen, Total Kjeldahl Nitrogen & Total Sulfate

Monitoring only requirements are based on the Site Certification, and are consistent with Section 308(a) of the CWA.

Un-ionized Ammonia, pH, Oil & Grease & Total Residual Chlorine

Limitations based on Florida Water Quality Standards as follows and they are consistent with the Site Certification:

Pollutant	FAC
Un-ionized Ammonia	17-302.530(3)
pH	17-302.530(52)c
Oil & Grease	17-302.530(50)a
Total Residual Chlorine	17-302.530(19)

Total Recoverable Antimony, Total Recoverable Arsenic,Total Recoverable Beryllium, Total Recoverable Cadmium, Total Recoverable Copper, Total Recoverable Iron, Total Recoverable Lead, Total Recoverable Nickel, Total Recoverable Selenium, Total Recoverable Silver,Total Recoverable Thallium & Total Recoverable Zinc

Limitations are based on the Site Certification, and are consistent wilt the following Florida Water Quality Standards:

Pollutant	FAC
Total Recoverable Antimony	17-302.530(4)
Total Recoverable Arsenic	17-302.530(5)a
Total Recoverable Beryllium	17-302.530(10)
Total Recoverable Cadmium[1]	17-302.530(16)
Total Recoverable Copper[1]	17-302.530(24)
Total Recoverable Iron	17-302.530(39)
Total Recoverable Lead[1]	17-302.530(40)
Total Recoverable Nickel[1]	17-302.530(45)
Total Recoverable Selenium	17-302.530(59)
Total Recoverable Silver	17-302.530(60)
Total Recoverable Thallium	17-302.530(65)
Total Recoverable Zinc[1]	17-302.530(72)

[1] Based on a total hardness of 104 mg/l (reported by applicant).

Specific Conductance, Dissolved Oxygen & Gross Alpha Particle

Limitations are based on the Site Certification, and are consistent with the following Florida Water Quality Standards:

Pollutant	FAC
Specific Conductance	17-302.530(23)
Dissolved Oxygen	17-302.530(31)
Gross Alpha Particle	17-302.530(58)b

Floating Solids and Visible Foam

Based on BPJ, 40 CFR Section 122.44(d)(1)(i), and FAC Section 17-302.500(1)(b).

OUTFALL 002

Flow

Monitoring and reporting requirements are based on Best Professional Judgements (BPJ), and are consistent with Section 308(a) of the Clean Water Act (CWA).

Carbonaceous Biochemical Oxygen Demand (5-day), Total Suspended Solids

Limitations and monitoring requirements are based on the Site Certification.

Oil & Grease & pH

Limitations are based on the Site Certification, and are consistent with the following Florida Water Quality Standards:

Pollutant	FAC
pH	17-302.530(52)c
Oil & Grease	17-302.530(50)a

Floating Solids and Visible Foam

Based on BPJ, 40 CFR Section 122.44(d)(1)(i), and FAC Section 17-302.500(1)(b).

INTERNAL OUTFALL 003

Flow

Monitoring and reporting requirements are based on Best Professional Judgements (BPJ), and are consistent with Section 308(a) of the CWA.

Total Suspended Solids, Oil & Grease

Based on 40 CFR Section 423.15(c) for low volume wastes.

pH

Based on 40 CFR Section 423.15(a).

Part II conditions are standard reporting requirements for every NPDES permit; these are consistent with 40 CFR Part 122.

Part III conditions:

Condition A is a standard reporting requirement for a major industrial facility.

Condition B is included to ensure that the permit can be reopened if more stringent limitations are required. This is in accordance with 40 CFR Section 122.44(c).

Condition C is based on 40 CFR Section 423.15(b).

Conditions D and E are included in accordance with regional policy, and in order to prevent the discharge of a large group of potentially toxic compounds without the knowledge/evaluation of the permitting authority.

Condition F is included per 40 CFR Section 423.15(a).

Condition G is included to clarify testing methods and reporting requirements for total residual chlorine.

Conditions H, J, K, L, and M are included per best professional judgement of the permit writer, and are consistent with requirements in permits for similar facilities.

Condition I is included to clarify acceptable detectibility limits.

Condition N is included per best professional judgement of the permit writer, based on ambient levels of phosphorus and proposed concentrations of total phosphorus in the effluent. This condition is consistent with requirements in the draft Site Certification.

4. PROPOSED SPECIAL CONDITIONS WHICH WILL HAVE A SIGNIFICANT IMPACT ON THE DISCHARGE

The conditions of Part V (Best Management Practices/Pollution Prevention Plan) of this permit may have a significant impact on the discharges due to the areas of concern at power plants, including the potential for leaks and spills, the potential for storm water contamination, the potential for groundwater infiltration from storage areas, and the potential for surface water contamination from onsite solid waste disposal areas.

5. REQUESTED VARIANCES OR ALTERNATIVES TO REQUIRED STANDARDS

None.

6. EFFECTIVE DATE OF PROPOSED EFFLUENT LIMITS AND COMPLIANCE SCHEDULE

The permittee shall achieve compliance with the effluent limitations specified for discharges in accordance with the following schedule:

a. Achieve effluent limitations.. Effective Date of Permit

b. Submit Complete EPA Form 2C for Outfall 001..... No later than 2 years from commencement of discharge from Outfall 001

c. Submit Complete EPA Form 2C for Outfall 002..... No later than 2 years from commencement of discharge from Outfall 002

d. Submittal of the Biological Assessment Plan (Part III.N) .....No later than 1 year of commercial startup

No later than 14 calendar days following a date identified in the above schedule of compliance, the permittee shall submit either a report of progress, or in the case of specific actions being required by identified dates, a written notice of compliance or noncompliance. In the latter case, the notice shall include the cause of noncompliance, any remedial actions taken, and the probability of meeting the nest scheduled requirement.

7. STATE CERTIFICATION REQUIREMENTS

Pending.

8. EPA CONTACT

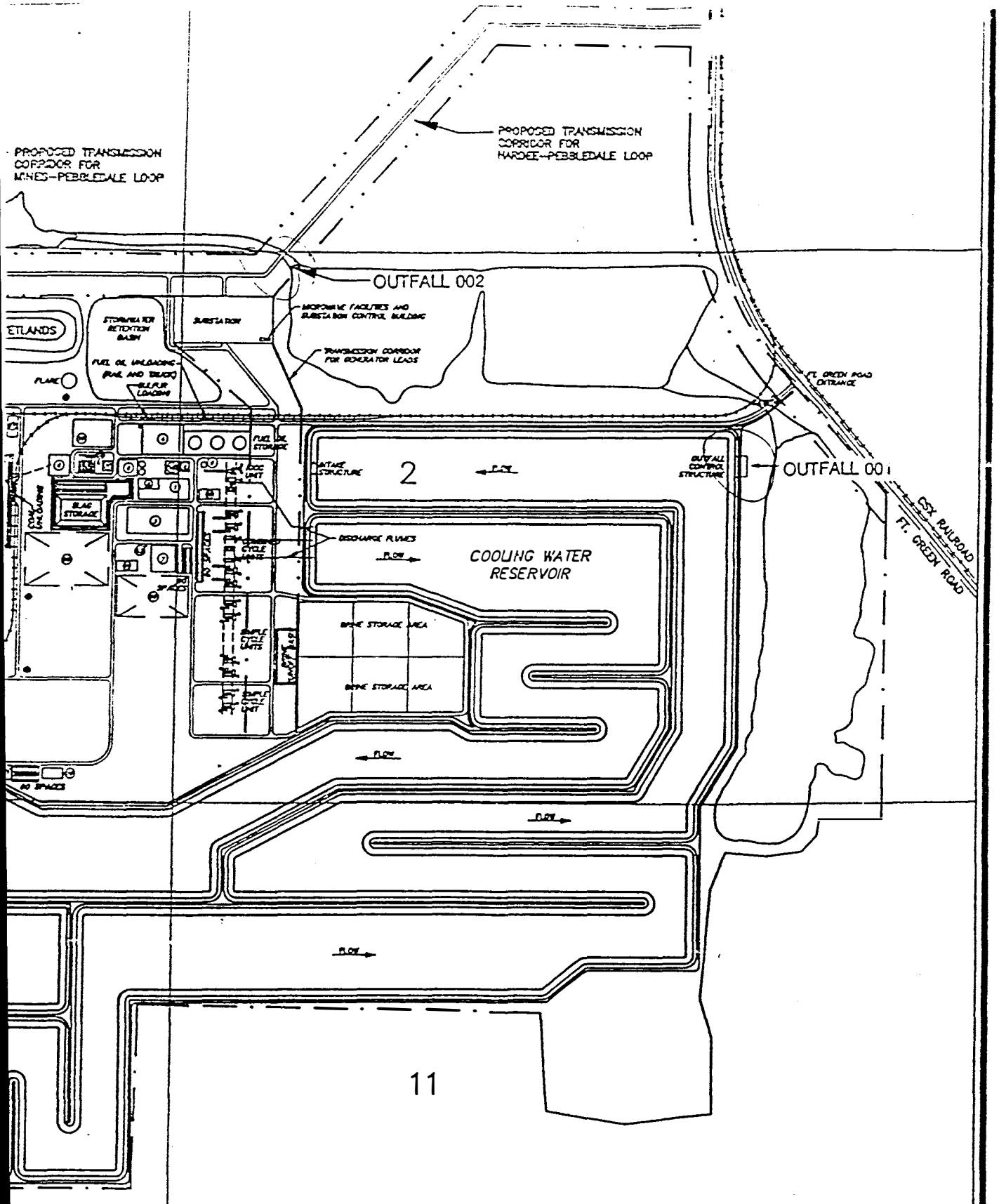
Additional information concerning the permit may be obtained at the following address and during the hours noted in item 10 from:

Ms. Lena Scott
Public Notice Coordinator
(404) 347-3004

10. THE ADMINISTRATIVE RECORD, including application, draft permit, fact sheet, public notice (after release), State certification (after receipt), comments received, and additional information is available by writing the EPA, Region IV, or for review and copying at 345 Courtland Street, N.E., Atlanta, Georgia 30365, between the hours of 8:15 A.M. and 4:30 P.M., Monday through Friday. Copies will be provided at a minimal charge per page.

11. PROPOSED SCHEDULE FOR PERMIT ISSUANCE

Draft Permit to Applicant	December 24, 1993
Draft to State for certification	February 10, 1994
Proposed Public Notice Date	March 3, 1994
Proposed Issuance Date	April 29, 1994
Proposed Effective Date	July 1, 1994



Attachment A

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

APPENDIX B

U.S. Environmental Protection Agency

- EPA - DOE Coordination Letters
- EPA NOI and Comment Letters
- EPA Agency Coordination Letters and Responses

EPA - DOE Coordination Letters

Department of Energy
Washington, DC 20585

February 3, 1993

Mr. Patrick M. Tobin
Acting Regional Administrator
Region IV
U.S. Environmental Protection Agency
345 Courtland Street, N.E.
Atlanta, Georgia 30365

Dear Mr. Tobin:

Confirming the consensus reached at recent meetings involving Department of Energy (DOE) and Environmental Protection Agency (EPA) staffs, this letter is to request that EPA serve as the Lead Agency in the preparation of an Environmental Impact Statement (EIS) for the power plant project proposed by Tampa Electric Company (TEC) for their site in the southwestern corner of Polk County, approximately 28 miles southeast of Tampa. The DOE Clean Coal Technology (CCT) Program has proposed to provide cost-shared funding support for the design, construction, and demonstration of an approximately 1900 tons-per-day, nominal 260 Megawatt-electric (MWe) Integrated Gasification Combined Cycle (IGCC) plant that would comprise Unit 1 of the site. To that end, DOE published a Federal Register Notice of Intent to Prepare an EIS on July 28, 1992, (57 FR 33331), and convened a public scoping meeting on August 12, 1992. At that time, DOE envisioned that the EIS would concentrate on Unit 1, with any additional capacity that might be planned for the site to be addressed within the context of cumulative impacts. However, TEC has since advised us that it intends to develop the entire site to provide 1150 MWe of generating capacity, and has submitted an application to your office for a permit pursuant to the National Pollutant Discharge Elimination System (NPDES) for this entire 1150 MWe project.

The purpose of DOE's proposed action is to demonstrate the IGCC technology that would be employed in the 260 MWe Unit 1. The project would develop cost, environmental, and technical data for use by the utility industry in evaluating this technology as a commercially viable power generation alternative. The additional site capacity now envisioned was not included as part of TEC's proposal for support by DOE's CCT Program, and would utilize conventional technologies that would not further the goals and objectives of the Program. On the other hand, EPA's proposed Federal action regarding the NPDES permit application pertains to the entire 1150 MWe project.

It should be noted that, if either DOE or TEC were to withdraw from the CCT demonstration agreement, EPA's requirement for the preparation of an EIS would remain effective by virtue of the applicant's NPDES permit application. However, DOE's interest in the EIS would cease in the absence of our proposed Federal action.

Accordingly, given the greater magnitude of your agency's involvement in the entire project over that of DOE, it would be appropriate for EPA to assume the Lead Agency role for the preparation of the EIS for the proposed 1150 MWe complex. DOE requests Cooperating Agency status because of our interest in the technology demonstration, and intends to make use of the EIS as the basis for issuing a Record of Decision on the outcome of DOE's proposed Federal action. As discussed in meetings in your office in Atlanta on December 30, 1992, and in Tampa on January 6 and 7, 1993, DOE will cooperate fully with your staff in the course of the EIS preparation process, and provide assistance for those elements of the EIS that are specific to our proposed action. Furthermore, we understand that funding support for this undertaking will be pursued in the form of a third party support Memorandum of Understanding with TEC.

DOE's point of contact for preparation of the EIS analyses will be:

Bruce J. Buvinger
Environmental Specialist
U.S. Department of Energy
Morgantown Energy Technology Center (METC)
P.O. Box 880
Morgantown, WV 26507-0880
Telephone: (304) 291-4379

If you require any additional information or would like to further discuss this matter, and in general with regard to issues related to DOE's implementation of the National Environmental Policy Act (NEPA), please contact:

Carol M. Borgstrom
Director, Office of NEPA Oversight (EH-25)
U.S. Department of Energy
1000 Independence Avenue, S.W.
Washington, D.C. 20585
Telephone: (202) 586-4600 or (800) 472-2756

We look forward to hearing from you regarding this request at your earliest convenience.

Peter N. Brush
Acting Assistant Secretary
Environment, Safety and Health

Department of Energy
Washington, DC 20585

March 10, 1993

Mr. Patrick M. Tobin
Acting Regional Administrator
Region IV
U.S. Environmental Protection Agency
345 Courtland Street, N.E.
Atlanta, Georgia 30365

Dear Mr. Tobin:

By our letter of February 3, 1993, the Department of Energy (DOE) requested that the Environmental Protection Agency (EPA) serve as lead agency in the preparation of an Environmental Impact Statement (EIS) for the 1150 megawatt (MW) power plant complex proposed by Tampa Electric Company (TEC) for their site in Polk County, Florida. TEC has submitted an application to your office for a permit pursuant to the National Pollutant Discharge Elimination System for this entire 1150 MW complex. The extent of DOE's involvement is a proposal to provide cost-shared financial assistance to TEC for a 260 MW integrated gasification combined cycle unit which would be part of the 1150 MW complex. Given the greater magnitude of your agency's involvement in the entire project over that of DOE, it is appropriate for EPA and DOE to cooperate in the preparation of the EIS in the roles of lead and cooperating agencies, respectively.

In anticipation of EPA's assumption of lead agency authority, a draft memorandum of understanding (MOU) has been prepared by your staff in consultation with the staffs of the other designated signatories, including DOE. Revisions to the most recent draft of your proposed MOU marked "DRAFT 2-11-93" were received February 23, 1993.

Based upon my staff's review and their recommendations, and after consultation with DOE's Office of General Counsel, I have determined that the enclosed draft MOU adequately and accurately reflects the conditions and procedures to be followed in the development of the EIS as related to DOE's proposed action. I have initialed the signature page of this document indicating that DOE is prepared to sign the official copy of this MOU when submitted by EPA, subject to incorporation of a provision limiting the duration of the MOU to five years as required by DOE policy.

It should be noted that according to DOE policy, an MOU is not a contract nor a binding document, but an "umbrella agreement." In addition, any exchange of funds will be handled through separate interagency agreement(s).

We look forward to working with you on the preparation of the EIS for this proposed project.

Peter N. Brush
Acting Assistant Secretary
Environment, Safety and Health

Enclosure

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

MAR 17 1993

Mr. Peter N. Brush
Acting Assistant Secretary
Environment, Safety and Health
U.S. Department of Energy
Washington, D.C. 20585

RE: Lead Federal Agency for the Pending Tampa Electric Company Polk Power Station Environmental Impact Statement (EIS)

Dear Mr. Brush:

The U.S. Environmental Protection Agency (EPA) has received your letters dated February 3, 1993 and March 10, 1993, requesting that the federal Lead Agency role for the above-referenced EIS be transferred from the U.S. Department of Energy (DOE) to EPA. In response to this formal request, EPA/Region IV accepts the responsibility of being the federal Lead Agency for this EIS. Our acceptance is based on the following:

- New-Source NPDES Permit Required - We believe this proposed Florida project will require a federal new-source National Pollutant Discharge Elimination System (NPDES) permit, for which attendant EPA responsibilities pursuant to the National Environmental Policy Act (NEPA) would apply. EPA would be the permitting agency in this case since it has retained primacy for NPDES permitting in Florida. A final EPA new-source determination is pending.

- EIS Required - Given the need for a federal new-source NPDES permit for a major federal action with significant potential impacts on the environment, we believe that this proposed project requires development of an EIS.

- EIS Funding to be Secured Per MOU - An acceptable source of funding and set of procedures for EIS development is being established pending signature agreement by Tampa Electric Company (Tampa Electric), EPA, DOE, and, preferably, the U.S. Army Corps of Engineers (COE), to a Third-Party Memorandum of Understanding (MOU). With the incorporation of the final DOE requested changes (to the February 11, 1993 version of the draft MOU) as identified in the DOE March 10, 1993 letter, as well as the incorporation of some EPA editorial changes, EPA is prepared to sign the final MOU. After EPA signature, the original MOU will be circulated by EPA to Tampa Electric, which in turn is requested to sign and

then send the MOU to DOE, which in turn is requested to sign and send to COE, which in turn is requested to sign and send back to EPA. In anticipation of a collectively signed MOU, EPA is also in the process of selecting a Third-Party Contractor for EIS development under the direction of EPA and compensation of Tampa Electric. EPA will notify Tampa Electric of its final selection by letter.

- DOE is a Cooperating Agency - Per DOE request in the February 3 and March 10 letters and signature to the MOU, DOE will be a Cooperating Agency to EPA for this EIS. DOE will primarily assume this role due to their interest in NEPA review documentation related to the DOE conditional Clean Coal Technology financial assistance award to Tampa Electric for a 260 MW demonstration project, which would be incorporated in the proposed EIS. DOE timely technical and review/approval assistance to EPA for this and other relevant portions of the EIS is expected to the extent agreed to in the MOU.

- COE Requested as a Cooperating Agency - Assuming signature to the MOU or an exchange of letters, the Jacksonville District of the U.S. Army Corps of Engineers (COE) will also be a Cooperating Agency to EPA for this EIS. The COE will assume this role primarily due to COE involvement in project §404 (Clean Water Act) permitting, as appropriate, and possible need for NEPA review permit documentation.

With this EPA acceptance of the Lead Agency role and in anticipation of the collective signing of the MOU as well as final selection of the Third-Party Contractor and resolution of all other relevant issues, EPA is prepared to issue a Federal Register Notice of Intent (NOI) to prepare an EIS. We look forward to working with DOE on this important project. If you have any questions, please contact Heinz Mueller or Chris Hoberg of the Environmental Policy Section at (404) 347-3776.

Sincerely,

Patrick M. Tobin
Acting Regional Administrator

xc: Bruce Buvinger - DOE/METC; Morgantown, WV
Elmer Holt - DOE/HQ; Washington, DC
John Hall, c/o Mike Norwicki - COE/Jacksonville (FL) District
Spencer Autry, c/o Greg Nelson - Tampa Electric; Tampa, FL
Hamilton Oven, Jr., - Florida DER, Tallahassee, FL

EPA NOI and Comment Letters

were: An incomplete characterization of alternatives, a review of the relative isolation to other major actions underway in the Central Valley Project, a lack of a cumulative impacts analysis, and the large degree to which impact analyses are largely inconclusive and speculative. There was no provision in the DEIS for monitoring environmental impacts or for mitigation for adverse impacts.

ERP No. D-NOA-E91007-00 Rating EC1, Shrimp Fishery Management Plan, Implementation, Exclusive Economic Zone (EEZ), South Atlantic Region, NC, SC, FL and GA.

Summary: EPA requested more resear h on the impacts of exotic species introduction. EPA supported closing white shrimp fishing, after a severe freeze, if the closure included both commercial and recreational shrimping.

ERP No. D-UAF-L11017-AK Rating LO, Ionospheric Research Facility for the High Frequency Active Auroral Research Program, Construction and Operation, Site Selection, COE Section 404 Permit and NPDES Permit, AK.

Summary: EPA had no objections to the project as proposed.

ERP No. D-USN-D11022-00 Rating EC2, Dahlgren Division, Naval Surface Warfare Center Base Realignment, New Construction and Renovation, Westmoreland, Stafford, Spotsylvania and King George Counties, VA and Charles County, MD.

Summary: EPA expressed environmental concern regarding the cumulative impacts associated with electromagnetic field exp ures (EMFs). In particular EPA had concerns regarding the location of all facilities generating EMFs, human/biological health risks, and specific safety mea ures to be taken.

ERP No. DA-COE-E30032-FL Rating EC2, Palm Beach County Beach Erosion Project, Updated Information, Shore Protection Project, Jupiter/ Carlin Segment from Ma in Co., Line to Lake Worth Inlet and from South Lake Worth Inlet to Broward General Design Plan, Implementation, Martin and Broward Counties, FL.

Summary: EPA had environmental concerns regarding the p ject's contribution to the cumulative impacts of other similar beach nourishment projects planned for the county's shoreline. These concerns will be addressed with information from mitigation and monitoring plans.

Final EISs

ERP No. F-AFS-E65039-MS, W.W. Ashe Nursery Integrated Pests Management Plan, Implementation, DeSoto National Forest, Forest County, MS.

Summary: EPA had no objections to the preferred alternative with the inclusion of rigorous monitoring and mitigation measures.

Dated: May 17, 1993.

William D. Dickerman,

Deputy Director, Office of Federal Activities.

[FR Doc. 93-12097 Filed 5-20-93; 8:45 am]

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[ER-FRL-4620-8]

Tampa Electric Co., Polk Power Station; Environmental Impact Statement

AGENCY: U.S. Environmental Protection Agency (EPA).

ACTION: EPA Notice of Intent (NOI) to prepare an EIS to assess and document the projected environmental impacts of the proposed 1,150 MW Tampa Electric Polk Power Station and associated transmission lines proposed for southwestern Polk County, near Tampa, FL. The proposed power station includes a 260 MW Integrated Coal Gasification Combined Cycle Unit, being onsidered for cost-shared financial assistance by DOE under the Clean Coal Technology (CCT) Demonstration Program.

In the matter of Intent to Prepare an Environmental Impact Statement (EIS) Assessing the Environmental Impacts of the Proposed 1,150 MW Tampa Electric Company (Tampa Electric) Polk Power Station, and to Announce that the U.S. Environmental Protection Agency Assumes from the U.S. Department of Energy (DOE) the Federal Lead Agency Role for the EIS, and that DOE and the U.S. Army Corps of Engineers Become Cooperating Agencies.

This EPA NOI supplements the DOE NOI published at 57 FR 33331 (July 28, 1992) in which it was proposed that DOE would assume the role of the federal-Lead Agency and EPA be a Cooperating Agency to DOE. Because the EIS will address the envi nmental effects of the full 1,150 MW uild-out, it was determined that EPA is the appropriate Lead A ncy. Therefore, EPA will assume the Lead Agency role in the preparation of an EIS that will evaluate the Tampa Electric-proposed full project build-out to an 1,150 MW power plant, including the DOE 260 MW CCT demonstration project as Unit 1. Both DOE and the U.S. Army Corps of Engineers (COE) are Cooperating Agen ies to EPA for this EIS.

SUMMARY: This EPA NOI incorporates by reference background project information presented in the DOE July 28, 1992 NOI. It supplements and does not replace the DOE NOI; certain areas such as project scope, agency roles, and alternatives analysis are updated as appropriate.

EPA development of the EIS is made pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended, and EPA's responsibilities under the Clean Water Act (CWA) relative to the proposed project requiring a new-source National Pollutant Discharge Elimination System (NPDES) permit. (Tampa Electric has applied to EPA for a new-source NPDES permit for the proposed power plant because the plant would discharge pollutants to waters of the United States. Tampa Electric has also applied to EPA for a Clean Air Act Prevention of Significant Deterioration (PSD) permit.)

DOE will be a Cooperating Agency for this EPA EIS and proposes, as part of DOE's CCT Demonstration Program, to provide substantial cost-shared finan ial assistance for a 260 MW portion (Unit 1) of the 1,150 MW full project build-out, i.e., a new nominal 260 MW electric IGCC demonstration project. Unless the demonstration is unsuccessful, Tampa Electric intends to continue operating the plant commercially for power generation after the anti ipated federally-assisted demonstration period of operation (24-months). In addition to the initial 260 MW CCT demonstration project, Tampa Electric also intends to phase-in additional electric generation capacity until a full project build-out of 1,150 MW is achieved. Consequently, the EPA EIS will address a full power plant build-out to 1,150 MW.

ROLE OF PUBLIC, DATES AND ADDRESSES: Scoping comments are solicited on this proposed action. However, because DOE has held an announced public scoping meeting on August 12, 1992, at 7 p.m. at the Fort Meade Community Center in Fort Meade, FL, no additional meeting is planned at this time unless there is significant public demand for an additional scoping meeting or important issues are raised which were not addressed in the previous scoping meeting. Written scoping comments should be provided within 30 days and addressed to: Mr. Christian M. Hoberg; Project Monitor; U.S. Environmental Protection Agency; Region IV; Environmental Policy Section (FAB-4); 345 Courtland Street, NE., Atlanta, GA 30365. A copy of any official scoping comments received by EPA would be available for review in the EPA, Region IV office at the above address and in the Tampa Electric office in Mulberry, FL referenced below.

Verbal scoping comments made at the DOE scoping meeting or written follow-up comments included: Transmission line electromagnetic field (EMF) affects, coal sources and sulfur quantity, power plant air emission effects on vegetation, rail and highway transportation, land use, aviation impacts, mercury emissions, and various EPA environmental considerations/concerns. As indicated in the above-referenced DOE NOI, a complete transcript of the DOE scoping meeting will be available for review in the DOE Headquarters offices in Washington, DC and in the DOE Morgantown Energy Technology Center (METC) in Morgantown, WV; in the Tampa Hillsborough Public Library in Tampa, FL; and in the Tampa Electric office in Mulberry, FL. EPA attended the DOE scoping meeting and also inspected the Tampa Electric-proposed site with DOE and Tampa Electric at that time.

ALTERNATIVES AND ENVIRONMENTAL IMPACTS: Reasonable alternatives to the Tampa Electric-proposed action that are expected to be considered by EPA in the EIS are the no-action alternative, EPA action alternatives (approve, conditionally approve, or deny new-source NPDES permit), DOE action alternatives (approve or deny CCT award), site selection alternatives summary, site layout design alternatives summary, project alternative (1,150 MW facility without DOE CCT financial assistance), and selected t hnological alternatives. The EIS will address, as appropriate, environmental impacts of the project on water quality, air quality, wetlands, global climate change, protected federal and State of Florida species, cultural resources, socio-economics, land-use changes, solid and hazardous wastes, EMF effects, cumulative effects, pollution prevention, and biodiversity.

FOR FURTHER INFORMATION CONTACT: For general information on the proposed project and EIS process, please contact Mr. Heinz J. Mueller (Chief, Environmental Policy Section) or Mr. Christian M. Hoberg (Project Monitor) at the abo e EPA/Region IV address or at 404/347-3776 (FAX: 404/347-5206).

RESPONSIBLE OFFICIAL: Patrick M. Tobin, Acting Regional Administrator, U.S. Environmental Protection Agency, Region IV.

Dated: May 17, 1993.

Richard E. Sanderson,

Director, Office of Federal Activities.

[FR Doc. 93-12098 Filed 5-20-93; 8:45 am]

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[ER-FRL-4620-6]

Environmental Impact Statements; Notice of Availability

Responsible Agency: Office of Federal Activities, General Information (202) 260-5076 or (202) 260-5075.

Weekly Receipts of Environmental Impact Statements filed May 10, 1993 through May 14, 1993 pursuant to 40 CFR 1506.9.

EIS No. 930161, DRAFT EIS, AFS, WY, CO, Continental Divide National Scenic Trail Comprehensive Plan, Designation, Construc on and Reconstruction, Implementation, Medicine Bow National Forest, Hayden Ranger District, WY to Rio Grande National Forest, Conejos Peak Ranger District, CO, Due: July 6, 1993, Contact: Gary Snell (719) 852-5941.

EIS No. 930162, DRAFT EIS, AFS, CA, Tallac Historic Site Master Plan, Implementation, Lake Tahoe Management Unit, Special Use Permit, El Dorado County, CA, Due: July 6, 1993, Contact: Jackie Faike (916) 573-2600.

EIS No. 930163, DRAFT EIS, FHW, WA, Twin Bridges Replacement Project, Grosscup Road over the Yakima River, Funding and COE Section 10/404 Permit, Banton County, WA, Due: July 6, 1993, Contact: Barry F. Moorehead (206) 753-2120.

EIS No. 930164, DRAFT EIS, BLM, NV, Bedell Flat Water and Natural Gas Pipelines Crossing Project, Right-of-Way Grants and COE Section 404 Permit, Washoe County, NV, Due: July 13, 1993, Contact: James M. Phillips (702) 885-6000.

EIS No. 930165, DRAFT EIS, BLM, NV, Newmont Gold Quarry Open-Pit Mine and Ore Processing Facility Expansion and Operation, Plan of Operation Approval, NPDES and COE Section 404 Permits, Eureka and Elko Counties, NV, Due: July 19, 1993, Contact: David Vandenberg (702) 753-0200.

EIS No. 930168, DRAFT EIS, AFS, OR, Upper Wahoo Timber Sale and Road Construction, Implementation, Deer Creak Watershed, Wallowa-Whitman National Forest, Baker Ranger District, Baker County, OR, Due: July 6, 1993, Contact: Barry Hansen (503) 523-4476.

EIS No. 930167, DRAFT EIS, NPS, DC, New Stadium Construction and Operation, Implementation, Anacostia Park, Washington, DC, Due: July 6, 1993, Contact: Robert Stanton (202) 619-7025.

Amended Notices

EIS No. 930155, DRAFT EIS, NOA, AL, LA, TX, FL, MS, Red Snapper Reeffish Fishery Management Plan and Amendment 5, Implementation, Approval of several Permits and Special Management Zones, (SMZ), Gulf of Mexico, FL, AL, MS, LA and TX, Due: June 28, 1993, Contact: Wayne E. Swingle (813) 228-2815. Published FR 05-14-93—Due Data Correction.

Dated: May 17, 1993.

William D. Dickerson,

Deputy Director, Office of Federal Activities.

[FR Doc. 93-12096 Filed 5-20-93; 8:45 am]

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[FRL-4657-4]

Open Meeting of the EPA Border Environmental Plan Public Advisory Committee; Meeting Agenda

INTRODUCTION: The EPA Border Environmental Plan Public Advisory Committee (the "Advisory Committee") was established on March 28, 1992, pursuant to the Federal Advisory Committee Act (FACA), 5 U.S.C. app. 2, to advise the EPA Administrator on matters concerning the Agency's involvement in the protection and enhancement of the environment within the U.S.-Mexico border area (the "Border Area"), an area extending 100 kilometers (62 miles) on either side of the U.S.-Mexico border. The Advisory Committee also makes recommendations to the EPA Administrator on the implementation of the Integrated Environmental Plan for the Mexican-U.S. Border Area (the "Border Plan").

TIME, PLACE AND PURPOSE: The EPA Border Environmental Plan Public Advisory Committee will meet on Tuesday, June 15, and Wednesday, June 16, 1993, in San Diego, California. The meeting will take place at the Doubletree Hotel at Horton Plaza, 910 Broadway Circle, San Diego, California 92101. On Tuesday, June 15, the meeting will run from 8:30 a.m. to 4:30 p.m., with additional discussion time until 7:30 p.m., if necessary. There will be a break for lunch between 12:15 p.m and 2 p.m. On Wednesday, June 16, the meeting will run from 9 a.m. to 1 p.m.

The purpose of this meeting is to assess the accomplishments of the First Stage of the Plan (1992-1994) and to begin to update the Plan.

AGENDA:

Tuesday, June 15, 1993

8:30-9 a.m.: Welcome; opening statement

9-9:30: Discussion of the Good Neighbor Environmental Board authorized by the Enterprise for the

United States Department of Agriculture

Rural Electrification Administration

Washington D.C. 20250

9 JUN 1993

Mr. Heinz Mueller, Chief
Environmental Policy Section
EPA Region IV
345 Courtland Street, NE
Atlanta, Georgia 30365

Dear Mr. Mueller:

Please place us on your mailing list to receive a copy of the draft EIS and final EIS that EPA proposes to prepare for its action related to Tampa Electric Company's proposed 1,150 MW Polk Power Station. We are interested in this project due to its proximity and possible similarities to Seminole Electric Cooperative's Hardee Power Station. As we informed you in previous correspondence, we will likely be conducting additional NEPA review on the Hardee Power Station.

Please let us know if we can be of assistance to you in the review of the proposed Polk Power Station.

Sincerely,

LAWRENCE R. WOLFE
Chief, Environmental Compliance Branch
Electric Staff Division

Legal Environmental Assistance Foundation

1115 NORTH GADSDEN STREET, TALLAHASSEE, FLORIDA 32303-6327 904-681-2591

June 15, 1993

Mr. Christian M. Hoberg
Project Monitor
U.S. E.P.A.
Region IV
Environmental Policy Section (FAB-4)
345 Courtland Street, N.E.
Atlanta, Georgia 30365

RE: ER-FRL-4620-8, Tampa Electric Company, Polk Unit One

Dear Mr. Hoberg:

Thank you for your assistance during our recent telephone conversation. This letter contains our preliminary comments on the Notice of Intent to Prepare an Environmental Impact Statement (EIS) for federal NPDES permitting and for the Department of Energy proposal to cost-share with Tampa Electric Company for the construction of a power plant in Polk County, Florida.

Having read Mr. Heinz Mueller's September 8, 1992, scoping letter to Mr. Bruce Buvinger of the United States Department of Energy, it appears that there is some federal agency disagreement as the "project need" issue.

We expect the EIS to fully address the need issue in the alternatives analysis section. Without a full analysis of the need issue, the process will be violative of the National Environmental Policy Act and implementing regulations, including but not limited to 40 CFR s. 6.203. This issue is especially important because of your agency's stated intent to evaluate the "full power plant build-out to 1,150 MW".

The Florida Public Service Commission (PSC) has never considered the need for "full power plant build-out to 1,150 MW". Indeed, the Legal Environmental Assistance Foundation contends that Tampa Electric Company has not made a legally-sufficient showing to the PSC for even a 220 MW unit.

As I explained to you by telephone, the PSC need order is presently on appeal to the Florida Supreme Court in Case No. 80,225. I enclose a copy of our Initial Brief along with a copy of the PSC Need Determination Order for Polk Unit One. The order recognized that Tampa Electric Company's conservation efforts were not adequate to justify additional capacity.

There are a few additional items that relate to the need issue.

First, the PSC recently adopted new regulations regarding electric utility conservation efforts. Tampa Electric Company will be required to file new conservation goals with the PSC in 1994. Once those goals are approved, the utility will be required to file conservation plans and programs to meet those goals within 90 days.

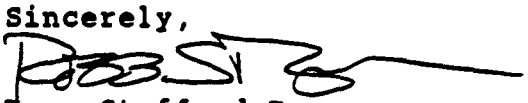
Second, the Florida Energy Office's contractor, Synergic Resources Corporation, recently completed an extensive analysis of the potential for increased energy efficiency in Florida's electrical sector - "Electricity Conservation and Energy Efficiency in Florida: Technical, Economic and Achievable Results". The PSC will consider electric utility conservation goals filings, in part, relative to the electric utility goals filings. The report indicates that a very substantial cost-effective energy efficiency resource exists in Florida's electricity sector. A copy of the Executive Summary is enclosed for the record.

Third, Tampa Electric Company has "affected units" for purposes of the Clean Air Act, 42 U.S.C. s. 7651 et seq. The EIS should address alternatives related to 42 U.S.C. s. 7651g (c)(1)(B), and implementing regulations for "Phase I reduced utilization plans" at 58 Fed. Reg. 3671-3673 (40 C.F.R. s. 72.43) The EIS should evaluate whether Tampa Electric Company has implemented or adequately addressed the "Demand Side Measures Applicable for the Conservation and Renewable Energy Reserve Program or Reduced Utilization" identified in Appendix A to Subpart F, 58 Fed. Reg. 3699-3701. Tampa Electric Company's acid rain permit application package should be evaluated relative to the alternatives analysis. A listing of Tampa Electric Company's "conservation programs" prepared by the PSC is enclosed for your information.

In addition, we are submitting a LEAF Alert on the PSC briefing on the SRC study. Attached to the LEAF Alert is a chart which shows other potential new power plants in Florida in the next Ten-Years. While the list is preliminary, it should assist you in evaluation of cumulative impacts.

Thank you for your consideration of these comments. Please add LEAF to the mailing list relative to the EIS. If we can provide further information, please do not hesitate to contact us.

Sincerely,



Ross Stafford Burnaman
Attorney
Energy Advocacy Program

encl.

Note

Enclosures to the letter from the Legal Environmental Assistance Foundation (LEAF) to EPA dated June 15, 1993, commenting on the EPA NOI for the preparation of this EIS (copy of LEAF's letter provided on the previous two pages in this FEIS) are available for public inspection at Tampa Electric Company's office in Mulberry, Florida, and at EPA's Region IV office in Atlanta, Georgia.

EPA Agency Coordination Letters and Responses

U.S. Department of the Interior

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

May 4, 1993

Mr. Richard Hannan
U.S. Fish and Wildlife Service
75 Spring Street, SW
Atlanta, GA 30303

RE: Endangered Species Act Coordination for Proposed EPA EIS;
Proposed Tampa Electric Polk Power Station; Polk County, FL

Dear Mr. Hannan:

The U.S. Environmental Protection Agency (EPA) is developing an Environmental Impact Statement (EIS) for the 1,150 MW Polk Power Station in Polk County, Florida proposed by Tampa Electric Company. EPA will prepare the EIS with the U.S. Department of Energy (DOE) and the Jacksonville District of the U.S. Army Corps of Engineers (COE) as Cooperating Agencies. EPA expects to publish its Federal Register Notice of Intent (NOI) to prepare an EIS in May 1993. As the federal Lead Agency for this EIS, we request your U.S. Fish and Wildlife Service input in the EIS process pursuant to Endangered Species Act (ESA) concerns for this proposed project.

Tampa Electric has submitted its Site Certification Application (SCA) to the State of Florida in late summer of 1992 to initiate the State of Florida site certification process under the Power Plant Siting Act. Tampa Electric has also applied for §404 wetland permitting from the COE and new-source National Pollutant Discharge Elimination System (NPDES) and Prevention of Significant Deterioration (PSD) permitting from EPA. DOE is primarily involved in the EIS development since the proposed power station includes a 260 MW Integrated Coal Gasification Combined Cycle Unit which is being considered for cost-shared financial assistance by DOE under the Clean Coal Technology (CCT) Demonstration Program.

Tampa Electric has identified its preferred site for the proposed power station. This Tampa Electric-preferred site is located in Polk County near Lakeland, Mulberry and Bartow, Florida, and is approximately 4,348 acres in size.

EPA requests your agency comments and concerns regarding listed and proposed endangered floral and faunal species that may be found on or known to range in the Tampa Electric-preferred site, or habitat found on site that may be suitable for such species. Based on our brief site visit and limited knowledge of the site, we are aware that wetlands and waterbodies, old and recently-disturbed mining pit lakes, relatively undisturbed areas, and one abandoned (or presently uninhabited) bald eagle nest are located on site, and that one inhabited bald eagle nest is located adjacent to the site.

To facilitate your review, we have enclosed excerpted sections of Volume I of the SCA prepared by Tampa Electric. These sections are:

- 1.4.3 General Project Description
- 1.4.2 General Site Location and Description
- 2.3.5 Vegetation/Land Use (figures reduced in enclosed copy)
- 2.3.6 Ecology (Threatened and Endangered Species--Flora and Fauna)

The COE Public Notice for Tampa Electric's §404 application is also enclosed for your review. The COE has agreed to hold the permit in abeyance until the EIS process is completed.

We look forward to your coordination on this project. Should you have questions, please contact me or Chris Hoberg (Project Monitor) at (404) 347-3776. Questions regarding the SCA may be addressed to Mr. Greg Nelson of Tampa Electric at (813) 228-4847. Since we are pursuing a rather tight schedule, we would appreciate hearing from you by June 1, 1993, and plan to include substantive correspondence on this matter in the EIS.

Sincerely,

Heinz J. Mueller, Chief
Environmental Policy Section

Enclosures

cc (w/o enclosures):

Mr. Gregory M. Nelson, P.E.
Tampa Electric Company
Consulting Engineer
Environmental Planning
P.O. Box 111
Tampa, FL 33601-0111

United States Department of the Interior

FISH AND WILDLIFE SERVICE
75 Spring Street, S.W.
Atlanta, Georgia
30303

May 19, 1993

Mr. Heinz J. Mueller
Environmental Policy Section
Environmental Protection Agency
345 Courtland Street, NE.
Atlanta, Georgia 30365

Dear Mr. Mueller:

I acknowledge receipt of your May 4, 1993, letter concerning the proposed Tampa Electric Polk Power Station, Polk County, Florida. Your letter and accompanying attachments are being forwarded to our Vero Beach, Florida, Field Office for review and coordination. That office will communicate with you and respond to your request and be your primary point of contact regarding this project. Mr. David L. Ferrell is the Field Supervisor, of the Vero Beach, Florida, Field Office. Should you need to call that office, their telephone number is 407/562-3909.

Sincerely yours,

Richard R. Hannan
Acting Chief, Division
of Endangered Species

United States Department of the Interior

FISH AND WILDLIFE SERVICE
P.O. BOX 2676
VERO BEACH, FLORIDA 32961-2676

June 15, 1993

Heinz J. Mueller, Chief
Environmental Policy Section
U.S. Environmental Protection Agency
Region IV
345 Cortland St., NE
Atlanta, GA 30365

Dear Mr. Mueller:

Reference is made to your letter to Richard Hannan of the Regional Office of the U.S. Fish & Wildlife Service (Service) dated May 4, 1993. This office has reviewed the excerpted portions of the Site Certification Application (SCA) and would like to provide the following comments with respect to listed fauna potentially present on-site:

1. The red-cockaded woodpecker (RCW) utilized slash pine in South Florida. It is commonly found in hydric pine flatwoods in many areas. While sufficient habitat may not exist on-site, there is a possibility that the proposed project site would provide foraging habitat to groups located adjacent to the site. We suggest a more thorough survey be performed to attempt to locate this species. A Service biologist recently visited a site in Hardee County near the proposed site which contained suitable, though limited RCW habitat.

2. Although the Florida scrub jay was only sighted once on-site, their habitat has dwindled to such an extent that they most likely do have a territory in the area. We suggest a thorough survey employing the survey methodology described in Nongame Wildlife Program Technical Report 8 (enclosed) be performed on the site.

Certain scrub plant species have recently been added to the Federal List of Threatened and Endangered Species. To enable you to include newly-listed species in your EIS, we have attached updated species lists for Hardee, Hillsborough and Osceola Counties.

The Service appreciates the opportunity to comment on this project and looks forward to coordinating with your office in the future. If you have any questions, please contact Jane Tutton of my staff at (407)562-3909.

The Service appreciates the opportunity to comment on this project and looks forward to coordinating with your office in the future. If you have any questions, please contact Jane Tutton of my staff at (407)562-3909.

Sincerely,

C. W. (Bill) Hoeft
Acting Field Supervisor

enclosures (4)
cc:
FWS, Jacksonville, FL
FWS, Atlanta, GA (Richard Hannan)
FGFWFC, Vero Beach and Punta Gorda

LIST OF FEDERALLY LISTED THREATENED AND ENDANGERED SPECIES
AND CATEGORY 1 AND 2 CANDIDATES FOR FEDERAL LISTING
IN HARDEE COUNTY

Scientific Name	Common Name	Status
Amphibians and Reptiles		
Alligator mississippiensis	American alligator	T(S/A)
Drymarchon corais couperi	Eastern indigo snake	T
Gopherus polyphemus	Gopher tortoise	C2
Heterodon simus	Southern hognose snake	C2
Ophisaurus compressus	Island glass lizard	C2
Pituophis melanoleucus mugitus	Florida pine snake	C2
Pseudobranchus striatus lustricolus	Gulf hammock dwarf siren	C2
Rana areolata aesopus	Florida Crawfish frog	C2
Sceloporus woodi	Florida scrub lizard	C2
Stilosoma extenuatum	Short-tailed snake	C2
Birds		
Aphelocoma coerulescens coerulescens	Florida scrub jay	T
Falco sparverius paulus	Southeastern American kestrel	C2
Lanius ludovicianus migrans	Migrant loggerhead shrike	C2
Mycteria americana	Wood stork	E
Polyborus plancus audubonii	Audubon's crested caracara	T
Mammals		
Blarina carolinensis (=*brevicauda*) *shermani*	Sherman's short-tailed shrew	C2
Neofiber alleni	Round-tailed muskrat	C2
Peromyscus (= *Podomys*) *floridanus*	Florida mouse	C2
Plecotus rafinesquii	Southeastern big-eared bat	C2
Ursus americanus floridanus	Florida black bear	C2
Plants		
	Family Convolvulaceae	
Bonamia grandiflora	Florida bonamia	T
	Family Rosaceae	
Prunus geniculata	Scrub plum	E

LIST OF FEDERALLY LISTED THREATENED AND ENDANGERED SPECIES
AND CATEGORY 1 AND 2 CANDIDATES FOR FEDERAL LISTING
IN HILLSBOROUGH COUNTY

Scientific Name	Common Name	Status
Amphibians and Reptiles		
Alligator mississippiensis	American alligator	T(S/A)
Drymarchon corais couperi	Eastern indigo snake	T
Gopherus polyphemus	Gopher tortoise	C2
Heterodon simus	Southern hognose snake	C2
Ophisaurus compressus	Island glass lizard	C2
Pituophis melanoleucus mugitus	Florida pine snake	C2
Pseudobranchus striatus lustricolus	Gulf hammock dwarf siren	C2
Rana areolata aesopus	Florida Crawfish frog	C2
Stilosoma extenuatum	Short-tailed snake	C2
Birds		
Falco peregrinus tundrius	Arctic peregrine falcon	T
Falco sparverius paulus	Southeastern American kestrel	C2
Haliaeetus leucocephalus	Bald eagle	E
Mycteria americana	Wood stork	E
Mammals		
Blarina carolinensis (=brevicauda) shermani	Sherman's short-tailed shrew	C2
Myotis austroriparius	Southeastern bat	C2
Neofiber alleni	Round-tailed muskrat	C2
Peromyscus (= Podomys) floridanus	Florida mouse	C2
Plecotus rafinesquii	Southeastern big-eared bat	C2
Trichechus manatus latirostris	West Indian manatee	E
Ursus americanus floridanus	Florida black bear	C2
Plants		
	Family Asteraceae	
Chrysopsis floridana	Florida golden aster	E

LIST OF FEDERALLY LISTED THREATENED AND ENDANGERED SPECIES
AND CATEGORY 1 AND 2 CANDIDATES FOR FEDERAL LISTING
IN OSCEOLA COUNTY

Scientific Name	Common Name	Status
Amphibians and Reptiles		
Alligator mississippiensis	American alligator	T(S/A)
Drymarchon corais couperi	Eastern indigo snake	T
Gopherus polyphemus	Gopher tortoise	C2
Heterodon simus	Southern hognose snake	C2
Ophisaurus compressus	Island glass lizard	C2
Pituophis melanoleucus mugitus	Florida pine snake	C2
Pseudobranchus striatus lustricolus	Gulf hammock dwarf siren	C2
Rana areolata aesopus	Florida Crawfish frog	C2
Birds		
Ammodramus savannarum floridanus	Floirida grasshopper sparrow	E
Aphelocoma coerulescens coerulescens	Florida scrub jay	T
Falco sparverius paulus	Southeastern American kestrel	C2
Haliaeetus leucocephalus	Bald eagle	E
Lanius ludovicianus migrans	Migrant loggerhead shrike	C2
Mycteria americana	Wood stork	E
Picoides borealis	Red-cockaded woodpecker	E
Polyborus plancus audubonii	Audubon's crested caracara	T
Mammals		
Blarina carolinensis (=*brevicauda*) *shermani*	Sherman's short-tailed shrew	C2
Neofiber alleni	Round-tailed muskrat	C2
Peromyscus (= *Podomys*) *floridanus*	Florida mouse	C2
Plecotus rafinesquii	Southeastern big-eared bat	C2
Ursus americanus floridanus	Florida black bear	C2
Plants		
	Family Convolvulaceae	
Bonamia grandiflora	Florida bonamia	T
	Family Oleaceae	
Chionanthus pygmaeus	Pigmy fringetree	E

United States Department of the Interior

FISH AND WILDLIFE SERVICE

P.O. BOX 2676

VERO BEACH, FLORIDA 32961-2676

July 27, 1993

Heinz J. Mueller, Chief
Environmental Policy Section
U.S. Environmental Protection Agency
Region IV
345 Cortland St., NE
Atlanta, GA 30365

Dear Mr. Mueller:

It has come to my attention that the species list for Polk County was not included in our letter and enclosures of June 15, 1993. We regret any inconvenience this may have caused and are enclosing the Polk County list at this time.

The Service appreciates your patience and looks forward to coordinating with your office in the future. If you have any questions, please contact me at (407)562-3909.

Sincerely,

Jane Tutton
Endangered Species Coordinator

enclosures (1)
cc:
FWS, Jacksonville, FL
FWS, Atlanta, GA (Richard Hannan)
FGFWFC, Vero Beach and Punta Gorda

U.S. GOVERNMENT PRINTING OFFICE: 1990-735-06

LIST OF FEDERALLY LISTED THREATENED AND ENDANGERED SPECIES
AND CATEGORY 1 AND 2 CANDIDATES FOR FEDERAL LISTING
IN POLK COUNTY

Scientific Name	Common Name	Status
Amphibians and Reptiles		
Alligator mississippiensis	American alligator	T(S/A)
Drymarchon corais couperi	Eastern indigo snake	T
Eumeces egregius lividus	Blue-tailed mole skink	T
Gopherus polyphemus	Gopher tortoise	C2
Heterodon simus	Southern hognose snake	C2
Neoseps reynoldsi	Sand skink	T
Ophisaurus compressus	Island glass lizard	C2
Pituophis melanoleucus mugitus	Florida pine snake	C2
Pseudobranchus striatus lustricolus	Gulf hammock dwarf siren	C2
Rana areolata aesopus	Florida Crawfish frog	C2
Sceloporus woodi	Florida scrub lizard	C2
Stilosoma extenuatum	Short-tailed snake	C2
Birds		
Ammodramus savannarum floridanus	Floirida grasshopper sparrow	E
Aphelocoma coerulescens coerulescens	Florida scrub jay	T
Falco sparverius paulus	Southeastern American kestrel	C2
Haliaeetus leucocephalus	Bald eagle	E
Lanius ludovicianus migrans	Migrant loggerhead shrike	C2
Mycteria americana	Wood stork	E
Polyborus plancus audubonii	Audubon's crested caracara	T
Mammals		
Blarina carolinensis (=brevicauda) shermani	Sherman's short-tailed shrew	C2
Neofiber alleni	Round-tailed muskrat	C2
Peromyscus (= Podomys) floridanus	Florida mouse	C2
Plecotus rafinesquii	Southeastern big-eared bat	C2
Ursus americanus floridanus	Florida black bear	C2
Plants		
	Family Asteraceae	
Liatris ohlingerae	Scrub blazing star	E
	Family Brassicaceae	
Warea amplexifolia	Clasping warea	E
Warea carteri	Carter's mustard	E
	Family Caryophyllaceae	
Paronychia chartacea	Paper-like nailwort	T
	Family Convolvulaceae	
Bonamia grandiflora	Florida bonamia	T

Scientific Name	Common Name	Status
	Family Fabaceae	
Lupinus aridorum	Scrub lupine	E
	Family Hypericaceae	
Hypericum cumulicola	Highlands scrub St. John's-wort	E
	Family Oleaceae	
Chionanthus pygmaeus	Pigmy fringetree	E
	Family Polygonaceae	
Polygonella ciliata var. basiramia	Hairy wireweed	E
	Family Rosaceae	
Prunus geniculata	Scrub plum	E

Water and Air Research, Inc.
CONSULTING ENVIRONMENTAL ENGINEERS, SCIENTISTS AND PLANNERS

6821 S.W. ARCHER ROAD • GAINESVILLE, FLORIDA 32608 • TELEPHONE (904) 372-1500 • FAX (904) 378-1500

MEMORANDUM

TO: Christian M. Hoberg, Environmental Policy Section

FROM: Bill Segel, Water and Air Research, Inc.

SUBJECT: Information on T-E Species of Concern

DATE: October 20, 1993

By letter dated May 4, 1993, EPA has coordinated with the FWS regarding federal endangered species on the site proposed for construction by Tampa Electric Company. In their response letter dated June 15, 1993, the FWS noted concerns regarding the red-cockaded woodpecker and the Florida scrub jay. In response to these concerns, the following observations are made:

The red-cockaded woodpecker is usually restricted for nesting to pine flatwoods containing overmature longleaf pine stands affected by red-heart disease (Wood 1983). Although this habitat extends throughout the southeastern United States, early harvesting of southern pines has reduced the number of preferable trees for these birds. Due to the limited acreage (118 acres - 2.7 percent), condition, and relatively young age of pine flatwoods found on site (Figure 3.1.5-2), there is a low probability of finding red-cockaded woodpeckers. A review of Florida Game and Fresh Water Fish Commission (FGFWFC) records (personal communication 1991) revealed no on-site or nearby (within one mile) locations for these birds. The nearest colony recorded by FGFWFC is 48 miles southeast of the Polk Power Site. Searches of the Polk Power Site were made by Tampa Electric Company consultant for the birds by full pedestrian searches of small, scattered habitats achieving more than 80 percent visual coverage. Searches were conducted on the dates listed below:

Bird Surveys	Mammal Surveys*	Plant Surveys*
5 February 1990	19-29 March 1991	18-23 March 1991
24-29 March 1991	5-9 April 1991	24-29 March 1991
1-5 April 1991	20-24 August 1991	1-5 April 1991
30 August 1991		20-24 August 1991
30 January 1992		30 January 1992
9-10 March 1992		

* Surveys also included bird observations.

Surveys for red-cockaded woodpeckers were particularly focused in the northwest corner of the property which contains the oldest pine stand on the site. There were no sightings of the birds or their distinctive nesting cavities in the trees. The conclusion is that the site is not used for nesting and is probably not home to the species, while on-site foraging is possible. On-site pines are relatively young stands and no individuals were sighted during the field studies.

Florida scrub jays occur in xeric scrub habitats in scattered locations along the central Florida ridge and along coastal ridges. Florida scrub

DRAFT
10/21/93

DRAFT

jays have specific habitat requirements for nesting and foraging typified by oak scrub along with palmetto, scattered sand pine, and rosemary (Cox 1981). They tend to avoid wetlands and forested communities. The decline of Florida scrub jays is apparently caused by the loss of scrub habitat which has been converted to residential developments, citrus groves, and pastureland. During one of many botanical field efforts along transects on the proposed site, two Florida scrub jays (sex unknown - indistinguishable by field observations) were briefly observed in a non-preferred habitat (red maple grove) in the proposed power block area on September 20, 1991, by a Tampa Electric Company consultant ecologist. A review of FGFWFC records (personal communication 1991) and Florida Natural Areas Inventory (personal communication 1991), found documentation of the closest group of Florida scrub jays about 13 miles from the subject property. During six wildlife efforts (listed previously) conducted by Tampa Electric Company consultant biologists, each of which included bird surveys, no Florida scrub jays were found. The methods used were similar to those outlined in FGFWFC Nongame Wildlife Program Technical Report No. 8 (1991) except that the habitats that are associated with the species are very small and fragmented. As a result, each area was walked and at least 80 percent visual coverage was achieved. Attractant sounds were utilized to call individuals during the walk over. In addition, observation of scrub habitats from elevated tops of spoil piles, including the use of spotting scopes and binoculars, was also conducted. As documented previously, these bird surveys were conducted over a two-year period. In addition, botanical surveys were being conducted on a different schedule with no additional sightings of Florida scrub jays. The conclusion reached as a result of these field efforts was that two specimens were observed on-site; however, Florida scrub jays were not sighted again during various subsequent surveys. Therefore, while the Florida scrub jay has visited or passed through the site and is known to exist in the area from FGFWFC records, it may not typically inhabit the subject property or exists in small numbers since it was observed only once.

Should the FWS or the FGFWFC wish to schedule a site inspection of the construction site proposed by Tampa Electric Company, such a site visit should be arranged with EPA during the 45-day NEPA review period of this DEIS.

REFERENCES:

Wood, D. A. 1983. Red-cockaded Woodpecker Symposium II. Florida Game & Freshwater Fish Commission. 112 pp.

Cox, J. A. 1981. Status and Distribution of the Florida Scrub Jay. Report to Florida Game and Freshwater Fish Commission. 92 pp.

Personal communication 1991. Kim Dryden, Florida Game & Freshwater Fish Commission, Cecil M. Webb Wildlife Management Area, April, 1991.

Personal communication 1991. Nancy Douglas and Paul Schultz, Florida Game & Freshwater Fish Commission, South Region Office, Lakeland, FL, April, 1991.

Personal Communication 1991. Steven Jones, Florida Natural Areas Inventory, Tallahassee, FL, April, 1991.

Add: FGFWFC Technical Report No. 8. 1991. Ecology and Development-Related Habitat Requirements of the Florida Scrub Jay (Aphelocoma Coerulescens Coerulescens). Fitzpatrick, John W.; Woolfenden, Gle and Kopeny, Mark T. April 1991.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET. N.E.
ATLANTA. GEORGIA 30365

October 21, 1993

Mr. C.W. Hoeft
Acting Field Supervisor
U.S. Fish and Wildlife Service
Ecological Services
P.O. Box 2676
Vero Beach, Florida 32960

ATTN: Ms. Jane Tutton

RE: Review of Preliminary Response to U.S. Fish and Wildlife Service's Endangered Species Concerns; EPA EIS for Proposed Tampa Electric Company's Polk Power Station; Tampa Electric Company's Preferred Project Site; Polk County, FL

Dear Mr. Hoeft:

The U.S. Environmental Protection Agency (EPA) appreciates your initial review of the endangered species associated with the project site preferred by the Tampa Electric Company for their proposed Polk Power Station in Polk County, Florida. We have preliminarily responded to your comments made in response to our letter and review material dated May 4, 1993, which was forwarded to you by Mr. Hannan of your Regional Office in Atlanta. Your response letters to us dated June 15 and July 27, 1993 (copies enclosed without enclosures), indicated some concerns regarding the red-cockaded woodpecker and the Florida scrub jay and also updated the endangered species list for Polk and surrounding counties.

Please review the enclosed copy of our preliminary response to your concerns. Ultimately, a final response will be included in the EIS for this proposed project. Should this not be considered an adequate response, please indicate what additional coordination may be needed in compliance with the Fish and Wildlife Coordination Act and the Endangered Species Act.

We look forward to your comments on this matter by November 3, 1993. Should you have questions, please call Chris Hoberg of my staff (404/347-3776; FAX: 404/347-5206).

Sincerely,

Heinz J. Mueller, Chief
Environmental Policy Section

Enclosures

United States Department of the Interior

FISH AND WILDLIFE SERVICE
P.O. BOX 2676
VERO BEACH, FLORIDA 32961-2676

December 2, 1993

Heinz J. Mueller, Chief
Environmental Policy Section
U.S. Environmental Protection Agency
Region IV
345 Courtland St., NE
Atlanta, GA 30365

ATTN: Christian Hoberg

Dear Mr. Mueller:

We have received your letter and facsimile concerning the Tampa Electric Power Station. Based on the survey results, we concur that the probability of red-cockaded woodpecker occupance on-site is minimal. We are concerned, however that Florida scrub jays have been located on-site. The Service,therefore, requests more information outlining conservation measures to be taken to avoid impacts to the scrub jay. Jane Tutton of my staff would be available to perform a site inspection with your staff to determine the extent of scrub habitat on-site.

The Service appreciates the opportunity to comment and will continue to provide you with technical assistance. If you have any questions, please contact Jane Tutton at (407)562-3909.

Sincerely, yours

David L. Ferrell
Field Supervisor

cc:
FWS, Jacksonville, FL
FWS, Atlanta, GA (Richard Hannan)
FGFWFC, Punta Gorda

Water and Air Research, Inc.
CONSULTING ENVIRONMENTAL ENGINEERS, SCIENTISTS AND PLANNERS

821 S.W. ARCHER ROAD • GAINESVILLE, FLORIDA 32608 • TELEPHONE (904) 372-1500 • FAX (904) 378-1500

December 23, 1993
File: 93-5232

Mr. Christian M. Hoberg
Environmental Scientist
Environmental Protection Agency
Mail Code FAB-4
345 Courtland Street, N.E.
Atlanta, Georgia 30365

RE: Field visit to the proposed TECO site to determine the potential for Scrub Jay (Aphelocoma coerulescens coerulescens)

Dear Mr. Hoberg:

On December 23, 1993, USFWS Wildlife Biologist Jane Tutton visited the site to the potential for scrub jays in the area of the power block. No scrub jays were found at the time of the visit. According to the USFWS, the habitat for the scrub jay was determined to be of less than marginal and the presence of the scrub jay on site was incidental.

A letter from the USFWS will be forthcoming to present the findings of the field visit.

Sincerely,

WATER AND AIR RESEARCH, INC.

William C. Zegel, Sc.D., P.E.
President

WCZ:js

Enclosures

TECO.GEN[WP]WCZ1223.LET

United States Department of the Interior

FISH AND WILDLIFE SERVICE
P.O. BOX 2676
VERO BEACH, FLORIDA 32961-2676

December 28, 1993

Heinz J. Mueller, Chief
Environmental Policy Section
U.S. Environmental Protection Agency
Region IV
345 Courtland St., NE
Atlanta, GA 30365

ATTN: Christian Hoberg

FWS Log No.: 4-1-94-271

Dear Mr. Mueller:

This letter serves as a follow-up to the site assessment made by the U.S. Fish & Wildlife Service (Service) at the Tampa Electric Power Station on December 23, 1993. Service biologists assessed the project site as well as the rail spur for potential impacts on the Federally-threatened Florida scrub jay. Upon completion of the site assessment followed by a briefing on the restoration/reclamation project, the Service finds that the project is not likely to adversely affect the Florida scrub jay.

Although this does not constitute a Biological Opinion described under Section 7 of the Endangered Species Act, it does fulfill the requirements of the Act, and no further action is required. If modifications are made in the project or if additional information involving potential impacts on listed species becomes available, please notify our office.

The Service appreciates the opportunity to comment and provide you with technical assistance. If you have any questions, please contact Jane Tutton at (407) 562-3909.

Sincerely,

Kalani D. Cairns

Kalani D. Cairns
Acting Field Supervisor

cc:
FWS, Jacksonville, FL
FWS, Atlanta, GA (Richard Hannan)
FGFWFC, Vero Beach, FL

Ray Ashton, Jr.
Water and Air Research, Inc.
6821 S.W. Archer Road
Gainesville, FL 32608

Jack Doolittle, President
Environmental Consulting and Technology, Inc.
3701 N.W. 98th Street
Gainesville, FL 32606

Jeck 2/1/94

United States Department of the Interior

FISH AND WILDLIFE SERVICE
P.O. BOX 2676
VERO BEACH, FLORIDA 32961-2676

January 26, 1994

Heinz J. Mueller, Chief
Environmental Policy Section
U.S. Environmental Protection Agency
Region IV
345 Courtland Street, N.E.
Atlanta, GA 30365

ATTN: Christian Hoberg

FWS Log No.: 4-1-94-271

Dear Mr. Mueller:

This letter will serve as a follow up of the telephone conversation between Jane Tutton of my staff and Chris Hoberg of your office. Mr. Hoberg requested written concurrence that the transmission line for the Tampa Electric Power Plant in the vicinity of the Mulberry-Bradley Junction in Polk County, Florida, is not likely to adversely affect the red-cockaded woodpecker or the Florida scrub jay. With respect to the installation of the rail spur, Mr. Hoberg also requested the same determination for the red-cockaded woodpecker. Therefore, the Service also finds that the installation of the rail spur is not likely to adversely affect the red-cockaded woodpecker.

Although this does not constitute a Biological Opinion described under Section 7 of the Endangered Species Act, it does fulfill the requirements of the Act and no further action is required. If modifications are made in the project or if additional information involving potential impacts on listed species becomes available, please notify our office.

If you have any questions, please contact Jane Tutton at (407) 562-3909.

Sincerely,

Joseph D. Carroll
Acting Field Supervisor

cc:
FWS, Jacksonville, FL
FWS, Atlanta, GA (Richard Hannan)
FGFWFC, Vero Beach, FL

Ray Ashton, Jr.
Water & Air Research, Inc.
6821 SW Archer Rd.
Gainesville, FL 32608

Jack Doolittle, President
ECT Environmental Consulting & Technology, Inc.
3701 NW 98th Street
Gainesville, FL 32606

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

May 27, 1993

Ms. Chris Shaver
Chief, Permit Review and Technical
Support Branch
Air Quality Division
National Park Service
12795 West Alameda Parkway
Denver, CO 80228

Dear Ms. Shaver:

RE: Class I Area Air Quality Coordination for Proposed EPA EIS;
Proposed Tampa Electric Polk Power Station; Polk County, FL

Dear Ms. Shaver:

The U.S. Environmental Protection Agency (EPA) is developing an Environmental Impact Statement (EIS) for the 1,150 MW Polk Power Station in Polk County, Florida proposed by Tampa Electric Company. EPA will prepare the EIS with the U.S. Department of Energy (DOE) and the Jacksonville District of the U.S. Army Corps of Engineers (COE) as Cooperating Agencies. EPA has published its Federal Register Notice of Intent (NOI) to prepare an EIS on May 21, 1993. As the federal Lead Agency for this EIS, we request National Park Service input in the EIS process regarding potential air quality concerns on nearby Class I area vegetation, soils, wildlife and visibility related to this proposed project.

Tampa Electric has submitted its Site Certification Application (SCA) to the State of Florida in late summer of 1992 to initiate the State of Florida site certification process under the Power Plant Siting Act. Tampa Electric has also applied for §404 wetland permitting from the COE and new-source National Pollutant Discharge Elimination System (NPDES) and Prevention of Significant Deterioration (PSD) permitting from EPA. DOE is primarily involved in the EIS development since the proposed power station includes a 260 MW Integrated Coal Gasification Combined Cycle Unit which is being considered for cost-shared financial assistance by DOE under the Clean Coal Technology (CCT) Demonstration Program.

Tampa Electric has identified its preferred site for the proposed power station. This Tampa Electric-preferred site is located in Polk County near Lakeland, Mulberry and Bartow, Florida, and is approximately 4,348 acres in size. We are aware of one relatively nearby Class I area, i.e., the Chassahowitzka Wilderness Area area located approximately 120 km from the site.

Although we understand that Tampa Electric has provided you with a copy of the original SCA, we have enclosed excerpted sections of the SCA prepared by Tampa Electric to facilitate your review. These sections are:

- 1.4.3 General Project Description (Volume 1)
- 5.6 Air Quality Impacts (including: "Other Potential Impacts on the Chassahowitzka Wilderness Area;" page 5.6.1-24) (Volume 2)
- 9.0 Analysis of Potential Impacts on the Chassahowitzka National Wilderness Area Prevention of Significant Deterioration Class I Area (Volume 4)

We have also enclosed our initial air quality comments on the SCA dated October 9, 1992.

At this time, EPA/Region IV has not identified substantive concerns regarding the air quality effects of the proposed project on the Chassahowitzka Wilderness Class I Area. Should you wish to further discuss this matter with EPA, Mr. Stan Kukier of the EPA Air Enforcement Branch, Source Evaluation Unit may be called at (404) 347-5014 as the initial point of contact. In regard to any State of Florida Class I Area concerns, you may wish to contact Mr. Hamilton (Buck) Oven, Jr. with the Florida Department of Environmental Regulation at (904) 487-0472.

We look forward to your coordination on this project. Specifically, as the federal Lead Agency for this EIS, EPA requests a comment letter from your agency regarding any potential air quality concerns on the Chassahowitzka Class I area related to the proposed Polk Power Station. Should you have questions, please contact Chris Hoberg (Project Monitor) at (404) 347-3776. Questions regarding the SCA may be addressed to Mr. Greg Nelson of Tampa Electric at (813) 228-4847. Since we are pursuing a rather tight schedule, we would appreciate hearing from you by July 1, 1993, and plan to include substantive correspondence on this matter in the EIS.

Sincerely,

Heinz J. Mueller, Chief
Environmental Policy Section

Enclosures

cc (w/o enclosures):

Mr. Hamilton Oven, Jr.
Florida Department of
Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Mr. Gregory M. Nelson, P.E.
Tampa Electric Company
Consulting Engineer
Environmental Planning
P.O. Box 111
Tampa, FL 33601-0111

Recd 8/2/93

United States Department of the Interior

FISH AND WILDLIFE SERVICE
75 Spring Street, S.W.
Atlanta, Georgia
30303

July 26, 1993

Mr. Heinz J. Mueller, Chief
Environmental Policy Section
Environmental Protection Agency
345 Courtland St., NE.
Atlanta, Georgia 30365

Dear Mr. Mueller:

We have completed our initial review of the Tampa Electric Company (TECO) Site Certification Application (SCA) for the proposed 1,150 MW Polk Power Station in Polk County, near Mulberry, Florida. The project would be located approximately 120 km southeast of the Chassahowitzka Wilderness Area (WA), a Class I air quality area administered by the Fish and Wildlife Service.

Modeling Analysis

The modeling analysis for the SCA calculated the impacts from the proposed nine turbines and the coal gasification facility which will be built on the site during a phased construction period.

The modeling was first performed with the Environmental Protection Agency (EPA) ISCST2 and ISCLT2 dispersion models. The modeling was performed for 5 years, using surface meteorological data from Tampa, Florida, and upper air data from Ruskin, Florida. The ISCST2 model was used to estimate the 3-hour and 24-hour average pollutant concentrations, while the ISCLT2 model was used to estimate the annual average impacts. The ISC modeling was performed for both the proposed Polk Station, and for all increment consuming or expanding sources. The modeling predicted that the proposed Polk Station alone would exceed the Fish and Wildlife Service significant impact levels for total suspended particulate (TSP), sulfur dioxide (SO_2), and nitrogen dioxide (NO_2) annual averages, and the 24-hour TSP average. However, the cumulative analysis indicated that the Class I increment would not be exceeded for these averaging periods. The SO_2 annual impact was reported as negative (less than zero) due to the increment expanding sources. The cumulative ISCST2 analysis did indicate that the 3-hour and 24-hour Class I increments for SO_2 would be exceeded.

Therefore, the EPA MESOPUFF II model was run to determine whether the proposed Polk Station would significantly contribute to the 3-hour and 24-hour Class I SO_2 increment exceedances. In this analysis MESOPUFF II was run for only 1986, using 3 surface and 2 upper air meteorological stations. MESOPUFF II was run for all SO_2 PSD increment consuming or expanding sources beyond 50 km from Chassahowitzka WA, and ISCST2 for all increment consuming sources less than 50 km from the wilderness area. The cumulative MESOPUFF II/ISCST2 modeling indicated that both the 3-hour and the 24-hour increment was exceeded, but the proposed Polk Station did not significantly contribute to those exceedances. The second-high maximum predicted 24-hour impact was 5.0 micrograms per cubic meter ($\mu g/m^3$), equal to the 24-hour Class I increment for SO_2; the proposed Polk Station contributed significantly to this concentration (0.39 $\mu g/m^3$). This indicates that the increment, while not violated, would in effect be totally consumed by this and existing projects.

We have several comments regarding the analysis. For future PSD permit analyses, applicants should follow the recommendations found in the recently published Interagency Workgroup on Air Quality Modeling (IWAQM) Phase 1 Report. This report discusses the options in MESOPUFF II to employ in such an analysis. For example, the IWAQM report requires that the PSD permit analysis with MESOPUFF II be run with full chemistry, for 5 years, for all averaging periods, with a switch to time dependent dispersion coefficients at 10 km. At this time, we recommend that increment expanding sources (negative emission rates) be modeled separately, first as positive emission rates, and then post processed as negative concentrations to the predicted concentrations of the positively emitting source's impacts. This is necessary because MESOPUFF II cannot address the concept of negative deposition or negative chemistry. This concept also applies to a NO_2 cumulative increment analysis.

The visibility analysis performed with the EPA VISCREEN model indicates that there should be no impact of a coherent visible plume at Chassahowitzka WA.

Control Technology Analysis

The proposed acid gas removal and sulfur recovery processes are estimated to achieve an overall sulfur removal efficiency of 95.6 percent. Nitrogen oxide (NO_x) emissions from the future combined cycle and simple cycle combustion turbines will be controlled by dry low-NO_x combustion technology, resulting in NO_x concentrations of 9 and 42 parts per million (ppm) for gas and oil firing, respectively. We agree that the proposed sulfur removal systems and dry-low NO_x technology represent best available control technology to minimize sulfur dioxide and NO_x emissions from the TECO facility.

Air Quality Related Values Analysis

TECO failed to adequately assess the potential effects of sulfate deposition from the proposed Polk Station on freshwater wetlands and related wildlife in the Chassahowitzka WA. These wetlands have a thin veneer of organic soil over a porous limestone base. As precipitation containing sulfate percolates through the soil, the organic matter in the soil may be oxidized. Such oxidation could cause erosion of the thin soil veneer. Many types of vegetation and invertebrates depend upon this veneer, and its loss would seriously alter and impair the function of the wetland ecosystem.

TECO also failed to adequately assess the potential effects of nitrate deposition on the saltwater habitat of Chassahowitzka WA. Nitrogen has been found to be the critical limiting nutrient to algal growth and eutrophication in coastal marine waters. Nitrogen enrichment has led to nuisance algal blooms; subsequent algal die-off can result in depleted dissolved oxygen concentrations in the water. In addition, algal blooms increase the turbidity of the water, decreasing light levels to rooted aquatic plants. Shallow coastal waters are particularly vulnerable to this process. Such changes in the patterns and magnitudes of phytoplankton production, changes in the production of rooted aquatic macrophytes, and changes in concentrations of dissolved oxygen can lead to alterations in the entire food web.

Atmospheric deposition of nitrogen, in the form of nitrates from emissions of nitrogen oxides, has been shown to be a significant source of nitrogen loading to coastal marine ecosystems, notably the Chesapeake Bay. Recently, atmospheric deposition of nitrogen to the Apalachicola River watershed in northern Florida was found to be sufficient to account for essentially all the dissolved nitrate and ammonium and total organic nitrogen flow in the river. The Apalachicola River empties into the Apalachicola Bay, where it is likely that these nitrogen compounds cause nutrient enrichment of the phytoplankton, with its associated problems of turbidity and decreased dissolved oxygen. Similar processes may be occurring in the Chassahowitzka WA ecosystem.

In addition, we are concerned about the deposition of mercury and beryllium in the wilderness area. These metals have the potential to bioaccumulate and biomagnify in the environment, and both are very toxic. Atmospheric pollutants from combustion sources have been shown to be important sources of metal contamination in fish and other wildlife in many regions of the country; deposition of metals may occur either near or far from the source, depending on atmospheric conditions. Atmospheric deposition of mercury has contributed significantly to mercury contamination in the Everglades; this contamination has been implicated in the decline of the endangered Florida panther. In addition, fish consumption advisories have been issued in

many areas of the country because of mercury contamination. Beryllium, also deposited from the atmosphere, can cause gill abnormalities in fish, leading to death. Acidic deposition may exacerbate these problems, by increasing the solubility and mobilization of heavy metals present in the environment, thus facilitating their uptake by organisms.

TECO should perform a cumulative analysis, using the revised MESOPUFF II model, to predict deposition and concentration of sulfate, nitrate, mercury, and beryllium at the Chassahowitzka WA. In addition, TECO should perform an Air Quality Related Values Analysis based on the results of the deposition modeling.

Thank you for giving us the opportunity to comment on this Site Certification Application. We look forward to reviewing additional information regarding this matter. We appreciate your cooperation in notifying us of proposed projects with the potential to impact the air quality and related resources of our refuges.

If you have any questions regarding this matter, please contact Ms. Ellen Porter of our Air Quality Branch in Denver at 303/969-2071.

Sincerely yours,

James W. Pulliam, Jr.
Regional Director

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

December 22, 1993

Mr. James W. Pulliam, Jr.
Regional Director
U.S. Fish and Wildlife Service
75 Spring Street, SW
Atlanta, GA 30303

RE: DOI-Requested Additional Class I Modeling for the Proposed Polk Power Station in Polk County, Florida

Dear Mr. Pulliam:

The U.S. Environmental Protection Agency (EPA) has received your letter dated July 26, 1993 responding to our May 27, 1993 coordination letter with the U.S. Department of the Interior (DOI), specifically the National Park Service (NPS) Permit Review and Technical Support Branch in Denver, Colorado. As the federal Lead Agency for the development of an Environmental Impact Statement (EIS) for the subject power station, our EIS coordination involved potential air quality concerns relative to Class I areas located near the site proposed for the Polk Power Station. We are aware of the Chassahowitzka National Wildlife Area (NWA) within the Chassahowitzka National Wildlife Refuge located some 120 km from the proposed site.

Your DOI response letter presented three areas of concern:

- Sulfate deposition on freshwater wetlands and related wildlife at Chassahowitzka NWA;
- Nitrate deposition on the saltwater habitat of Chassahowitzka NWA; and
- Deposition of mercury and beryllium in Chassahowitzka NWA.

The DOI requested that Tampa Electric Company perform a cumulative analysis and an Air Quality Related Values Analysis using a revised MESOPUFF II model to predict deposition and concentration of sulfate, nitrate, mercury, and beryllium at the Chassahowitzka NWA. The revisions to the model are in accordance with recently-available recommendations of the Interagency Workgroup on Air Quality Modeling (IWAQM) in their Phase 1 report.

Although MESOPUFF II modeling was conducted for various parameters by Tampa Electric Company for the state of Florida for the Tampa Electric Company Site Certification Application (SCA) (results also being incorporated in the EPA EIS), the sulfate, nitrate, mercury, and beryllium parameters requested in the July 26 letter have not been modeled. The IWAQM recommendations were not available when the original modeling work was done to support the SCA.

While MESOPUFF II modeling was not conducted for the requested parameters, additional air quality modeling was conducted for EPA during the EIS analysis. Specifically, an easy to apply Industrial Source Complex (ISC) dispersion model was used to screen the magnitude of the deposition rates at the Chassahowitzka NWA. Although not appropriate for modeling sites more than 50 km from the source, this approach was used for screening purposes and should result in an overprediction of impacts because of the assumptions inherent in the models. These assumptions include:

- Constant, uniform wind for each hour (i.e., steady state Gaussian plume dispersion); and
- Straight-line plume transport to all downwind distances.

Based on the results of the ISC modeling, screening predictions can be made regarding the upper bounds of potential impacts and significance can be judged based upon the magnitude of these impacts.

The ISC screening predicted deposition of sulfate and nitrate at less than 5.7 x 10-5 g/sq m/year and 6.7 x 10-4 g/sq m/year, respectively. These results should be high estimates because no provision for removal of these materials by natural processes other than deposition is included in the model. The sulfates are of concern in the freshwater wetlands of the Chassahowitzka NWA. These were described in your July 26 letter as having a thin veneer of organic soil over a porous limestone base. Any sulfate deposited upon the organic layer of the freshwater wetlands of the Chassahowitzka NWA should generally be biologically mediated. Sulfate would either be taken up directly by plants or microbially metabolized. Under anoxic conditions, sulfate would be reduced. This reaction would be mediated by hydrogen acceptors to produce water and sulfide (Alexander, 1977: "Introduction to Soil Microbiology"). The sulfide would be free to react in other biological pathways. Thus, this low-level addition of sulfate is expected to be metabolized to relatively harmless compounds, with no significant negative impacts to the organic soil layer.

The levels of organic nitrogen as nitrogen in the Waccasassa estuary just north of the Chassahowitzka NWA have been reported in the literature as 0.46 mg/l (Putnam, 1966: "Limiting Factors for Primary Productivity in a West Coast Florida Estuary"). The input of nitrogen to the approximately 15,000 acres of saltwater habitat at Chassahowitzka NWA from the proposed project each year is estimated at less than 9.2 kg. The level of organic nitrogen should be increased by no more than 0.036 percent each year from this source, assuming no exchange of water with the Gulf of Mexico and an average depth of 3 feet in the estuary. On the basis of the results of the ISC screening and the levels of organic nitrogen measured in Waccasassa, the estimated rate of deposition would change the level of organic nitrogen by less than 1 percent in 25 years of proposed power station operation.

Mercury and beryllium deposition in the vicinity of the Chassahowitzka NWA from the proposed project were both estimated by the ISC modeling to be less than 2.5 x 10-9 g/sq m/day. Baseline data were not located in the literature on existing levels of these materials in the soil, water and biota of the area. However, EPA has published representative metal contents of mercury and beryllium typical of soils (EPA, 1987: EPA/540/P-87/001B). Specifically, EPA reports the common ranges for mercury and beryllium as 0.01 to 0.3 ppm, and 0.1 to 40 ppm, respectively, and the selected average of these two metals for soils as 0.03 ppm and 6 ppm, respectively. On the basis of the ISC modeling and EPA's estimate of average levels of these metals in soils, the estimated deposition rate would change the selected average by less than 0.17 percent in 25 years of proposed power station operation.

Since EPA's initial project coordination with the DOI on May 27, 1993, EPA has fully delegated the PSD Program to the state of Florida by letter dated October 26, 1993 (copy enclosed). As such, any additional modeling regarding PSD permitting would be a state of Florida decision, with EPA retaining program oversight. Accordingly, EPA has forwarded the DOI response letter dated July 26, 1993 to the state of Florida (Florida Department of Environmental Protection: FDEP). The FDEP has indicated to EPA that they do not request any additional PSD modeling at this time. Additional coordination between the FDEP and DOI may be forthcoming.

Beyond the PSD increment assessment, the DOI Federal Land Manager (FLM) at the Chassahowitzka NWA may interpret the proposed power station to have an adverse effect on the environmental criteria for the Class I area. As such, the state of Florida, as the PSD permitting agency, will be coordinating with the FLM in this regard consistent with the Air Quality Related Values Analysis responsibilities of the FLM noticed at 40 CFR 52.21(p)(2).

From a NEPA perspective, EPA will determine if additional modeling would be warranted for the NEPA review of project air quality. This decision will be based on the evaluation of the FLM's decision regarding the Class I environmental criteria.

We appreciate the comments made by the DOI. Any additional coordination regarding PSD permitting should be made with the FDEP. It is our understanding that the FDEP will issue a Notice on the Intent to Issue the PSD Permit in January 1994 and that the Colorado Office (Mr. John Bunyak) and the FLM at the Chassahowitzka NWA are both on the state's Notice mailing list. In order for comments to be official, however, comments would need to be received by the state within the 14-day Public Notice comment period. Preliminary discussions with the FDEP may be directed to Mr. Thomas Rogers at 904/488-0114. Additional comments from a NEPA perspective may be

directed to me or Mr. Chris Hoberg at 404/347-3776. Official NEPA comments may also be provided during the 45-day NEPA review period for the pending Draft EIS, which is expected to be noticed and published in February 1994.

Sincerely,

Heinz J. Mueller, Chief
Environmental Policy Section

Enclosures

cc: Mr. John Bunyak, Chief
Permit Review and Technical
Support Branch
Air Quality Division
National Park Service
12795 West Alameda Parkway
Denver, CO 80228

Mr. Thomas G. Rogers
Administrator
Air Modeling and Assessment
Florida Department of Environmental Protection
Twin Towers Ofice Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Florida Department of Environmental Protection

Florida Department of
Environmental Protection

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Lawton Chiles
Governor

Virginia B. Wetherell
Secretary

February 25, 1994

Mr. Greg Nelson
Tampa Electric Company
Post Office Box 111
Tampa, Florida 33601-0111

Dear Mr. Nelson:

Re: Polk Power Station

The enclosed letter from the Department of Interior's Fish and Wildlife Service is forwarded for your information and compliance when you apply for permits for future phases of the Polk Power Station.

Sincerely,

John C. Brown, Jr., P.E.
Administrator
Air Permitting and Standards

JB/CH/bjb

Enclosure

cc: H. Mueller, EPA
J. W. Pulliam, EPA
W. Thomas, SWD
T. Rogers, FDEP

United States Department of the Interior

FISH AND WILDLIFE SERVICE
1875 Century Boulevard
Atlanta, Georgia 30345

IN REPLY REFER TO:

February 14, 1994

Mr. Clair H. Fancy
Chief, Bureau of Air Regulation
Florida Department of
Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399

Dear Mr. Fancy:

We have reviewed the Prevention of Significant Deterioration (PSD) permit application and the Technical Evaluation and Preliminary Determination for Tampa Electric Company's (TECO) proposed 260 MW Integrated Coal Gasification Combined Cycle Unit. This is the first phase of a project at TECO's Polk Station that would eventually have a generating capacity of 1150 MW. The facility would be located in Polk County, Florida, approximately 120 km southeast of Chassahowitzka Wilderness Area (WA), a Class I air quality area, administered by the Fish and Wildlife Service (Service). The proposed project would be a significant emitter of nitrogen oxides (NO_x), sulfur dioxide (SO_2), particulate matter (PM/PM_{10}), carbon monoxide (CO), volatile organic compounds (VOC), and sulfuric acid mist (H_2SO_4). The facility is also subject to PSD regulations for lead, beryllium, and mercury.

Best Available Control Technology Analysis

The proposed acid gas removal and sulfur recovery processes are estimated to achieve an overall sulfur removal efficiency of 95.6 percent. Nitrogen oxide (NO_x) emissions from the future combined cycle and simple cycle combustion turbines will be controlled by dry low-NO_x combustion technology, resulting in NO_x concentrations of 9 and 42 parts per million (ppm) for gas and oil firing, respectively. We agree that the proposed sulfur removal systems and dry-low NO_x technology represent best available control technology to minimize sulfur dioxide and NO_x emissions from the TECO facility.

Air Quality Modeling Analysis

Although this PSD permit is for the first phase of the project, a 260 MW facility, the modeling was performed for the entire project, which will eventually have a generating capacity of 1150 MW.

The Class I increment modeling was first performed with the EPA ISCST2 and ISCLT2 dispersion models. The modeling was performed for 5 years, using surface meteorological data from Tampa, Florida, and upper air data from Ruskin, Florida. The ISC modeling was performed for both the proposed Polk Station, and for all increment consuming or expanding sources. The cumulative ISCST2 analysis did indicate that the 3-hour and 24-hour Class I increments for SO_2 would be exceeded.

Therefore, the EPA MESOPUFF II model was run to determine whether the proposed Polk Station would significantly contribute to the 3-hour and 24-hour Class I SO_2 increment exceedances. In the earlier analysis for the Environmental Impact Statement (EIS), the MESOPUFF II modeling indicated that the entire 1150 MW proposed Polk Project would not significantly contribute to a 3-hour or 24-hour increment violation. The cumulative high second-high 24-hour SO_2 concentration in that report was stated to be 5.0 $\mu g/m^3$. In the PSD modeling analysis for the Phase I application, the applicant has erroneously used the option in the MESOPUFF II model to uniformly distribute SO_2 concentrations within the puffs, instead of using the option of a gaussian distribution within the puffs. This error incorrectly produced a high second-high 24-hour SO_2 concentration of 3.8 $\mu g/m^3$. This requirement for gaussian distribution within the puffs is found in the EPA document "Interagency Workgroup on Air Quality Modeling (IWAQM) Phase 1 Report" and contains the methodology that must be used in a Class I analysis.

We accept the results from the modeling analysis contained in the EIS that indicate the 24-hour SO_2 increment may be exceeded but not violated. However, the modeling represents the impact from the full Polk Station project of 1150 MW. While one could argue that this represents a conservative assumption, it could be construed as "increment banking," which would put future applicants in the area at risk of not having sufficient increment available for their proposed sources. It is our understanding that the State of Florida also does not accept this "increment banking" effort, and we support the State's position. For future applicants performing Class I increment analyses for Chassahowitzka WA, the emissions from the proposed TECO Polk Phase I 260 MW facility should be modeled and not the emissions from the future 1150 MW project.

The visibility analysis performed with the EPA VISCREEN model indicates that there should be no impact of a coherent visible plume at Chassahowitzka WA.

Air Quality Related Values Analysis

In our letter to EPA of July 1993 regarding the Site Certification Application for this project, we asked that TECO perform a cumulative analysis, using the revised MESOPUFF II model, to predict deposition and concentration of sulfate, nitrate, mercury, and beryllium at the Chassahowitzka WA. We asked that TECO perform an Air Quality Related Values Analysis based on the results of the deposition modeling.

EPA replied to our request in a December 1993 letter that MESOPUFF was not conducted for the requested parameters. Instead, the ISC dispersion model was used to predict deposition at Chassahowitzka WA. While we agree that TECO's contribution of sulfate and nitrate at the wilderness area is small (5.7×10^{-5} and 6.7×10^{-4} g/sq m/year, respectively), the modeling did not predict cumulative deposition. As we have stated in numerous letters to your Department, we are concerned not only with an individual source's impact to AQRVs, but with the cumulative impact of all sources in an area. EPA states that TECO's small sulfate contribution will be assimilated by the ecosystem. We are concerned that the organic soils of Chassahowitzka WA may have reached their capacity to assimilate sulfate, and that additional sulfate may oxidize the soils, resulting in their erosion.

The analysis of nitrogen deposition similarly concluded that TECO's contribution was small, and thus impacts to Chassahowitzka WA would be small. Again, we are concerned with cumulative impacts. While TECO's contribution to nitrogen deposition may only change the level of nitrogen in near shore waters by 1 percent, 20 such sources will have a much more significant impact. The analyses for mercury and beryllium deposition were not cumulative, either. We need to know: (1) the cumulative deposition of pollutants, and (2) the ecological consequences of this deposition. We ask that TECO be required to perform these analyses when they apply for permits for future phases of their Polk Power Station.

Thank you for providing us the opportunity to comment on the proposed project. If you have questions, please call Ms. Ellen Porter of our Air Quality Branch in Denver at 303/969-2071.

Sincerely yours,

James W. Pulliam, Jr.
Regional Director

Florida Division of Historical Resources

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

May 13, 1993

Mr. George W. Percy, Director
State Historic Preservation Officer
Florida Department of State
Division of Historical Resources
R.A. Gray Building
500 South Bronough
Tallahassee, FL 32399-0250

ATTN: Ms. Susan Hammersten - File No. 920360
Ms. Susan M. Herring - File No. 910020

RE: EPA §106 Coordination of the NHPA for the EPA EIS for the Proposed Tampa Electric Polk Power Station; Polk County, FL

Dear Mr. Percy:

The U.S. Environmental Protection Agency (EPA) is developing an Environmental Impact Statement (EIS) for the 1,150 MW Polk Power Station in Polk County, Florida proposed by Tampa Electric Company. EPA will prepare the EIS with the U.S. Department of Energy (DOE) and the Jacksonville District of the U.S. Army Corps of Engineers (COE) as Cooperating Agencies. EPA expects to publish the Federal Register Notice of Intent (NOI) to prepare an EIS in May 1993. As the federal Lead Agency for this EIS, we request input from your Division of Historical Resources in the EIS process pursuant to §106 of the National Historic Preservation Act (NHPA) for this proposed project.

Tampa Electric submitted its Site Certification Application (SCA) to the State of Florida in late summer of 1992 to initiate the State of Florida site certification process under the Power Plant Siting Act. Tampa Electric has also applied for §404 wetland permitting from the COE and new-source National Pollutant Discharge Elimination System (NPDES) and Prevention of Significant Deterioration (PSD) permitting from EPA. DOE is primarily involved in the EIS development since the proposed power station includes a 260 MW Integrated Coal Gasification Combined Cycle Unit which is being considered for cost-shared financial assistance by DOE under the Clean Coal Technology (CCT) Demonstration Program.

Tampa Electric has selected their preferred site for the proposed power station which may or may not be the site selected in the EIS. The Tampa Electric-preferred site is located in Polk County near Lakeland, Mulberry and Bartow, Florida. Considerable phosphate mining has and is occurring on site.

Appendix 11.5 of Volume 5 of the original SCA prepared by Tampa Electric Company addresses previous Tampa Electric coordination with your agency regarding cultural resources for the Tampa Electric-preferred site. As reference, we have enclosed Appendix 11.5 for your information (Figure 1 of Section 11.5.3 was reduced in copy). In Appendix 11.5, we note your comment letter dated January 10, 1993, in response to the initial coordination by Tampa Electric. This letter requests a historical survey of a portion of the project area which "...has not been subjected to mining practices nor has it been assessed for cultural resources." EPA understands from Tampa Electric and the SCA that a survey was conducted. In a follow-up letter from your agency dated February 27, 1993, we note your following conclusion:

> "Therefore, on the basis of the negative findings, it is the opinion of this agency that the proposed TEC Polk Power Station project is unlikely to affect any sites listed, or eligible for listing, in the National Register. The project may proceed without further involvement with this agency."

Based on this excerpt, EPA assumes that the Tampa Electric survey results were acceptable to your agency for this site. EPA, therefore, anticipates no adverse effects to cultural resources on this site.

In addition to the the Tampa Electric-preferred site, the EIS will summarize two alternate sites. For these two sites, EPA's third-party contractor (Water and Air Research, Inc.) involved in the preparation of the EIS for EPA, is expected to contact your Office regarding potential project impacts (and the significance of such impacts) to historical and archaeological resources that are listed or that are eligible for listing in the National Register of Historic Places. The number and significance of any listings for these two sites is to be compared in the EIS against the listing for the above Tampa Electric-preferred site (archaeological site 8PO1508 determined not to be significant). Should an alternate site ultimately be selected, EPA will coordinate with your Office relative to potential impacts to cultural resources for that site.

Regardless of the site selected, the project will involve existing and new transmission line corridors. Please advise what, if any, additional coordination is needed for these corridors relative to EPA compliance with §106 of the NHPA. Additionally, we understand that site connection with a proposed natural gas pipeline is expected at sometime in the future. If this is not determined until after completion of the EIS process, Tampa Electric will need to coordinate with your Office at that time regarding cultural resources along the connecting right-of-way (ROW). We understand that the alignment of such a ROW is unclear at this time.

We appreciate your previous coordination with Tampa Electric and look forward to your coordination with us on this project. As the federal Lead Agency for this EIS, EPA requests a status letter from your agency regarding EPA compliance with §106 of the NHPA for this proposed EIS project.

Should you have questions, please contact Chris Hoberg (Project Monitor), or Marion Hopkins (EPA NHPA Coordinator) at (404) 347-3776. Questions regarding the SCA may be addressed to Mr. Greg Nelson of Tampa Electric at (813) 228-4847. Since we are pursuing a rather tight schedule, we would appreciate your response by June 1, 1993, and plan to include substantive correspondence on this matter in the EIS.

Sincerely,

Heinz J. Mueller, Chief
Environmental Policy Section

Enclosure

cc (w/o enclosure):

Mr. Gregory M. Nelson, P.E.
Tampa Electric Company
Consulting Engineer
Environmental Planning
P.O. Box 111
Tampa, FL 33601-0111

Dr. William C. Zegel
President
Water and Air Research, Inc.
6821 S.W. Archer Road
Gainesville, FL 32608

FLORIDA DEPARTMENT OF STATE
Jim Smith
Secretary of State
DIVISION OF HISTORICAL RESOURCES
R.A. Gray Building
500 South Bronough
Tallahassee, Florida 32399-0250
Director's Office (904) 488-1480
Telecopier Number (FAX) (904) 488-3353

In Reply Refer To:
Susan Hammersten
Compliance Review
Section, DHR
(904) 487-2333

PFN: 931516

June 1, 1993

Mr. Heinz J. Mueller, Chief
Environmental Policy Section
US Environmental Protection Agency, R4
345 Courtland Street, NE
Atlanta, Georgia 30365

RE: Section 106 Coordination for the Polk Power Station
Environmental Impact Statement
Polk County, Florida

Dear Mr. Mueller:

In accordance with the procedures contained in 36 C.F.R., Part 800 ("Protection of Historic Properties"), we have reviewed the information in your letter concerning the referenced project.

A review of our files indicates that your information concerning this project is both current and correct. Those portions of the project area for which we requested a survey have been surveyed to our satisfaction. Therefore, we have no concerns regarding historic properties at the site submitted for the Site Certification Application. Any other sites which may be proposed for the project in the Environmental Impact Statement (EIS) will require review by this office.

In addition, we understand that new powerlines and possibly a gas pipeline will be connected to the power plant at some future date. Once the final power plant site and the powerline and pipeline corridors have been selected, the transmission line right-of-way corridors can be submitted to this office for review and comment. This process usually takes place under the Electrical Power Plant Siting Act (ss. 403.501-539 Florida Statutes). The connection of the gas pipeline will also require review by this office.

If you have any questions concerning our comments, please do not hesitate to contact us. Your interest in protecting Florida's historic properties is appreciated.

Sincerely,

Suzanne P. Walker for

George W. Percy, Director
Division of Historical Resources
and
State Historic Preservation Officer

GWP/Hsh

M E M O R A N D U M

October 4, 1993
3:20 p.m.

Record of telephone conversation with
Susan Hammerstein, Historic Sites Specialist
Division of Historical Resources
Florida Department of State
904-487-2333

Telephone conservation between Water and Air Research, Inc., on behalf of EPA, and Ms. Hammerstein focusing on the transmission line and rail connection planned as part of the proposed action. This additional coordination resulted in the following:

1. Regarding 200 foot railroad connection, Susan said they are willing to forgo detailed survey. This is because the route crosses two right-of-ways in an area that has been mined for phosphate. Their experience is that right-of-ways for roads and railroads are usually disturbed and contains no sites of value. However, if something is discovered during construction of the connection, they would like to know about it.

2. The transmission line corridor has not been reviewed by the Division, but they would not expect to review it until a specific alignment has been selected. She can believe that there are no recorded sites in the corridor, but a more detailed survey must be done as part of the state process for approval.

3. The notes from these telephone conversations can be used as part of EPA coordination efforts in the EIS.

APPENDIX C

Tampa Electric Company Joint Application for Works in the Waters of Florida

- USACOE Public Notice
- EPA Comments on USACOE Public Notice
- Update of Tampa Electric Company Application

Tampa Electric Company Joint Application for Works in the Waters of Florida

ATTACHMENT A
RESPONSE TO ITEM 10

With this application Tampa Electric Company seeks permission to place fill within and recontour heavily disturbed wetlands and open water areas which have formed subsequent to phosphate mining activities on the proposed Polk Power Station property (see Figures 1, 2, 3, 4, and 5).

Existing, unreclaimed mine cuts on the property will be incorporated into a cooling reservoir, a stormwater retention pond and wetland enhancement areas (see Figures 2, 3, 4, and 5). Areas proposed for fill placement are either currently unvegetated or are narrow littoral zones vegetated with a dominance of invasive cattail (Typha sp.). Approximately 211.78 acres of this wetland type will be filled for the construction of a series of containment berms for the cooling reservoir, transmission line, and the power plant (see Table 1).

Elsewhere within the Polk Power Station site, isolated disturbed wetlands, which have either formed subsequent to clearing and earthmoving activities or are relict systems, will be displaced for the construction of a functional and practical power plant. These freshwater wetlands are also typically dominated by nuisance species of vegetation including groundsel bush (Baccharis halmifolia), primrose willow (Ludwigia peruviana), Carolina willow (Salix caroliniana) and cattail. More desirable species found within these wetlands included red maple (Acer rubrum), laurel oak (Quercus laurifolia), water oak (Quercus nigra), dahoon holly (Ilex cassine), buttonbush (Cephalanthus occidentalis), sand cordgrass (Spartina bakeri), pickerel-weed (Pontederia cordata), softrush (Juncus effusus), arrowhead (Sagittaria lancifolia), Virginia chain fern (Woodwardia virginica), redroot (Lacnanthes caroliniana) and goldenrod (Solidago fistulosa). Approximately 41.33 acres of this habitat will be displaced for the construction of the plant site.

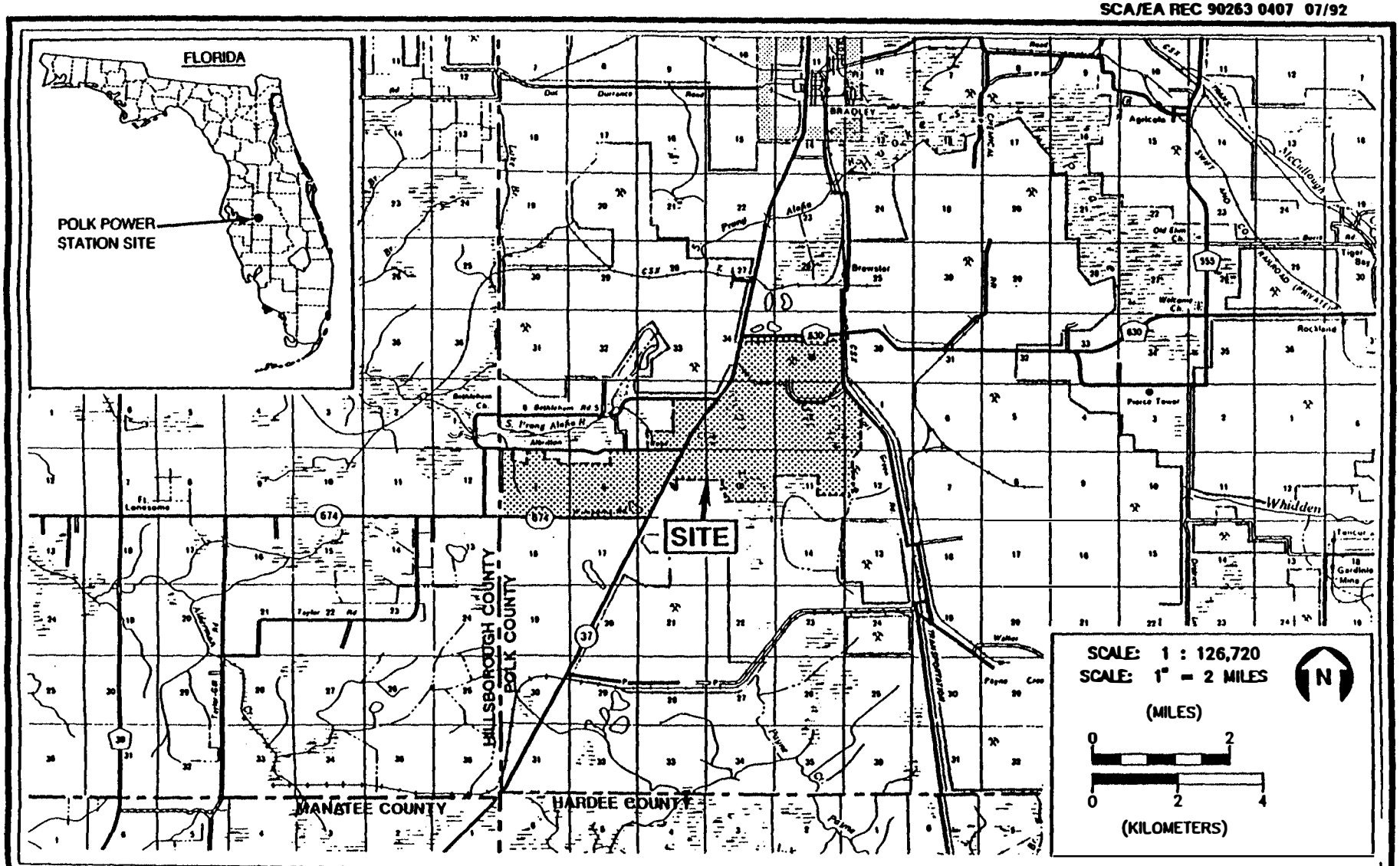


FIGURE 1.
SITE LOCATION MAP
DREDGE AND FILL PERMIT APPLICATION

Sources: FDOT Maps., Hillsborough Co., Polk Co., Manatee Co., Hardee Co.; ECT, 1992.

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

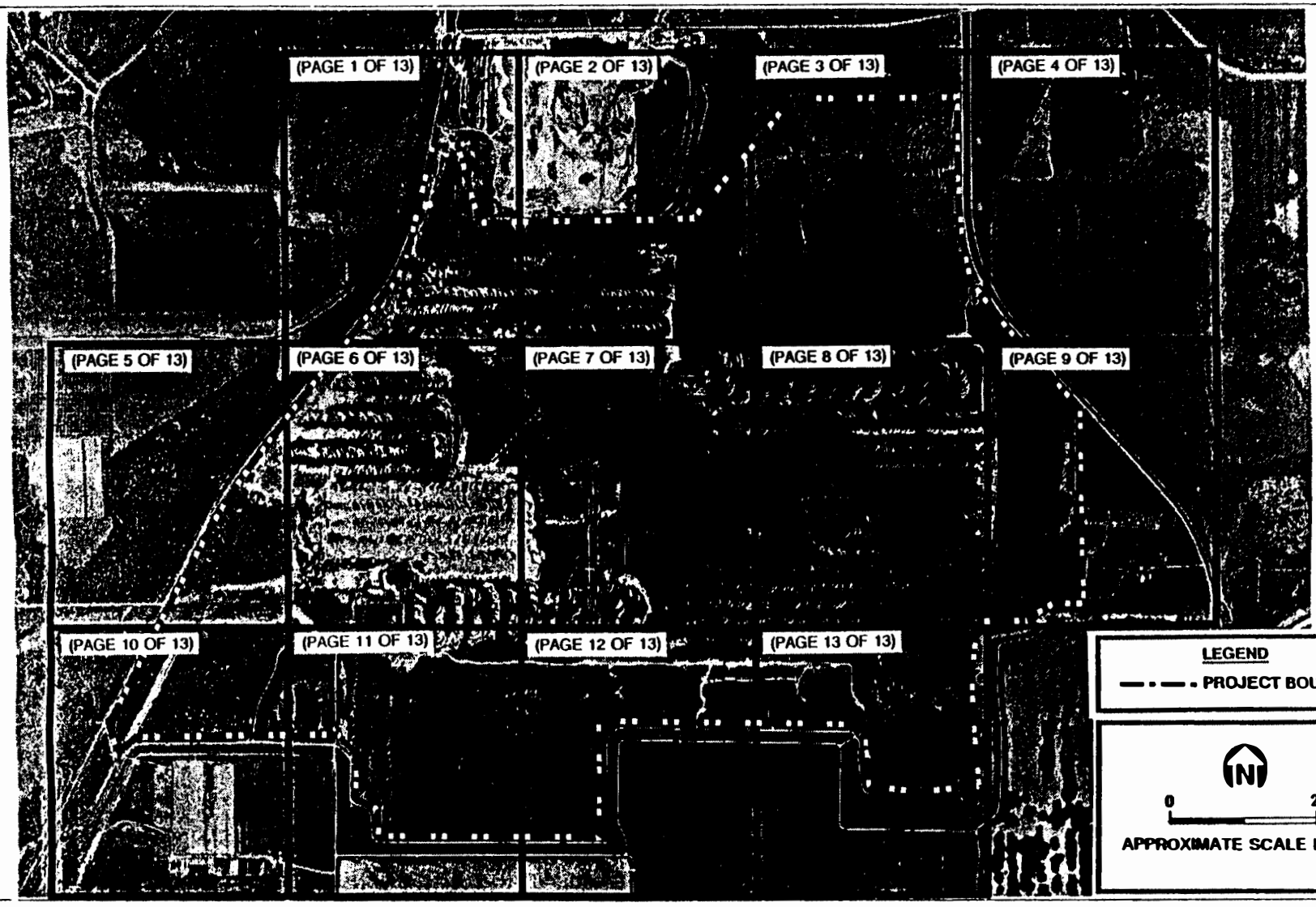


FIGURE 2.
KEY MAP FOR AERIAL PHOTOGRAPHS, POST-RECLAMATION TOPOGRAPHY AND POST-RECLAMATION VEGETATION
DREDGE AND FILL PERMIT APPLICATION
Sources: I.F. Rooks & Assoc. Inc.; ECT, 1992.

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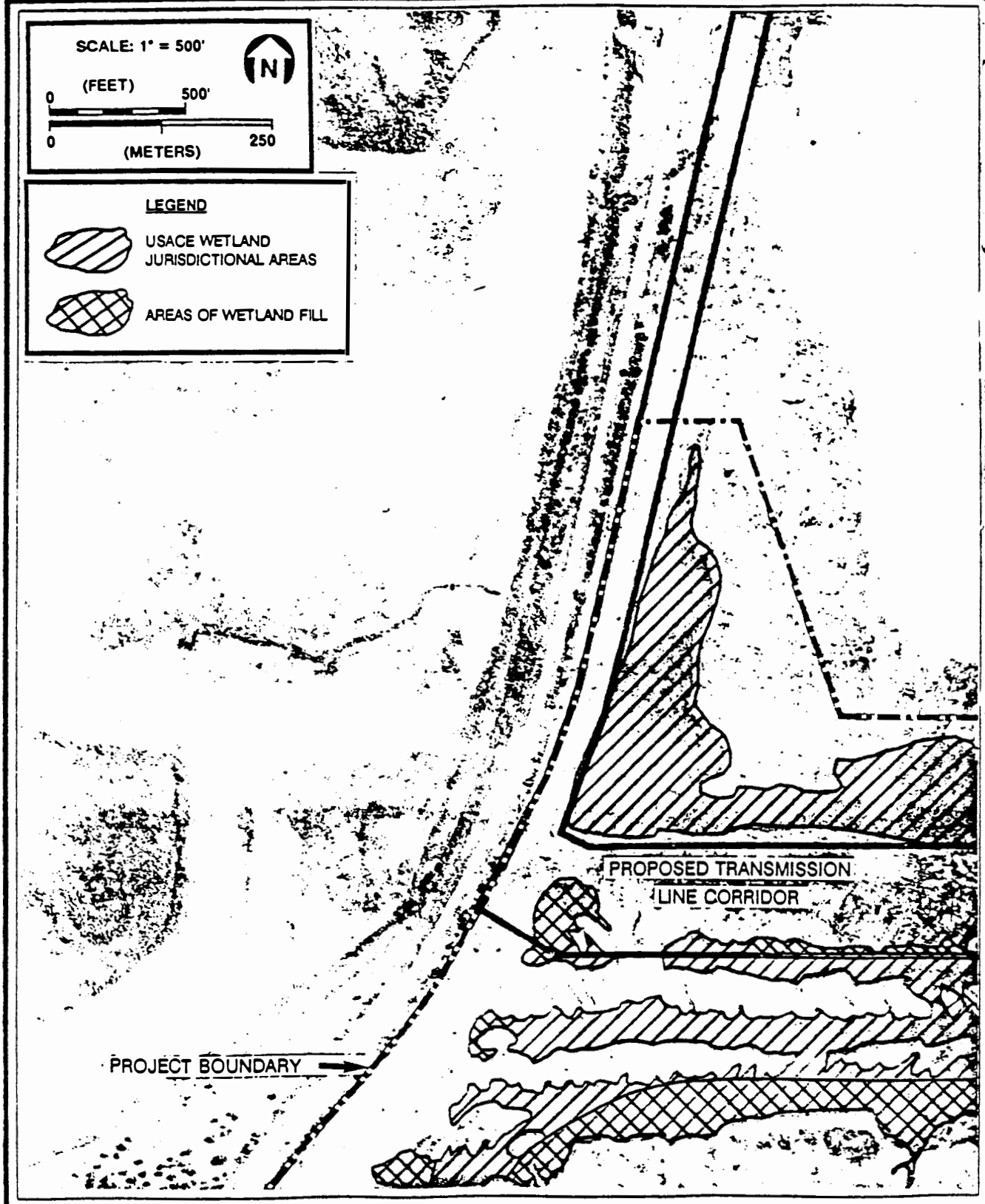

FIGURE 3.
AERIAL PHOTOGRAPHY WITH USACE WETLAND DELINEATIONS (PAGE 1 OF 13)
DREDGE AND FILL PERMIT APPLICATION
Sources: I.F. Rooks & Assoc. Inc.; ECT, 1992.

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FIGURE 3.
AERIAL PHOTOGRAPHY WITH USACE WETLAND DELINEATIONS (PAGE 2 OF 13)
DREDGE AND FILL PERMIT APPLICATION
Sources: I.F. Rooks & Assoc. Inc.; ECT, 1992.

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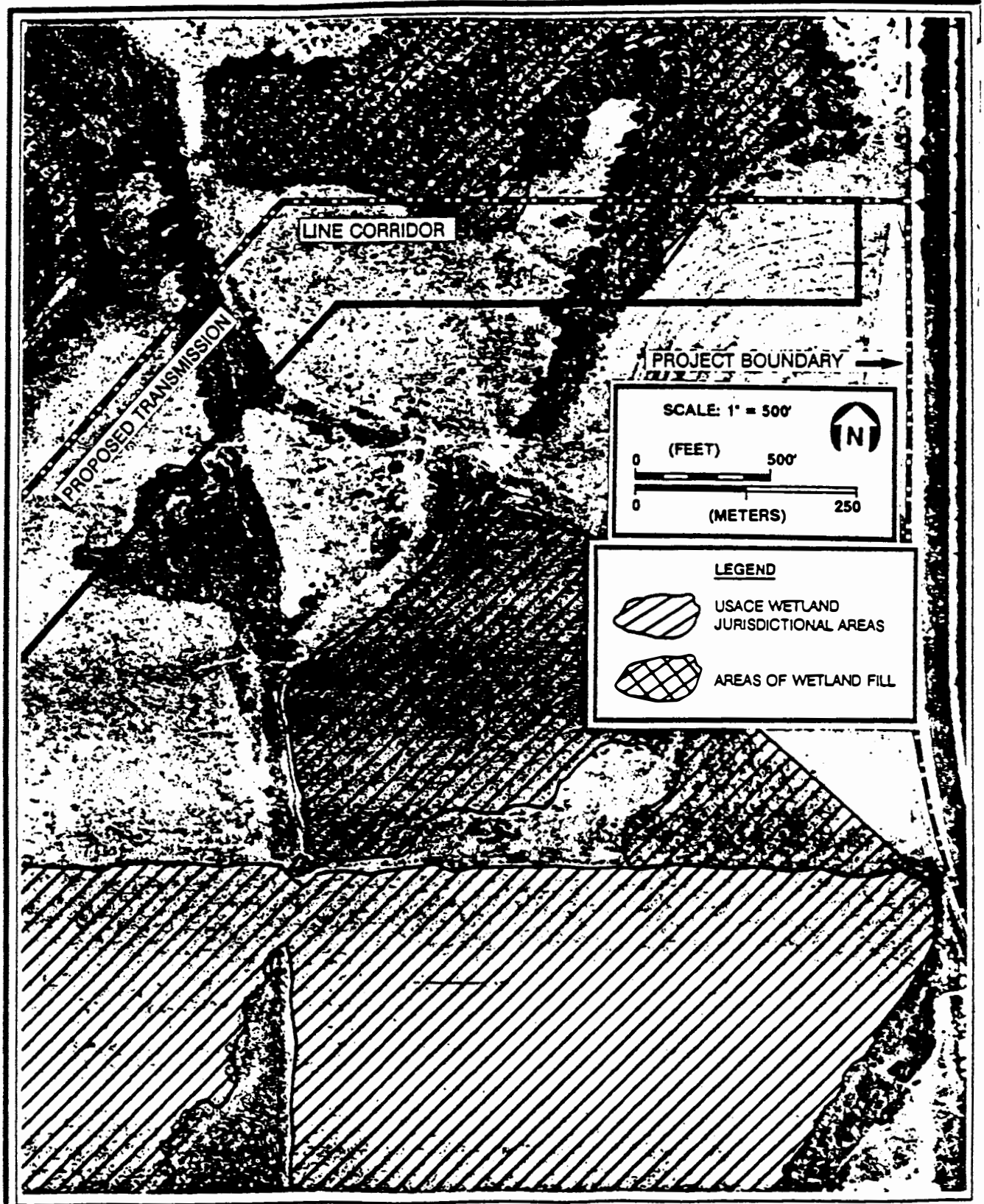

FIGURE 3.
AERIAL PHOTOGRAPHY WITH USACE WETLAND DELINEATIONS (PAGE 3 OF 13)
DREDGE AND FILL PERMIT APPLICATION
Sources: I.F. Rooks & Assoc. Inc.; ECT, 1992.

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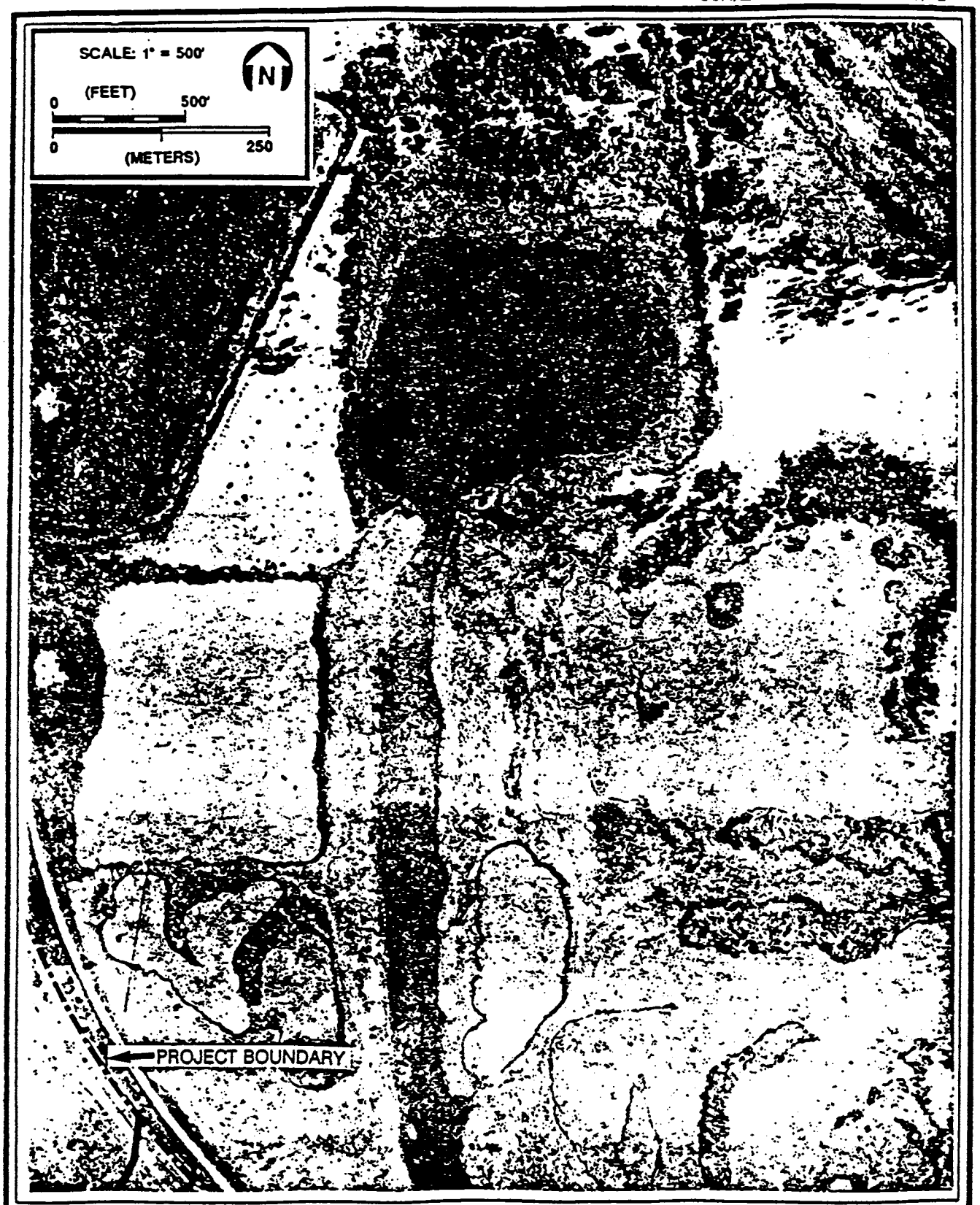

FIGURE 3.
AERIAL PHOTOGRAPHY WITH USACE WETLAND DELINEATIONS (PAGE 4 OF 13)
DREDGE AND FILL PERMIT APPLICATION
Sources: I.F. Rooks & Assoc. Inc.; ECT, 1992.

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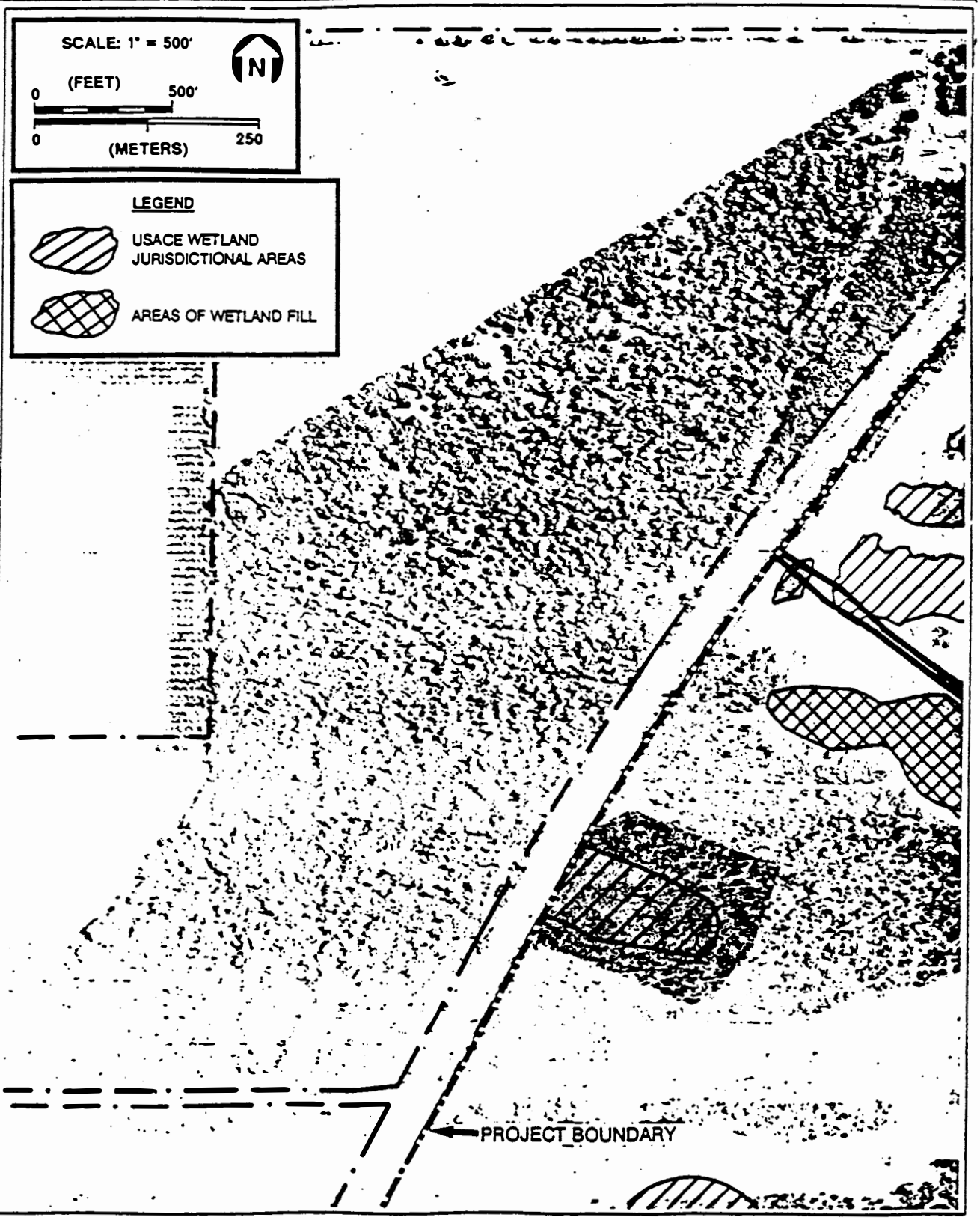

FIGURE 3.
AERIAL PHOTOGRAPHY WITH USACE WETLAND DELINEATIONS (PAGE 5 OF 13)
DREDGE AND FILL PERMIT APPLICATION
Sources: I.F. Rooks & Assoc. Inc.; ECT, 1992.

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FIGURE 3.
AERIAL PHOTOGRAPHY WITH USACE WETLAND DELINEATIONS (PAGE 6 OF 13)
DREDGE AND FILL PERMIT APPLICATION
Sources: I.F. Rooks & Assoc. Inc.; ECT, 1992.

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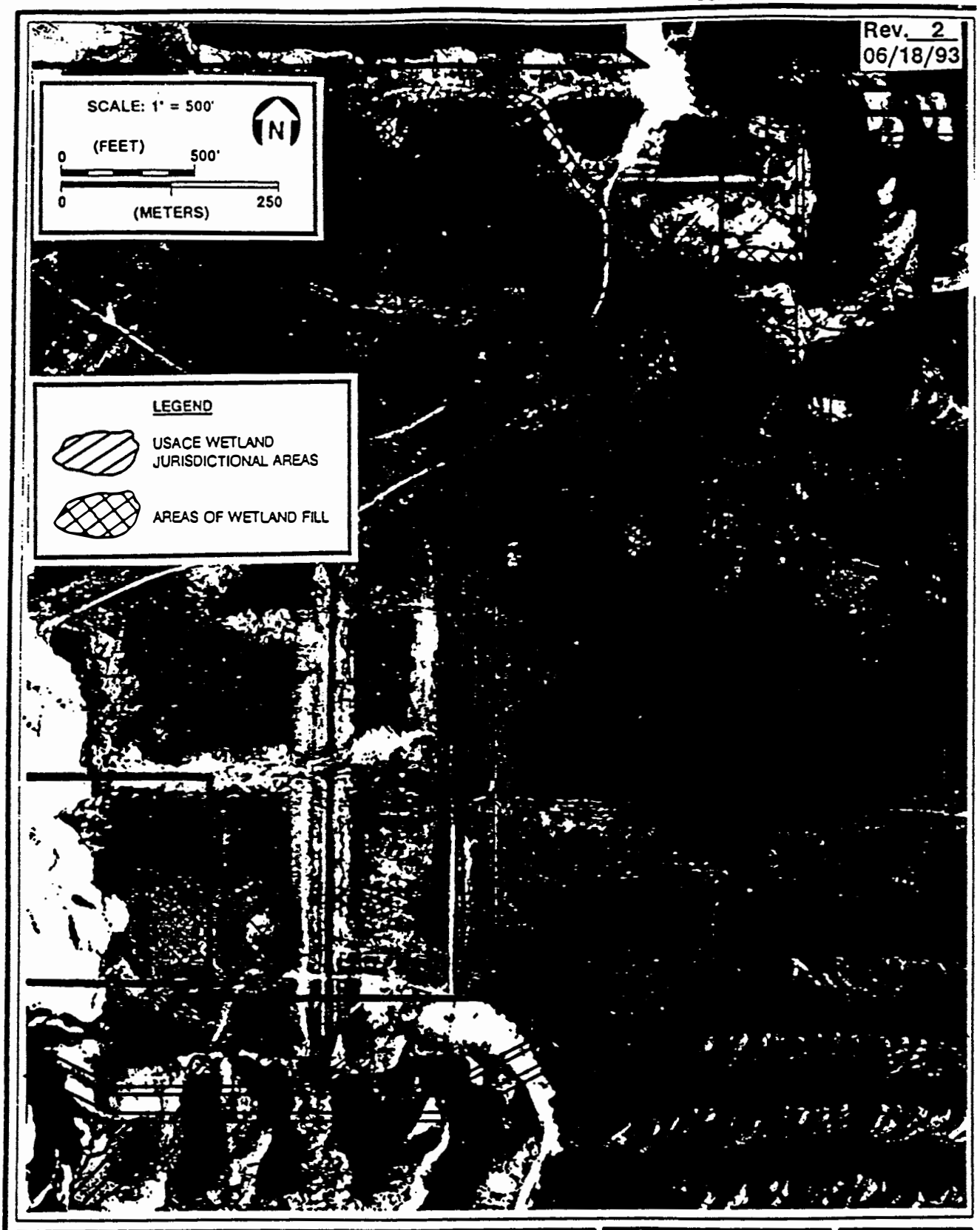

FIGURE 3.
AERIAL PHOTOGRAPHY WITH USACE WETLAND DELINEATIONS (PAGE 7 OF 13)
DREDGE AND FILL PERMIT APPLICATION
Sources: I.F. Rooks & Assoc. Inc.; ECT, 1992.

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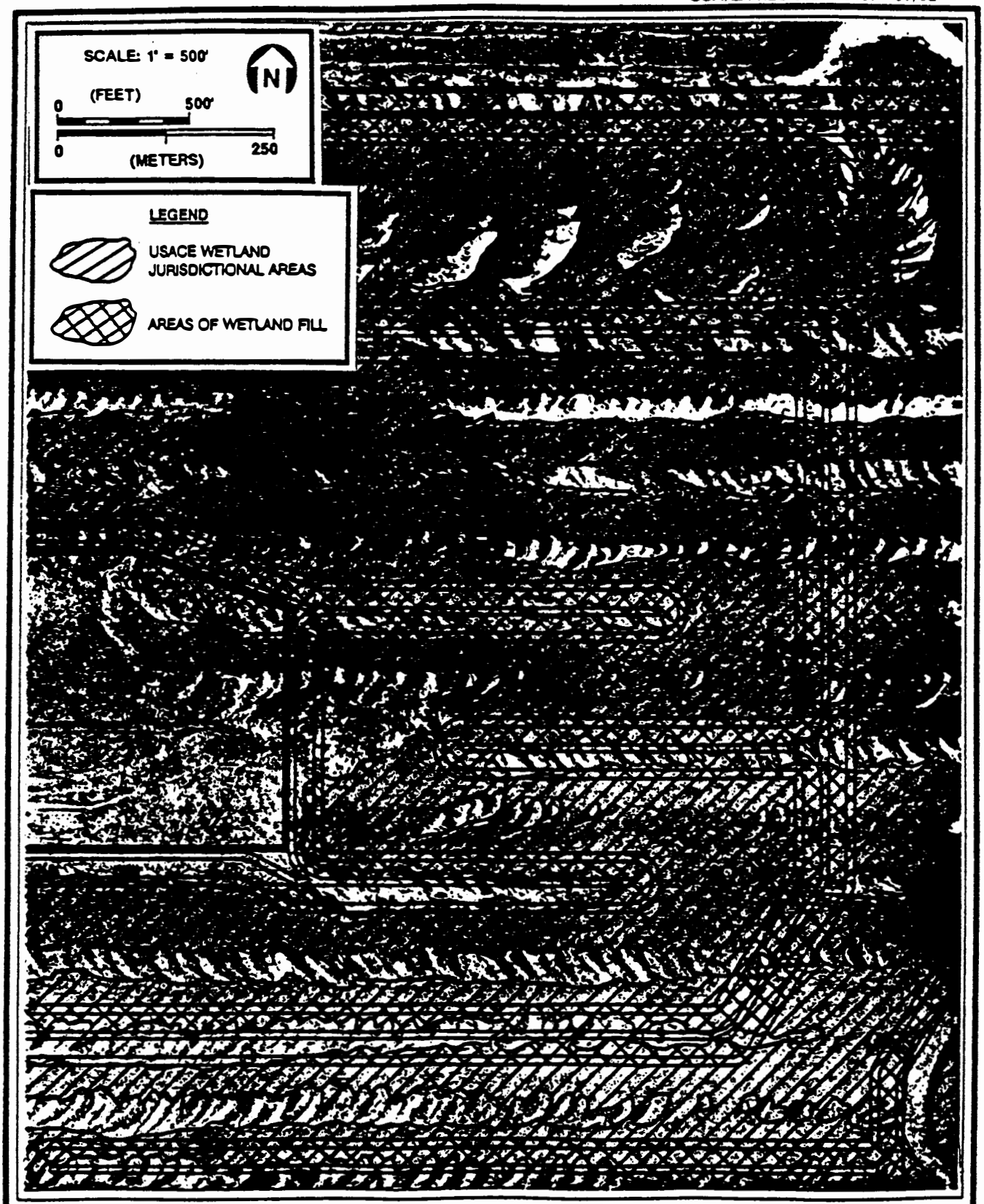

FIGURE 3.
AERIAL PHOTOGRAPHY WITH USACE WETLAND DELINEATIONS (PAGE 8 OF 13)
DREDGE AND FILL PERMIT APPLICATION
Sources: I.F. Rooks & Assoc. Inc.; ECT, 1992.

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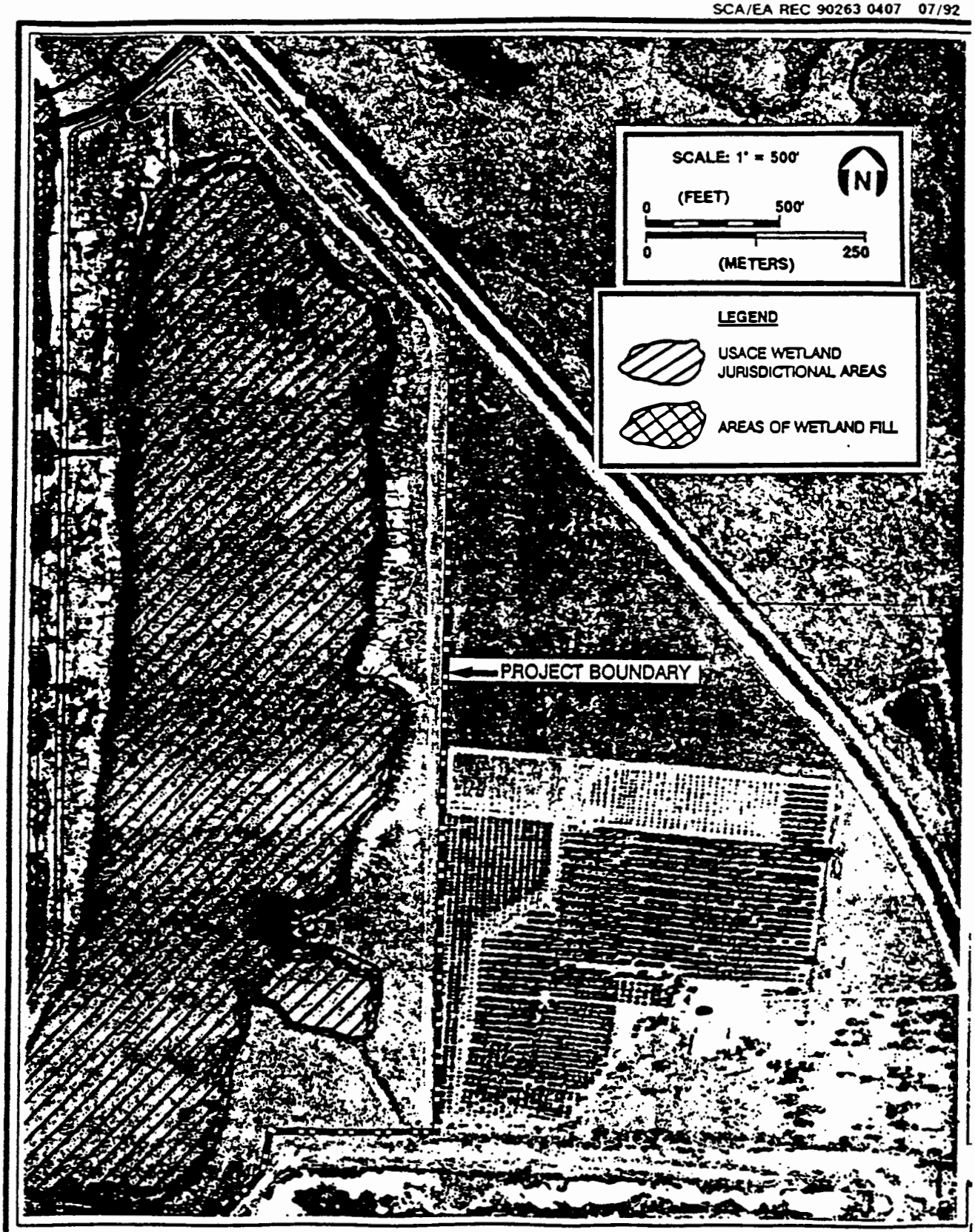

FIGURE 3.
AERIAL PHOTOGRAPHY WITH USACE WETLAND DELINEATIONS (PAGE 9 OF 13)
DREDGE AND FILL PERMIT APPLICATION
Source: I.F. Rooks & Assoc. Inc.; ECT, 1992.

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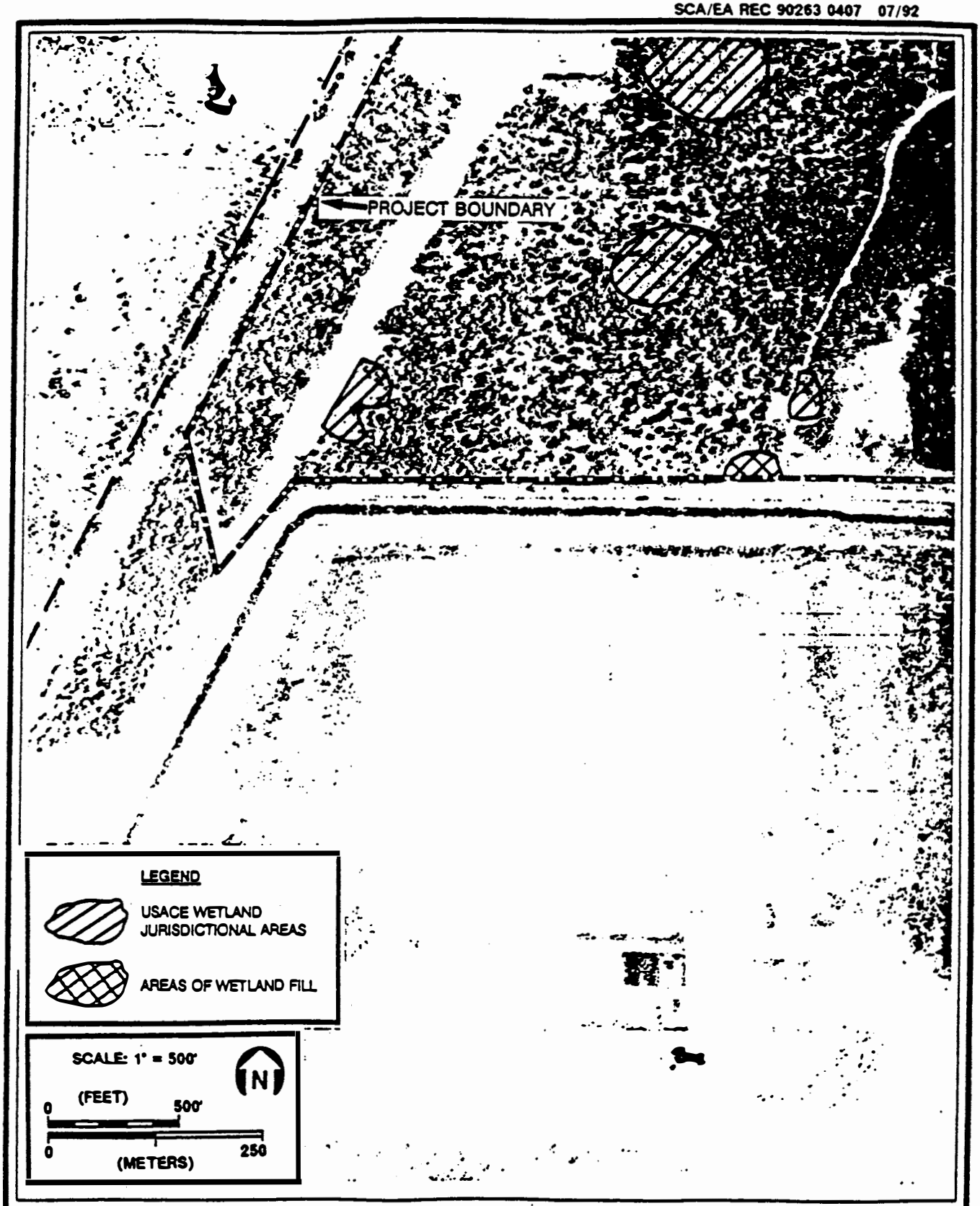

FIGURE 3.
AERIAL PHOTOGRAPHY WITH USACE WETLAND DELINEATIONS (PAGE 10 OF 13)
DREDGE AND FILL PERMIT APPLICATION
Sources: LF. Rooks & Assoc. Inc.; ECT, 1992.

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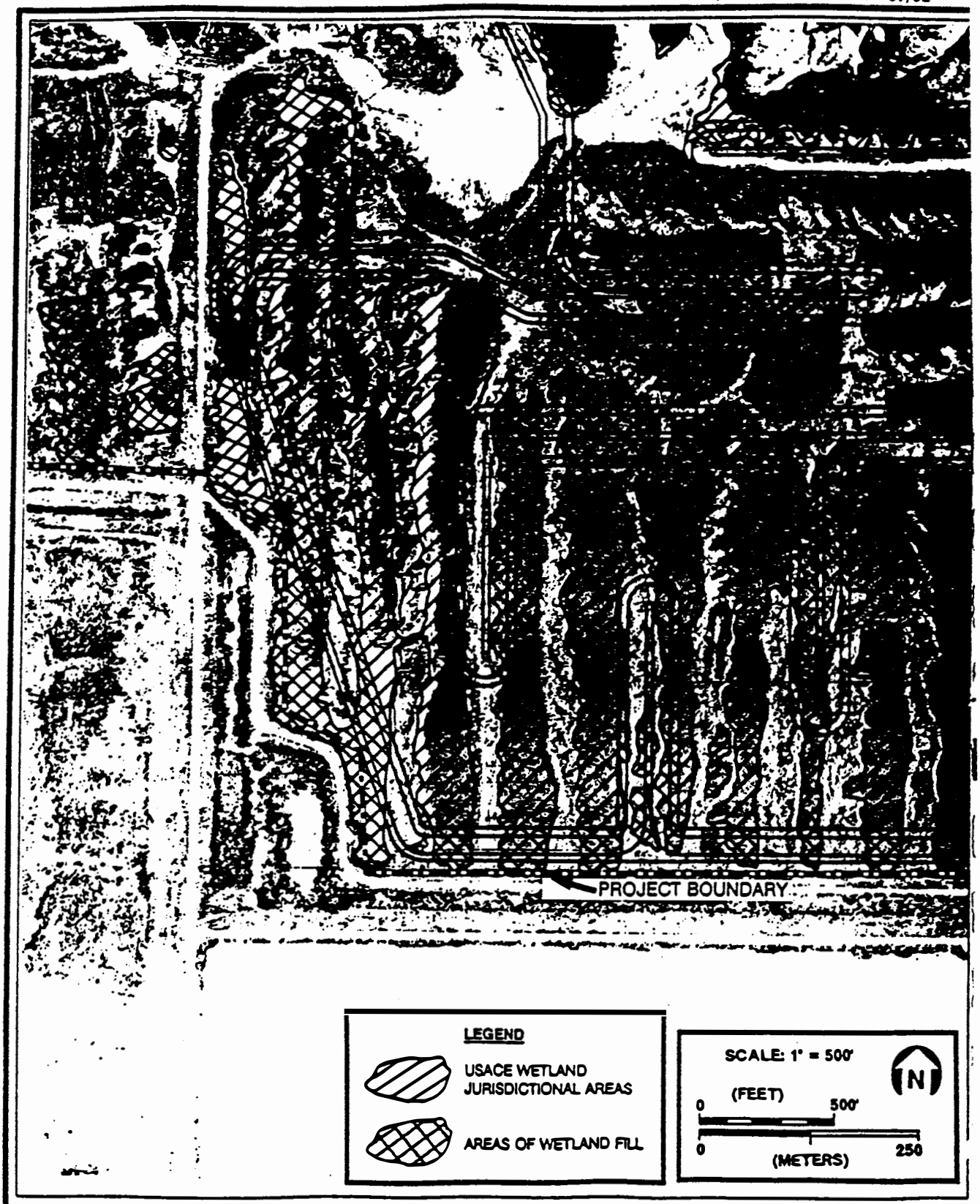

FIGURE 3.
AERIAL PHOTOGRAPHY WITH USACE WETLAND DELINEATIONS (PAGE 11 OF 13)
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Sources: I.F. Rooks & Assoc. Inc.; ECT, 1992.

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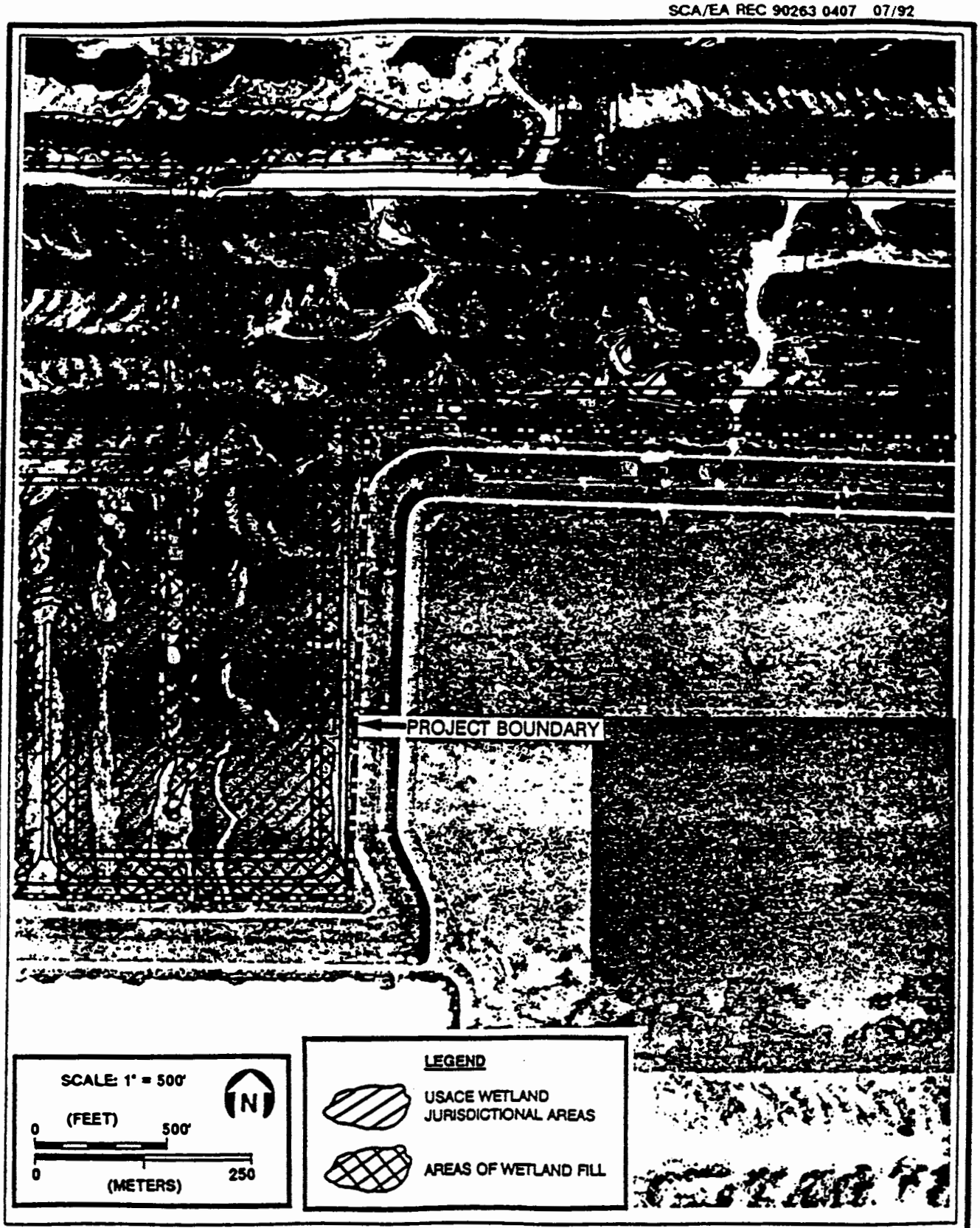

FIGURE 3.
AERIAL PHOTOGRAPHY WITH USACE WETLAND DELINEATIONS (PAGE 12 OF 13)
DREDGE AND FILL PERMIT APPLICATION
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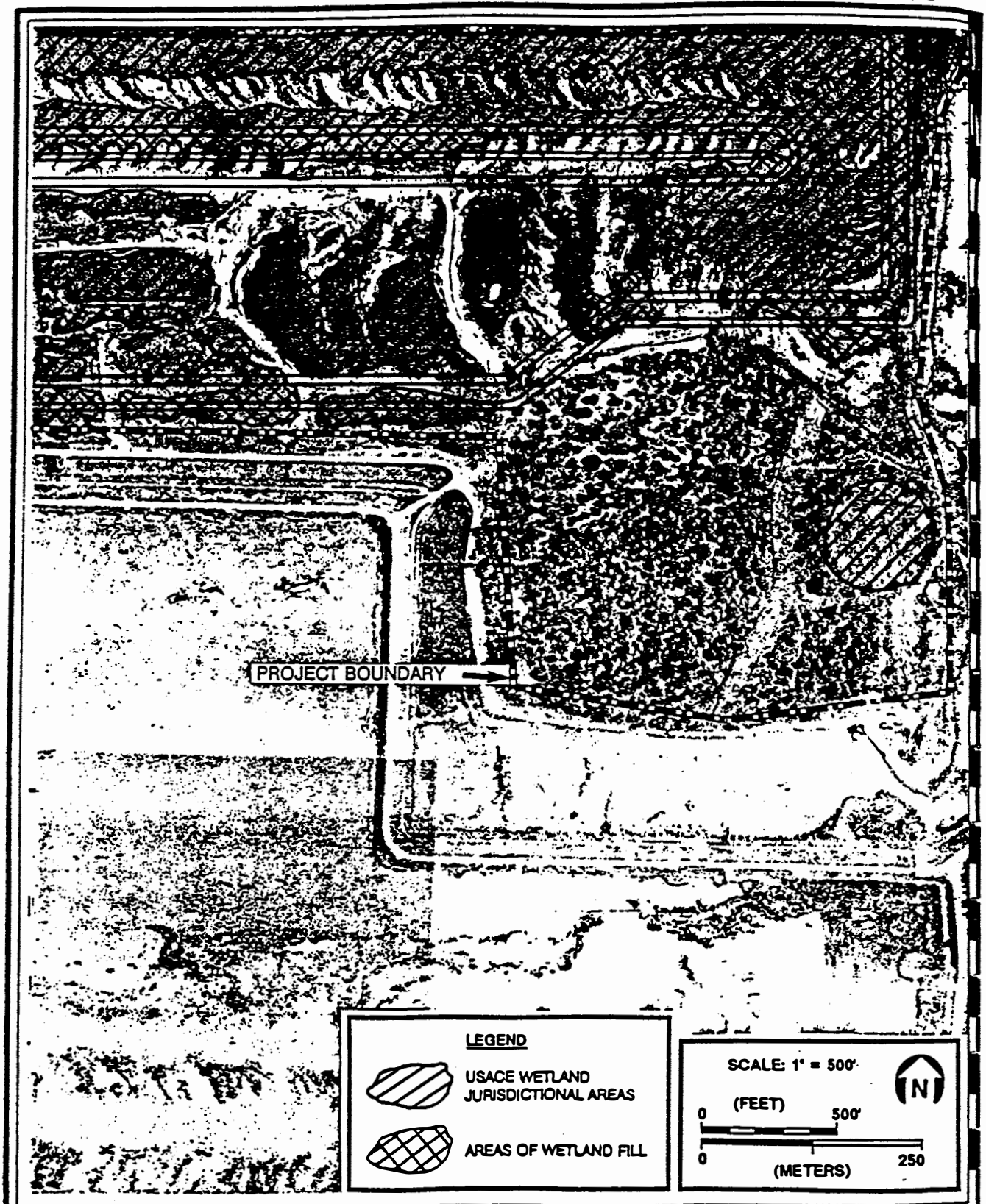

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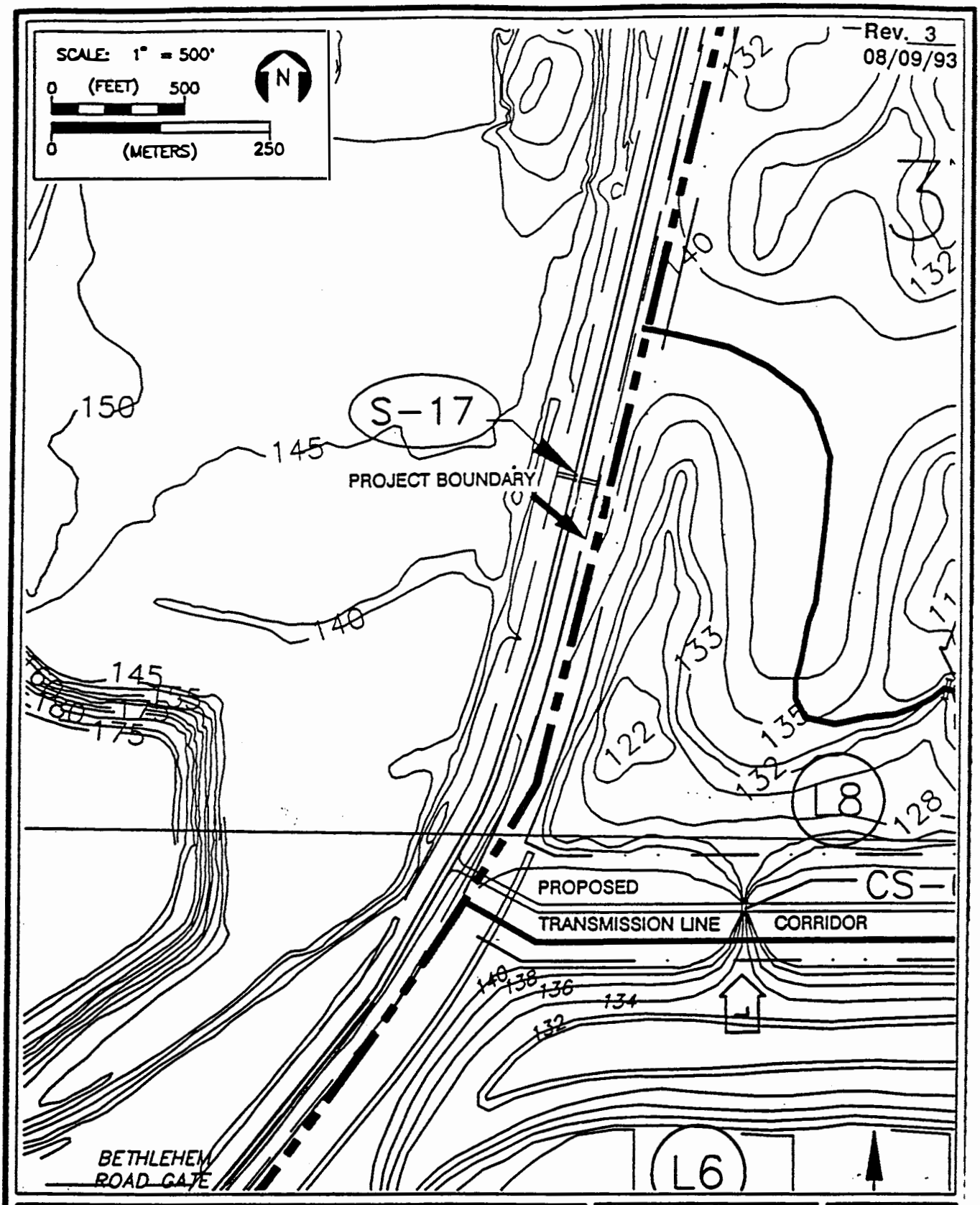

FIGURE 4. (PAGE 1 OF 13)

POSTRECLAMATION TOPOGRAPHY
DREDGE-AND-FILL PERMIT APPLICATION
Source: ECT, 1992.

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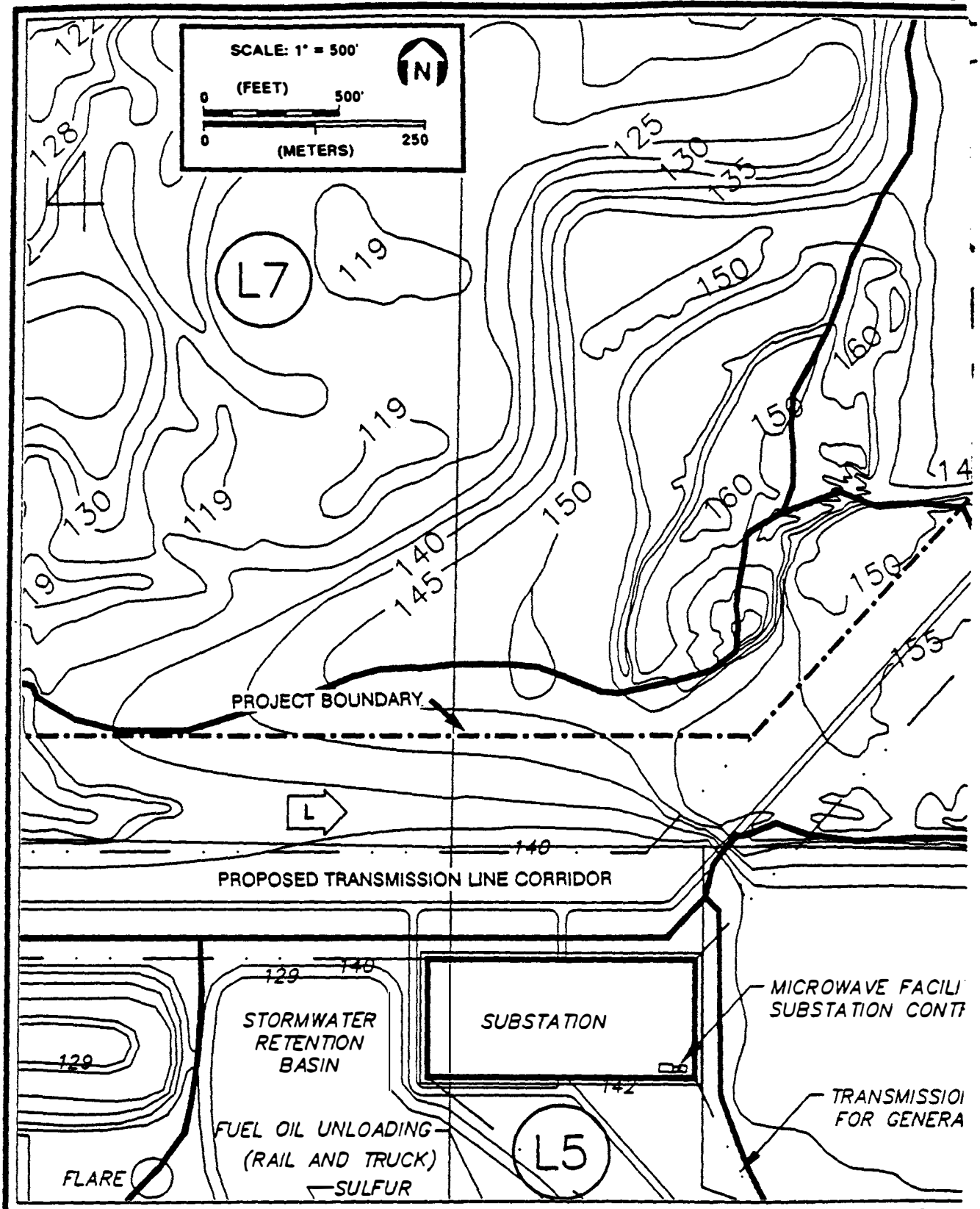

FIGURE 4.
POST-RECLAMATION TOPOGRAPHY (PAGE 2 OF 13)
DREDGE AND FILL PERMIT APPLICATION

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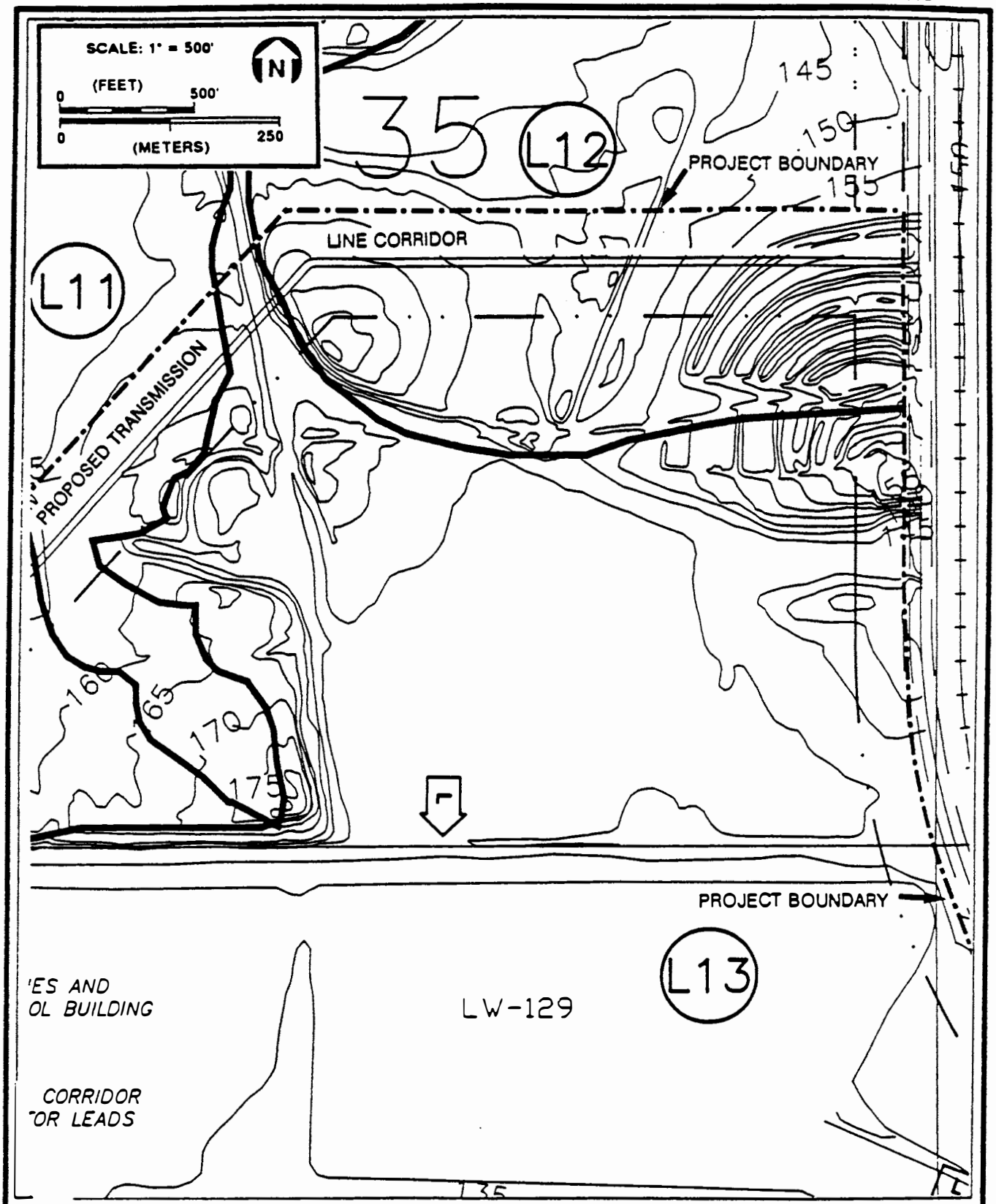

FIGURE 4.
POST-RECLAMATION TOPOGRAPHY (PAGE 3 OF 13)
DREDGE AND FILL PERMIT APPLICATION

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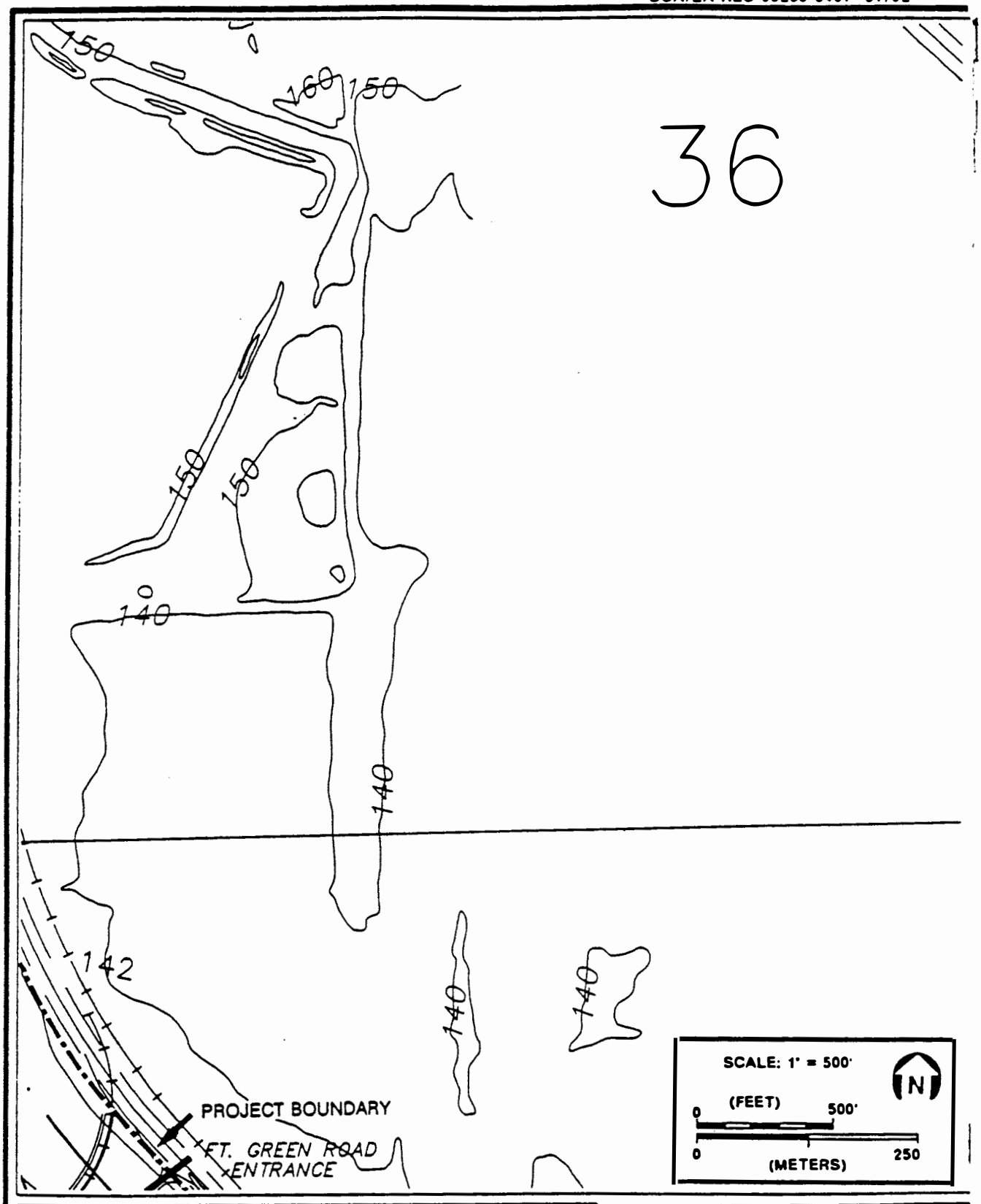

FIGURE 4.
POST-RECLAMATION TOPOGRAPHY (PAGE 4 OF 13)
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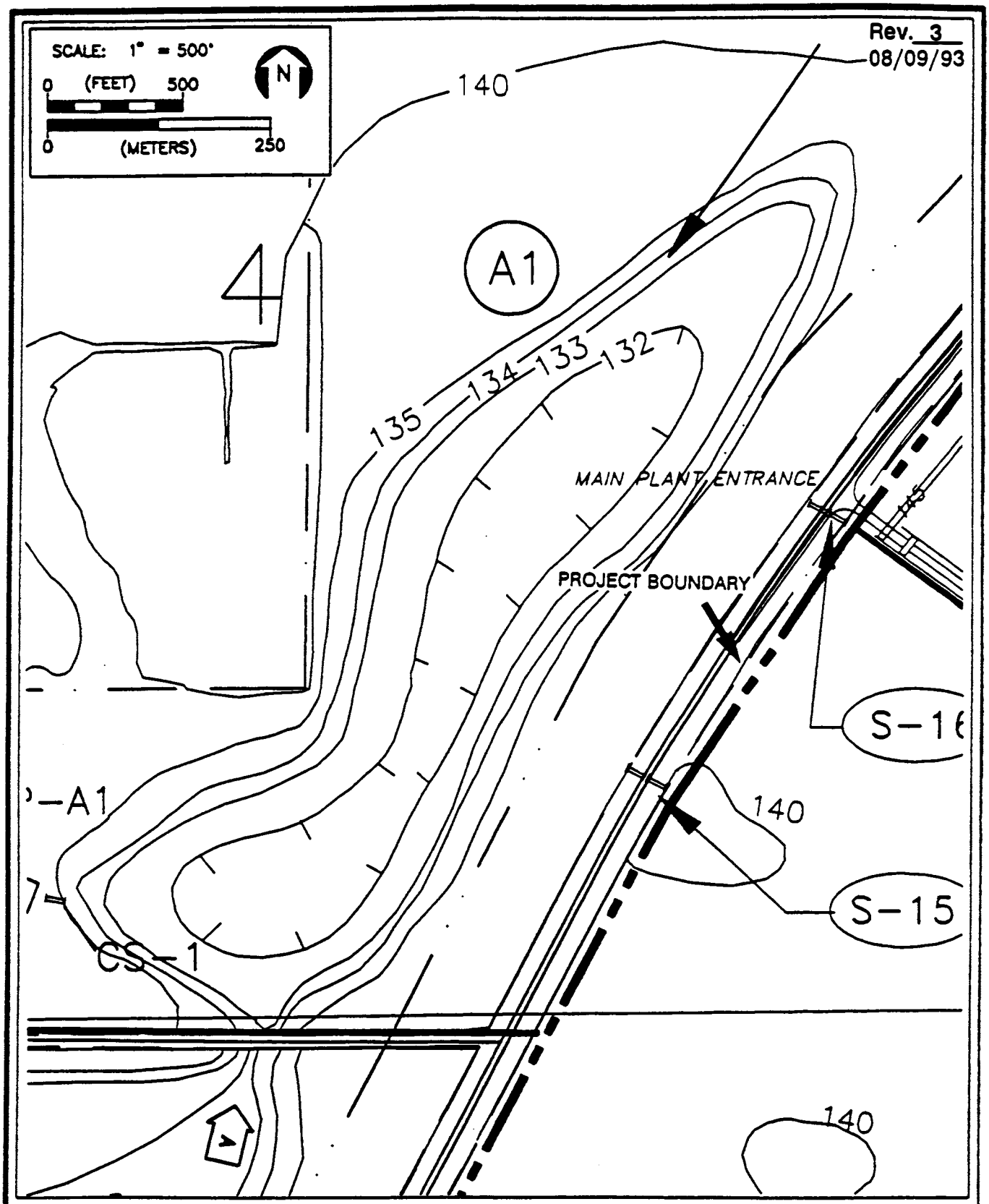

FIGURE 4. (PAGE 5 OF 13)

POSTRECLAMATION TOPOGRAPHY
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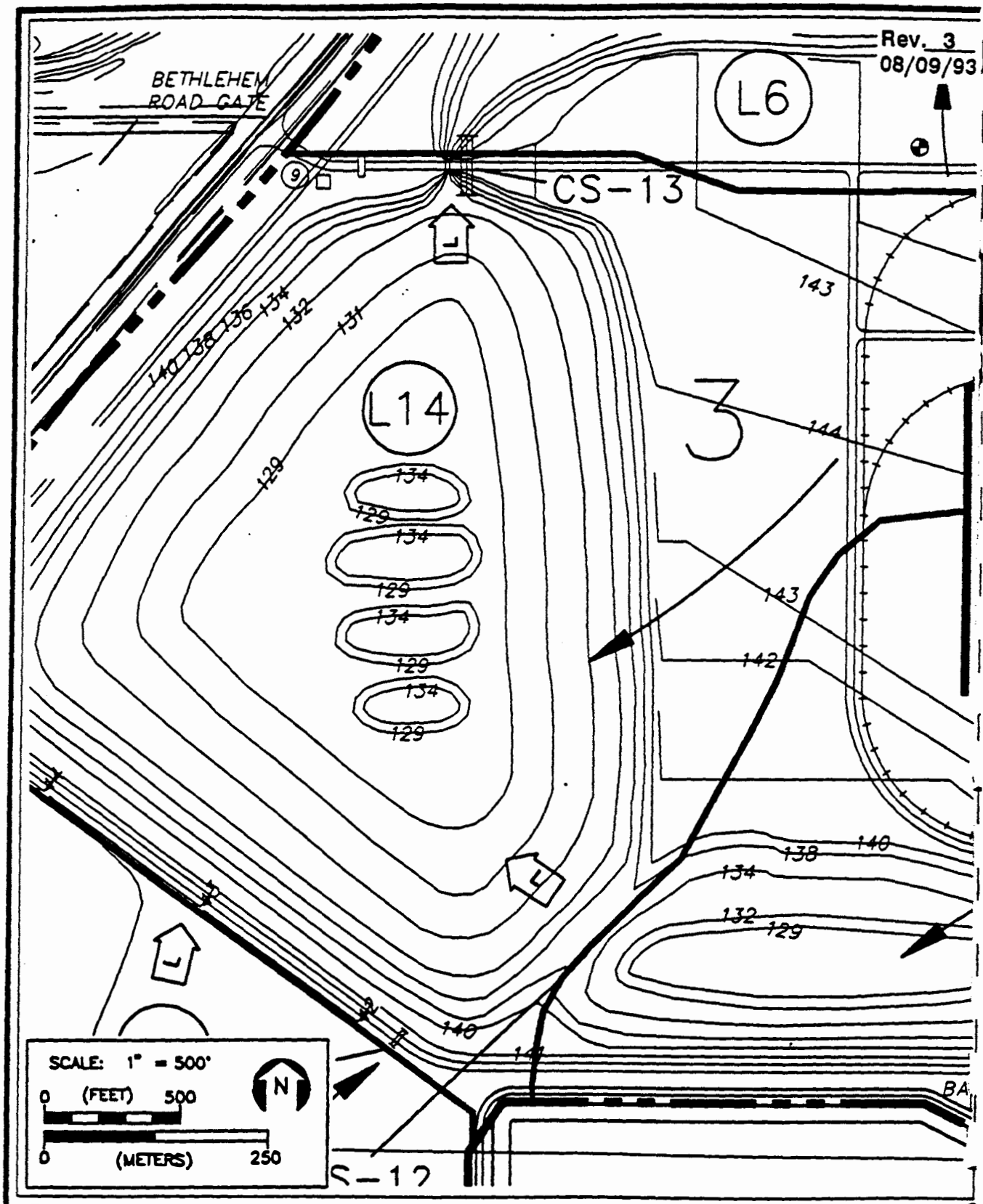

FIGURE 4. (PAGE 6 OF 13)

POSTRECLAMATION TOPOGRAPHY
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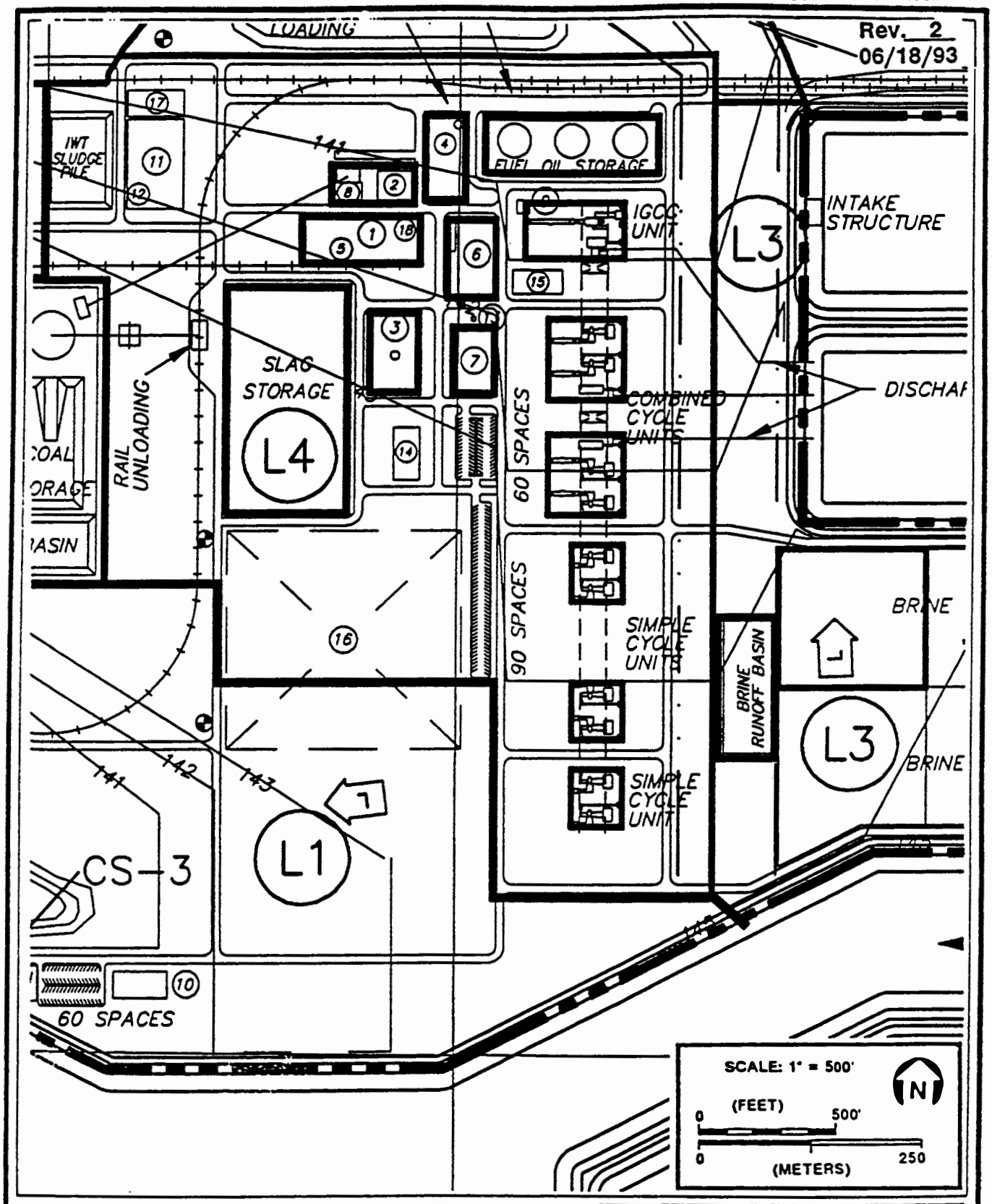

FIGURE 4.
POST-RECLAMATION TOPOGRAPHY (PAGE 7 OF 13)
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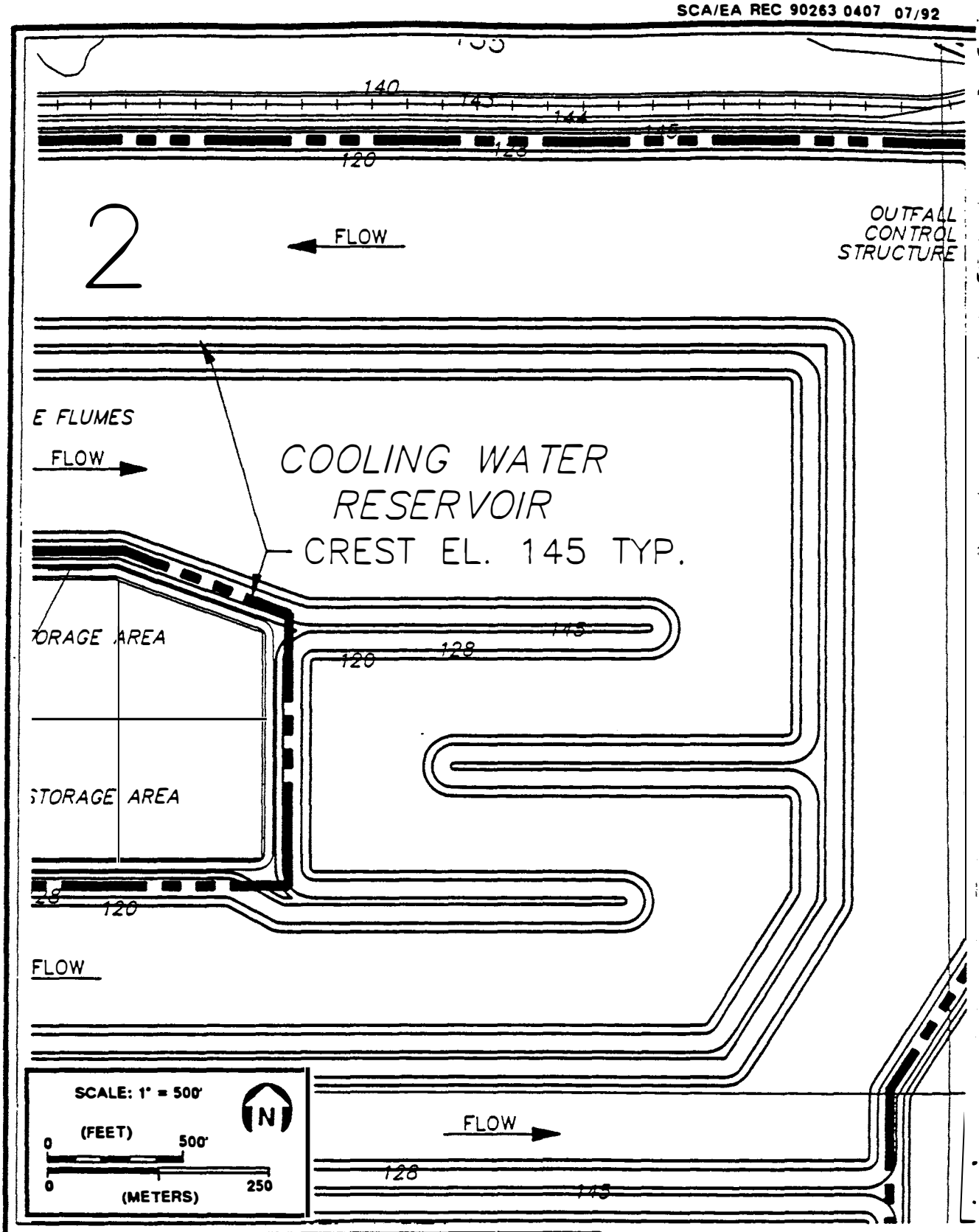

FIGURE 4.
POST-RECLAMATION TOPOGRAPHY (PAGE 8 OF 13)
DREDGE AND FILL PERMIT APPLICATION

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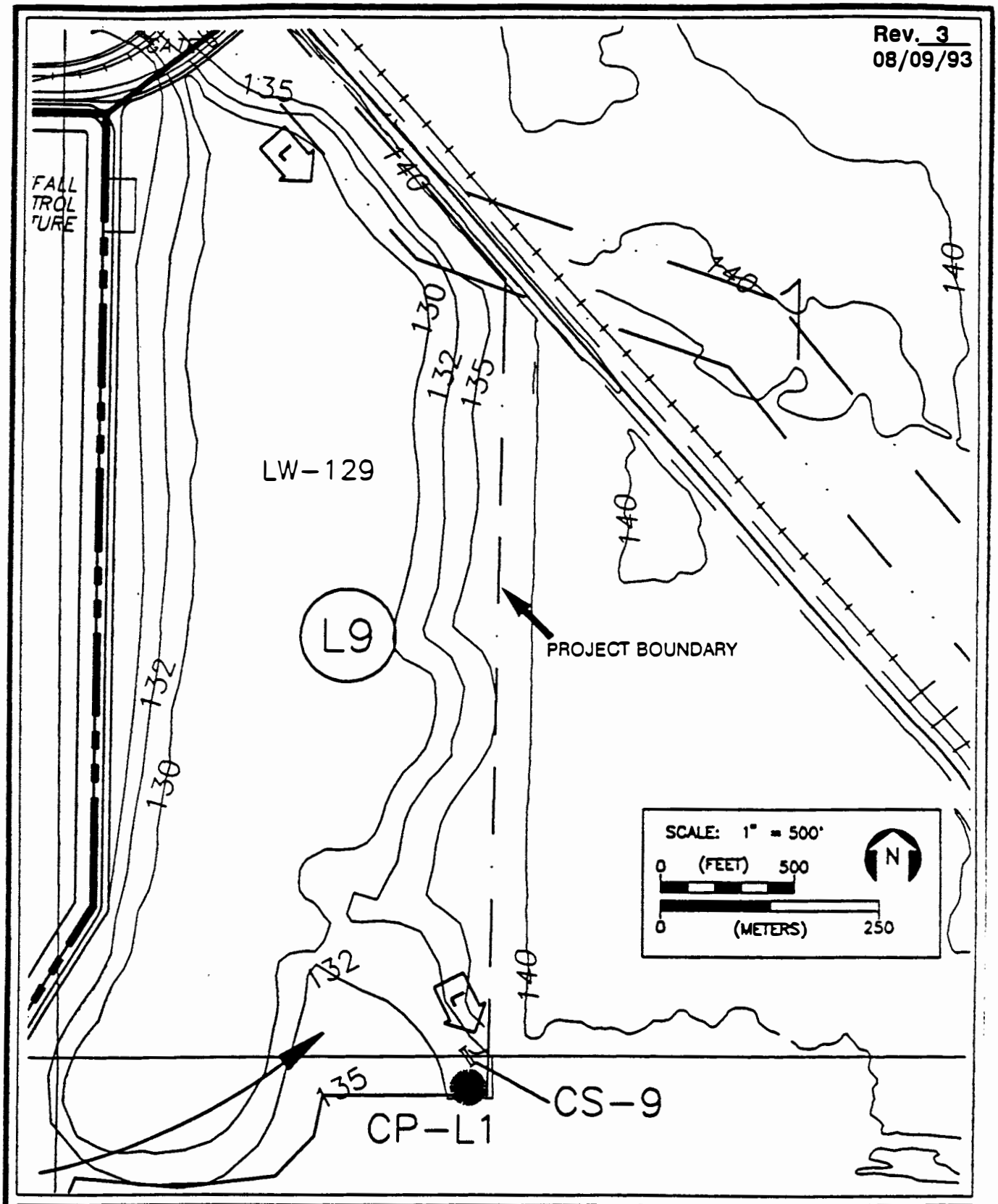

FIGURE 4. (PAGE 9 OF 13)

POSTRECLAMATION TOPOGRAPHY
DREDGE-AND-FILL PERMIT APPLICATION
Source: ECT, 1992.

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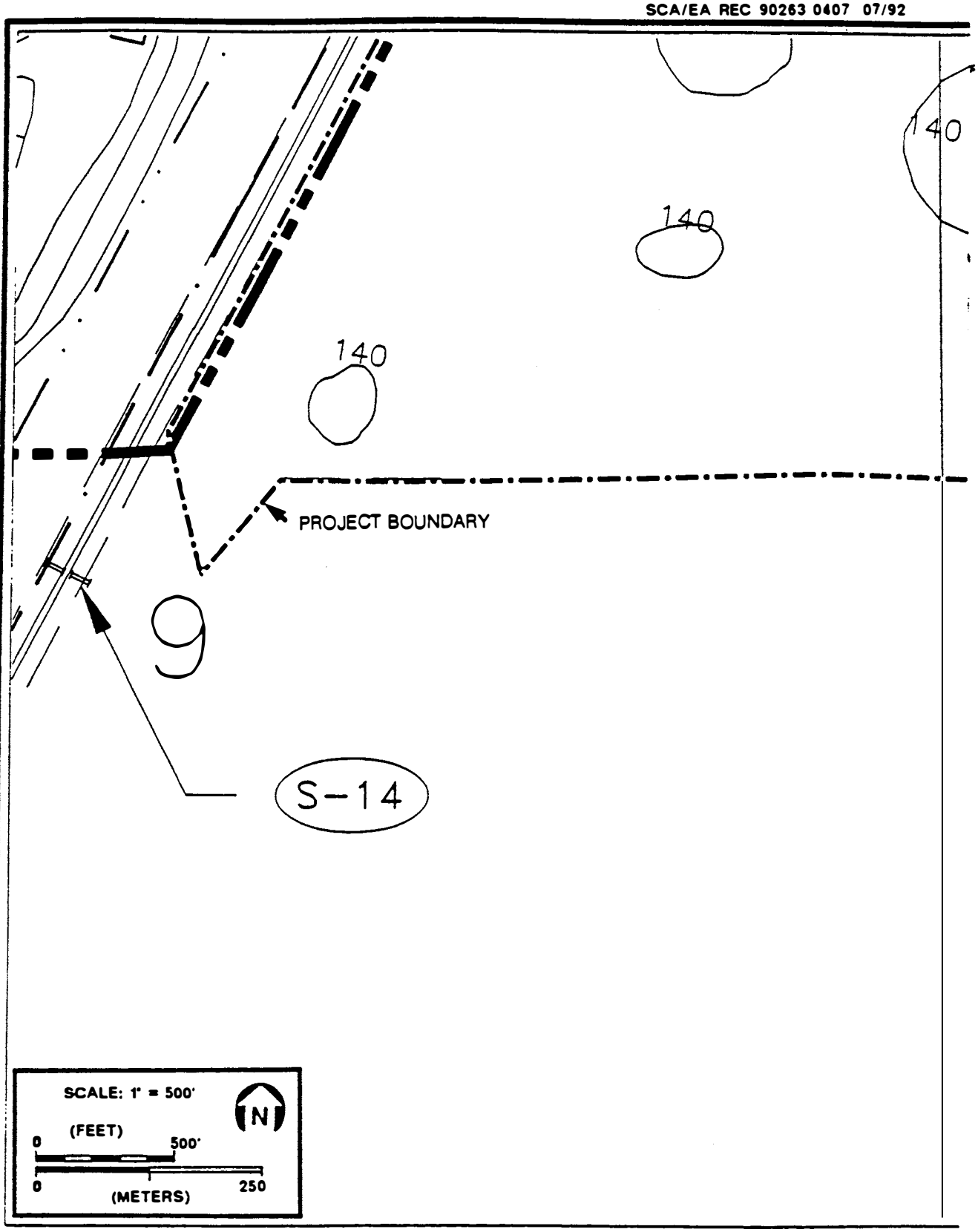

FIGURE 4.
POST-RECLAMATION TOPOGRAPHY (PAGE 10 OF 13)
DREDGE AND FILL PERMIT APPLICATION

Source: ECT, 1992.

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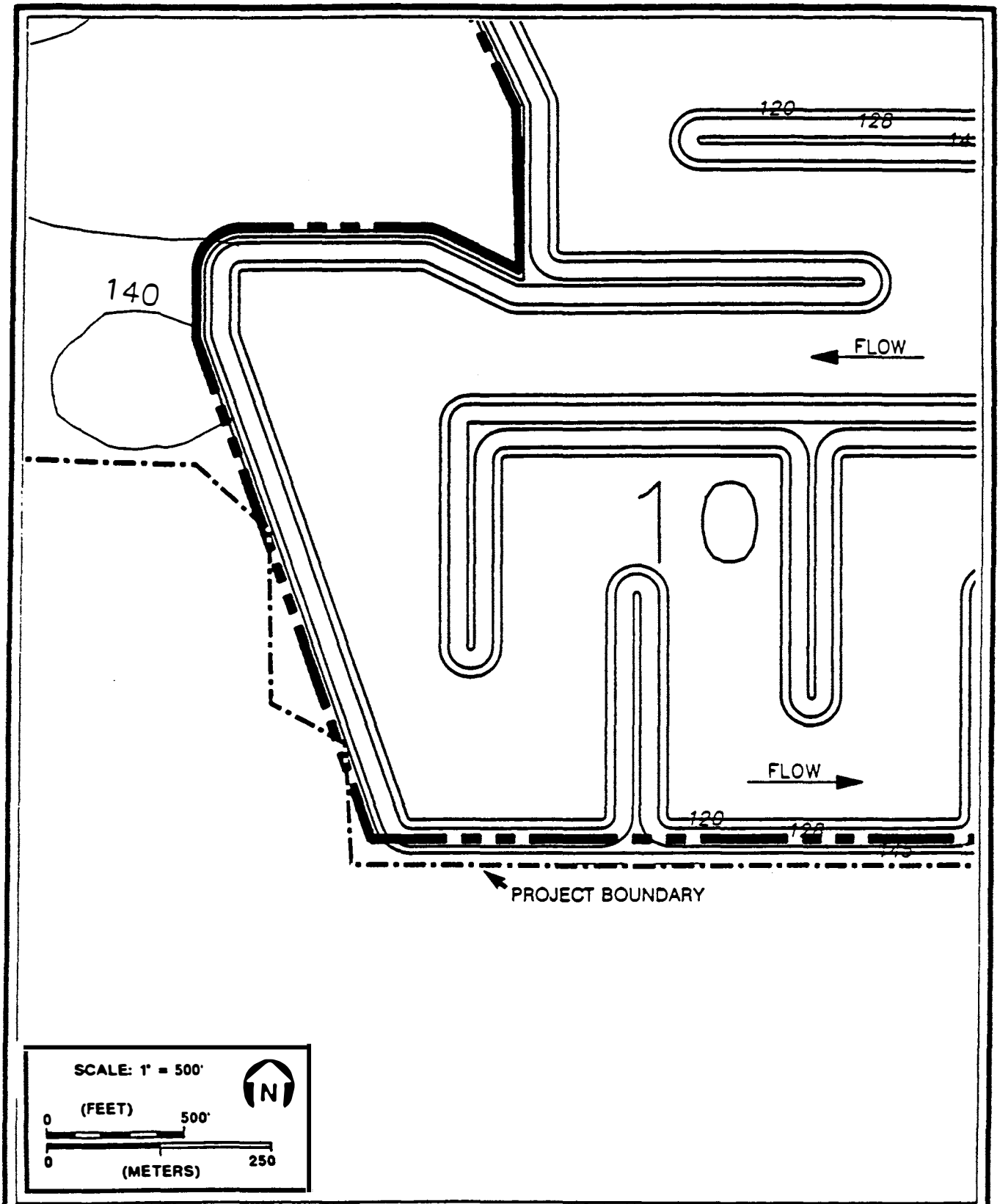

FIGURE 4.
POST-RECLAMATION TOPOGRAPHY (PAGE 11 OF 13)
DREDGE AND FILL PERMIT APPLICATION

Source: ECT, 1992.

TAMPA ELECTRIC
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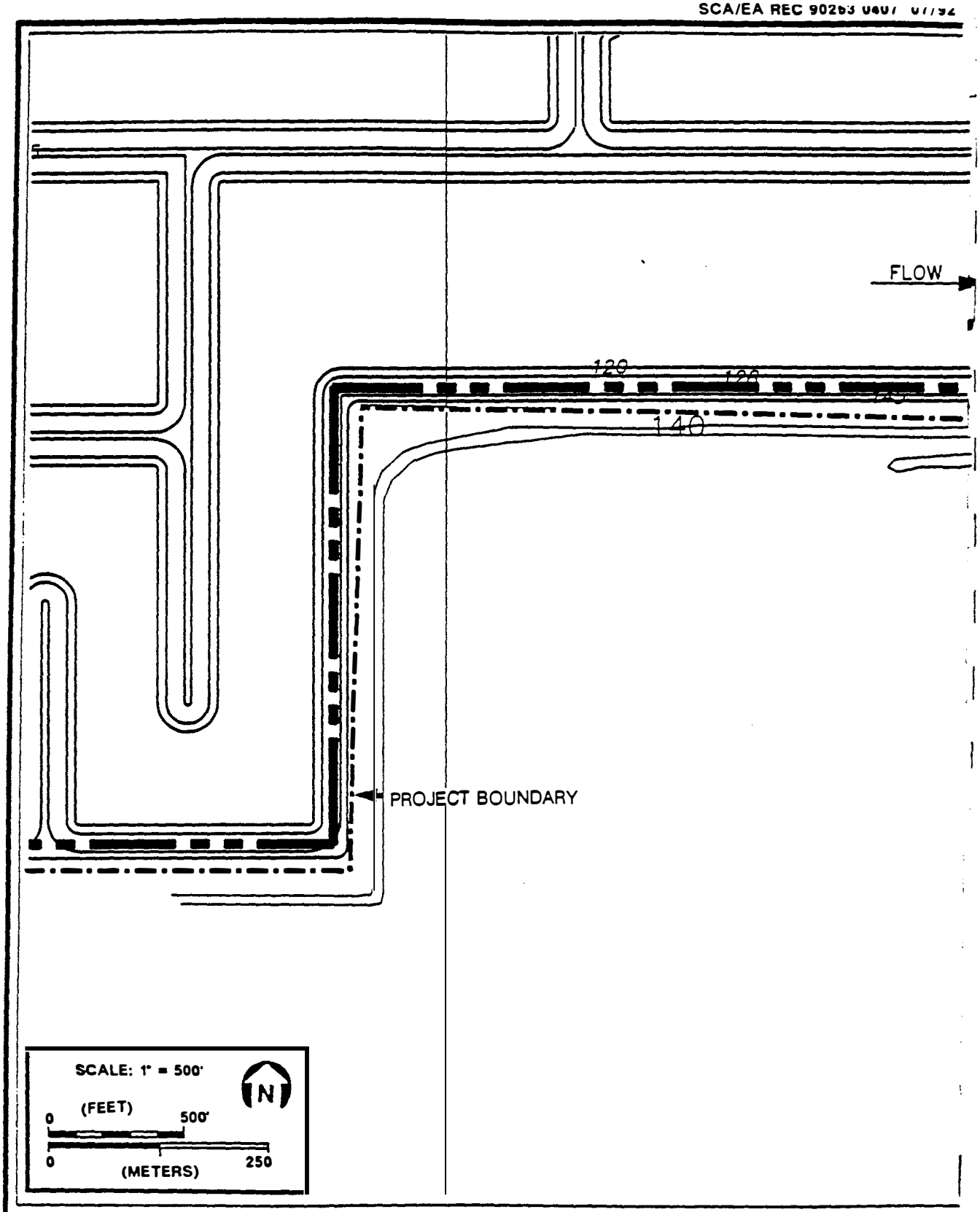

FIGURE 4.
POST-RECLAMATION TOPOGRAPHY (PAGE 12 OF 13)
DREDGE AND FILL PERMIT APPLICATION

Source: ECT, 1992.

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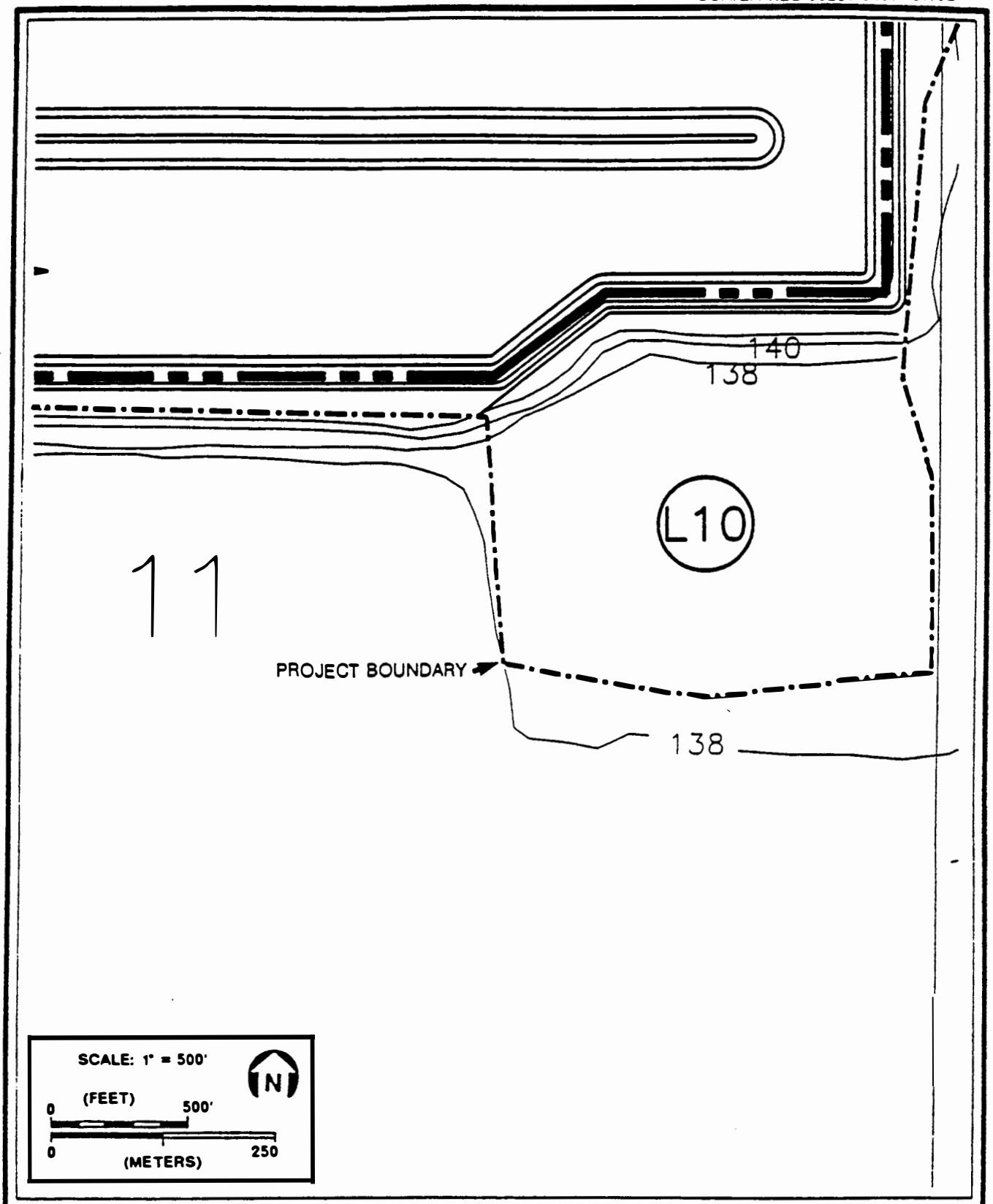

FIGURE 4.
POST-RECLAMATION TOPOGRAPHY (PAGE 13 OF 13)
DREDGE AND FILL PERMIT APPLICATION

Source: ECT, 1992.

TAMPA ELECTRIC
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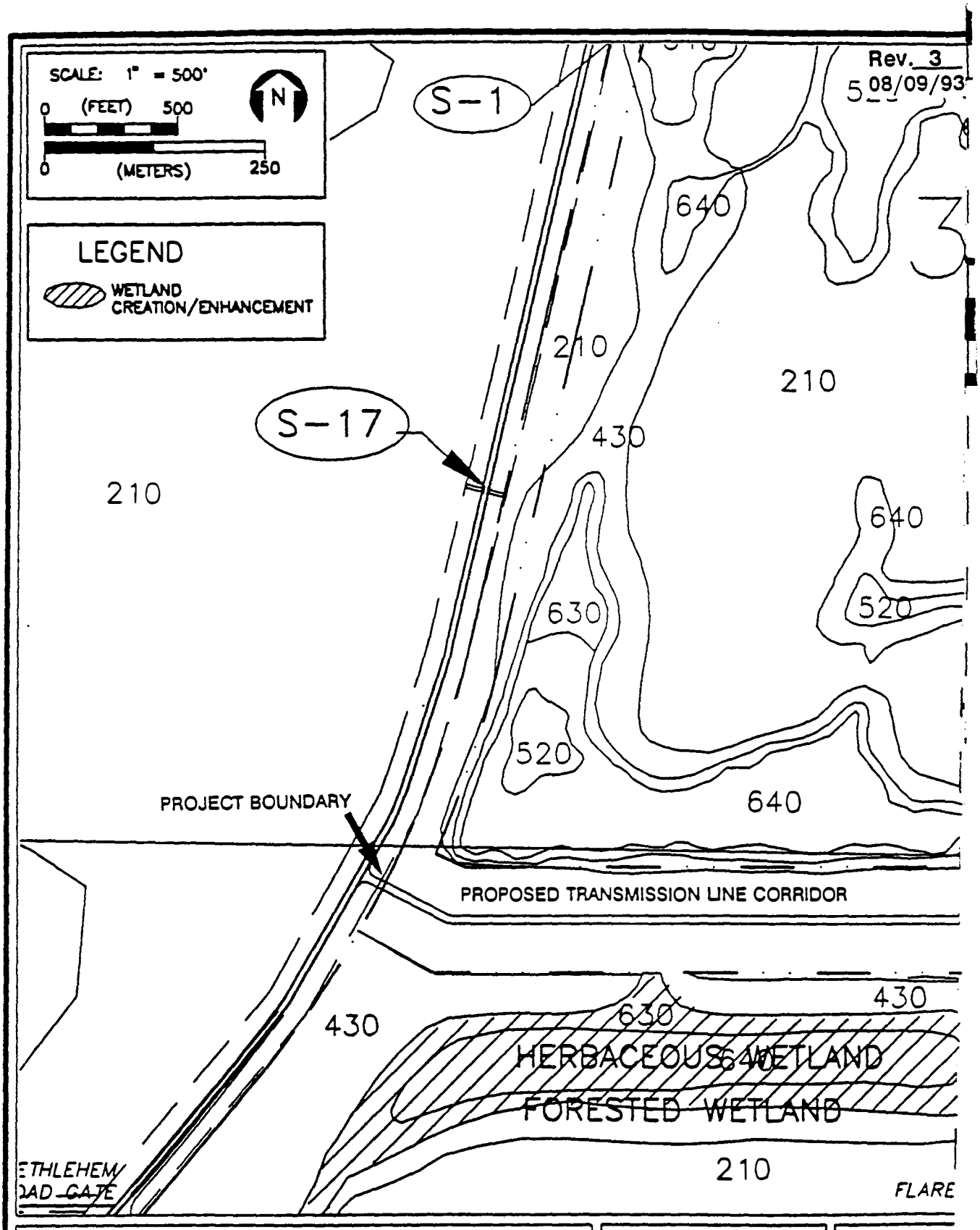

FIGURE 5. (PAGE 1 OF 13)
POSTRECLAMATION LAND USE WITH WETLAND CREATION/ENHANCEMENT AREAS DEPICTED
DREDGE-AND-FILL PERMIT APPLICATION
Source: ECT, 1992.

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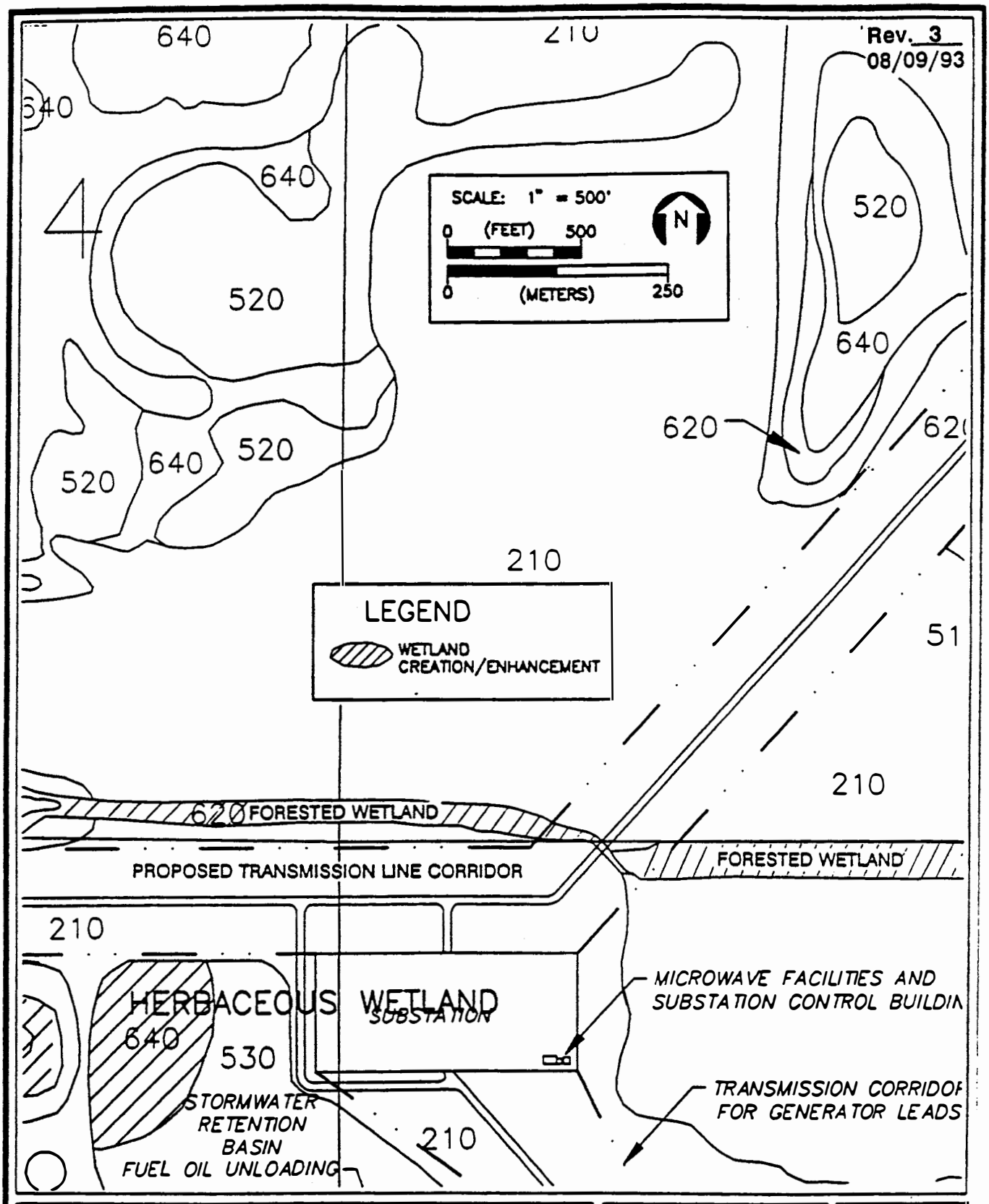

FIGURE 5. (PAGE 2 OF 13)
POSTRECLAMATION LAND USE WITH WETLAND CREATION/ENHANCEMENT AREAS DEPICTED
DREDGE-AND-FILL PERMIT APPLICATION
Source: ECT, 1992.

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POLK POWER STATION

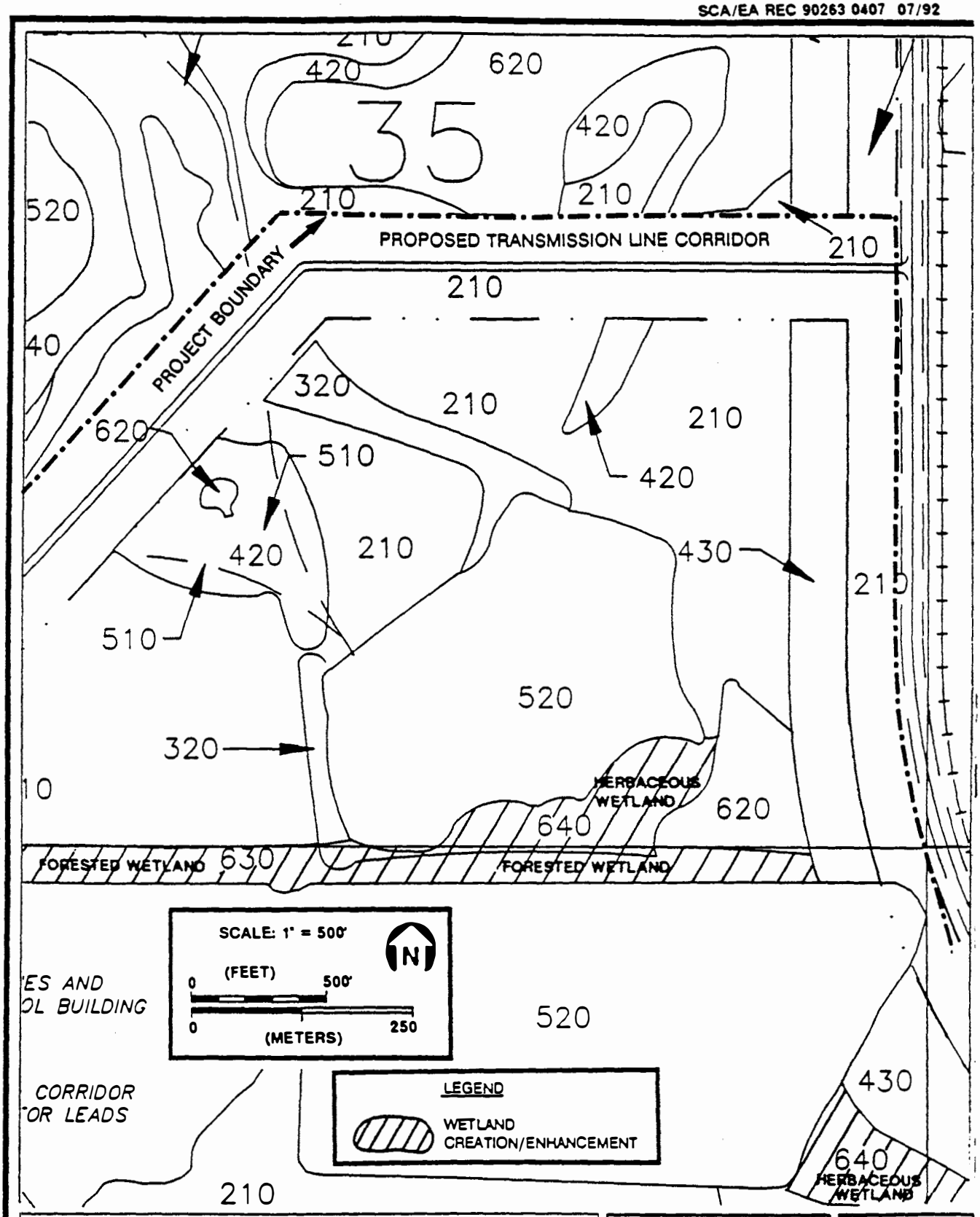

FIGURE 5. (PAGE 3 OF 13)
POST-RECLAMATION LAND USE WITH WETLAND CREATION/ENHANCEMENT AREAS DEPICTED
DREDGE AND FILL PERMIT APPLICATION
Source: ECT, 1992.

TAMPA ELECTRIC
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POLK POWER STATION

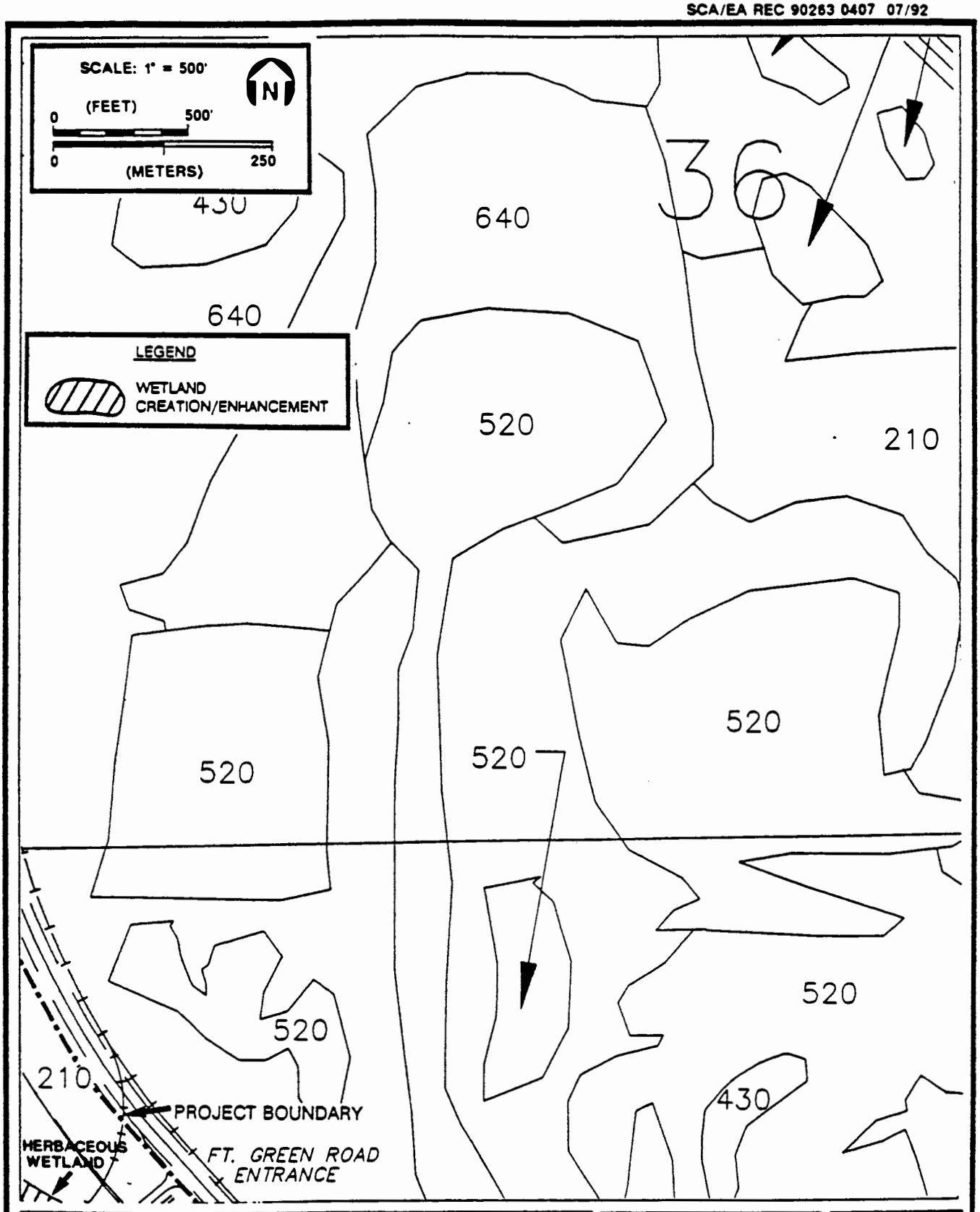

FIGURE 5. (PAGE 4 OF 13)
POST-RECLAMATION LAND USE WITH WETLAND CREATION/ENHANCEMENT AREAS DEPICTED
DREDGE AND FILL PERMIT APPLICATION
Source: ECT, 1992.

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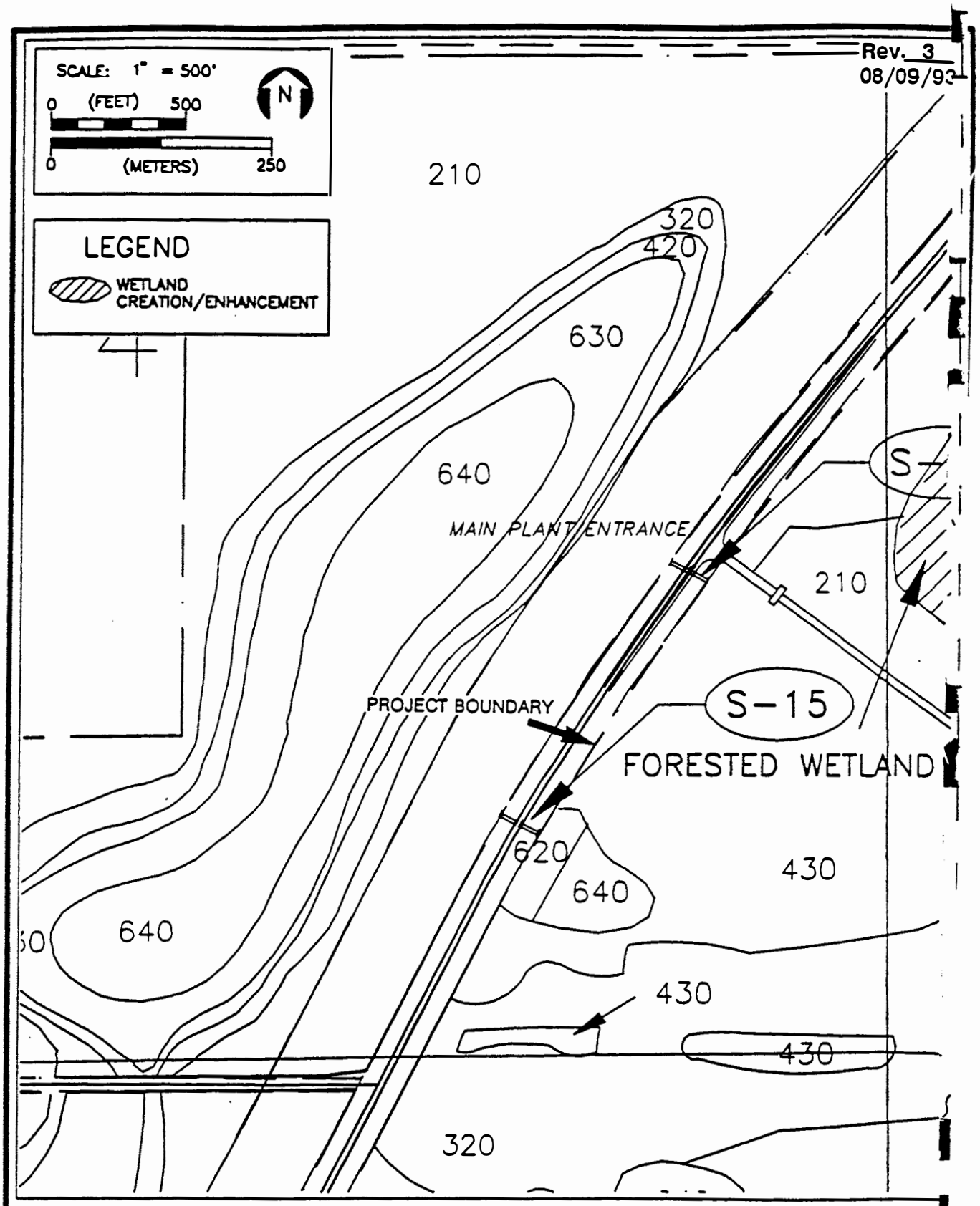

FIGURE 5. (PAGE 5 OF 13)
POSTRECLAMATION LAND USE WITH WETLAND CREATION/ENHANCEMENT AREAS DEPICTED
DREDGE-AND-FILL PERMIT APPLICATION
Source: ECT, 1992.

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

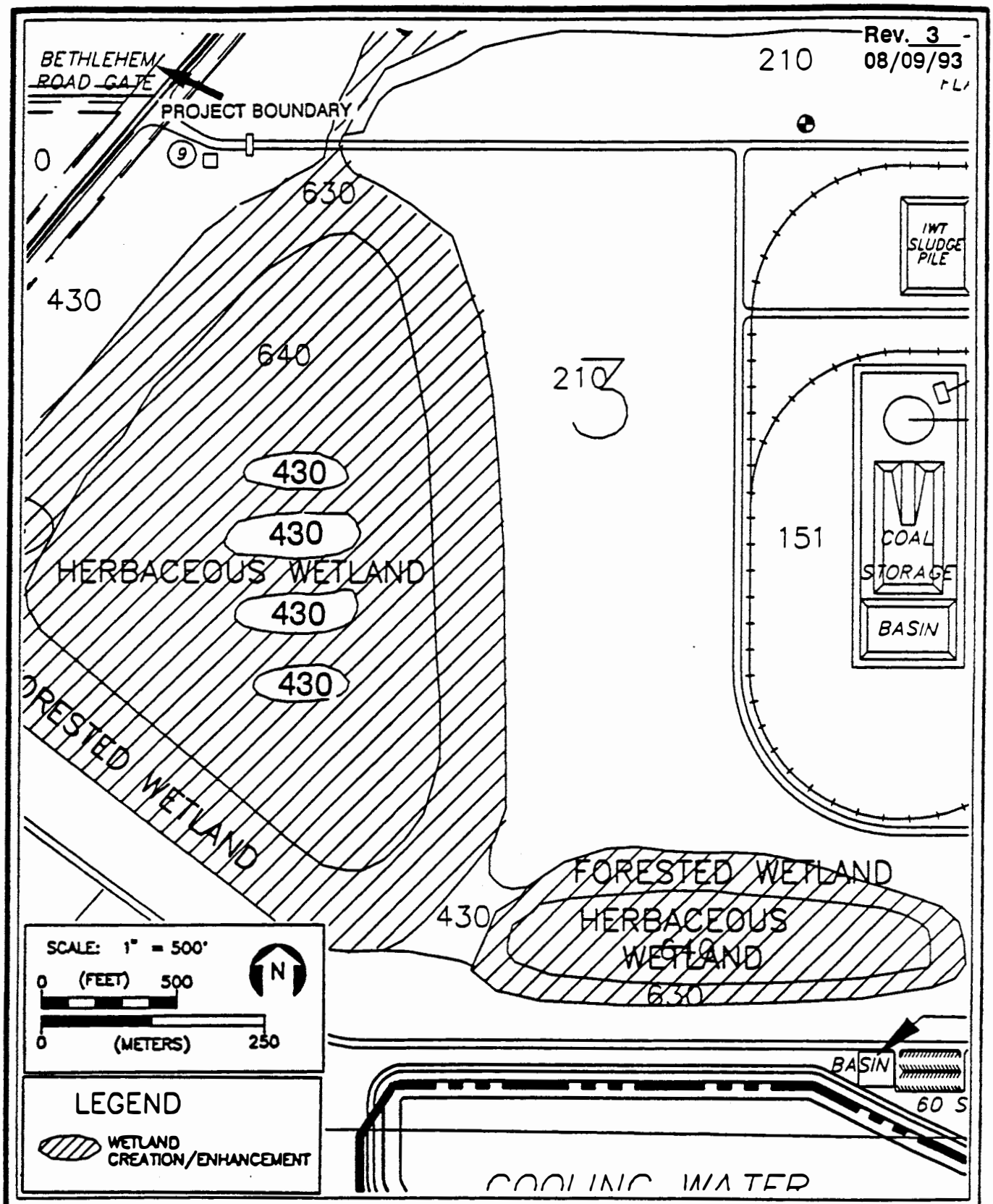

FIGURE 5. (PAGE 6 OF 13)
POSTRECLAMATION LAND USE WITH WETLAND CREATION/ENHANCEMENT AREAS DEPICTED DREDGE-AND-FILL PERMIT APPLICATION
Source: ECT, 1992.

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

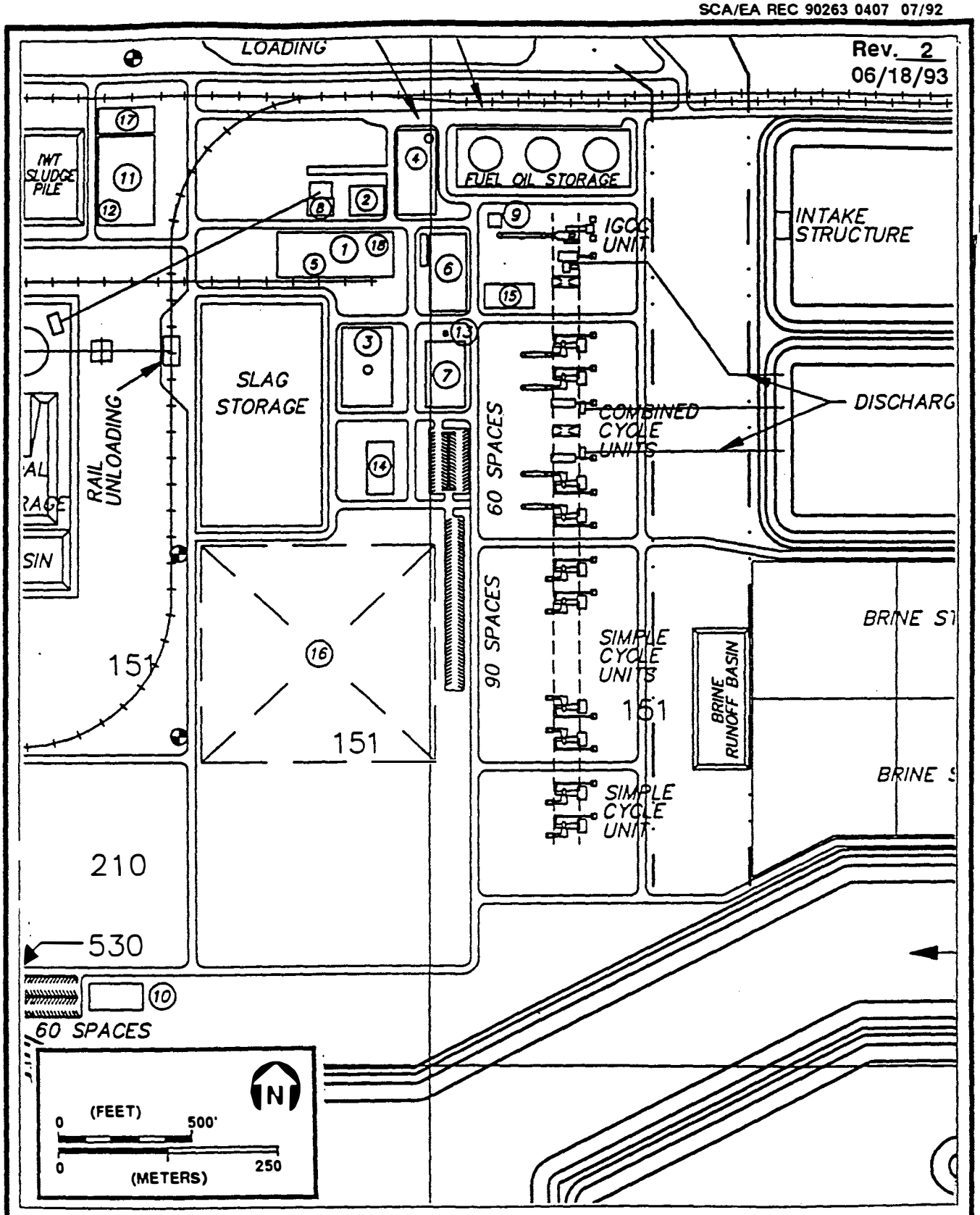

FIGURE 5. (PAGE 7 OF 13)
POST-RECLAMATION LAND USE WITH WETLAND CREATION/ENHANCEMENT AREAS DEPICTED
DREDGE AND FILL PERMIT APPLICATION
Source: ECT, 1992.

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

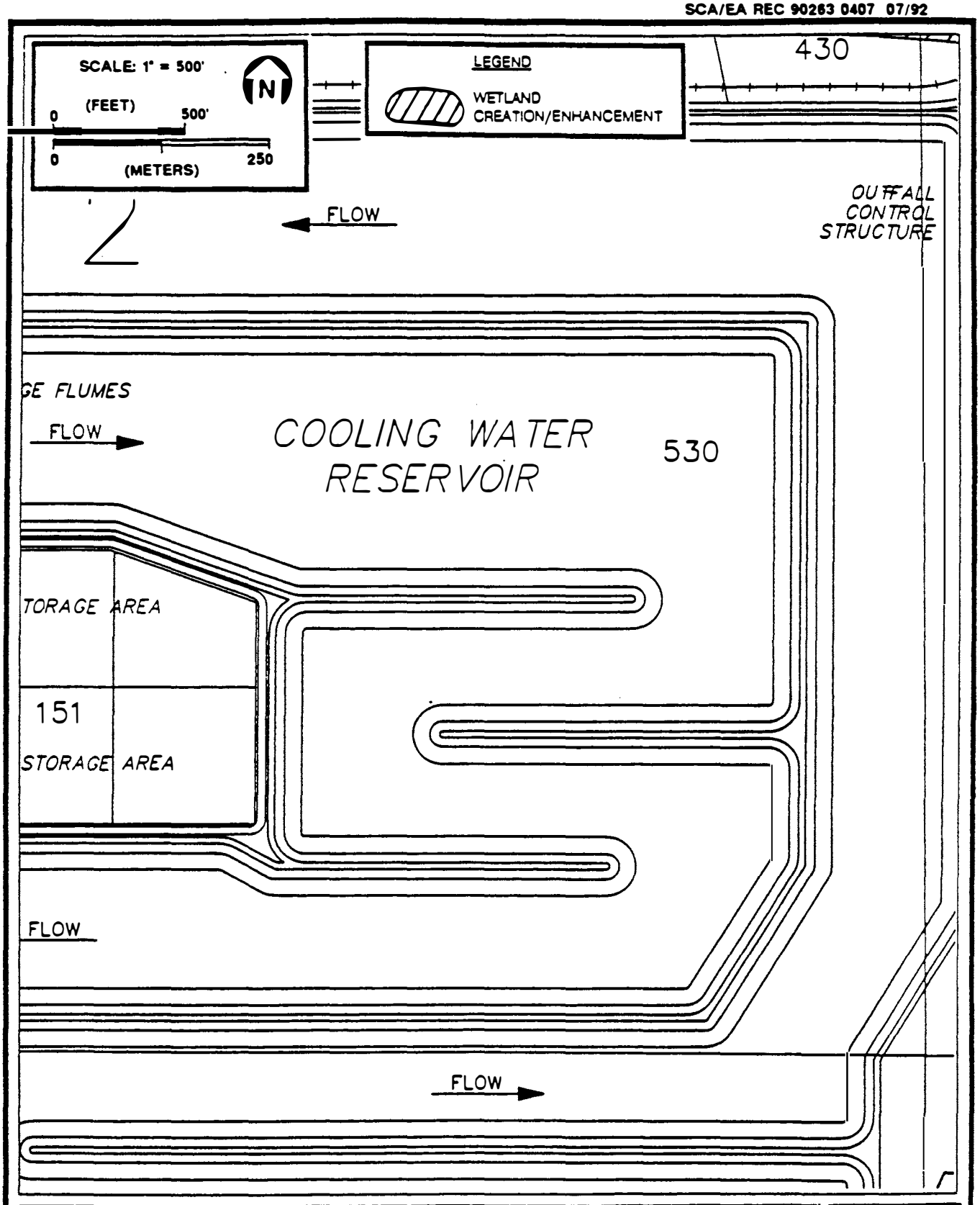

FIGURE 5. (PAGE 8 OF 13)
POST-RECLAMATION LAND USE WITH WETLAND CREATION/ENHANCEMENT AREAS DEPICTED
DREDGE AND FILL PERMIT APPLICATION
Source: ECT, 1992.

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

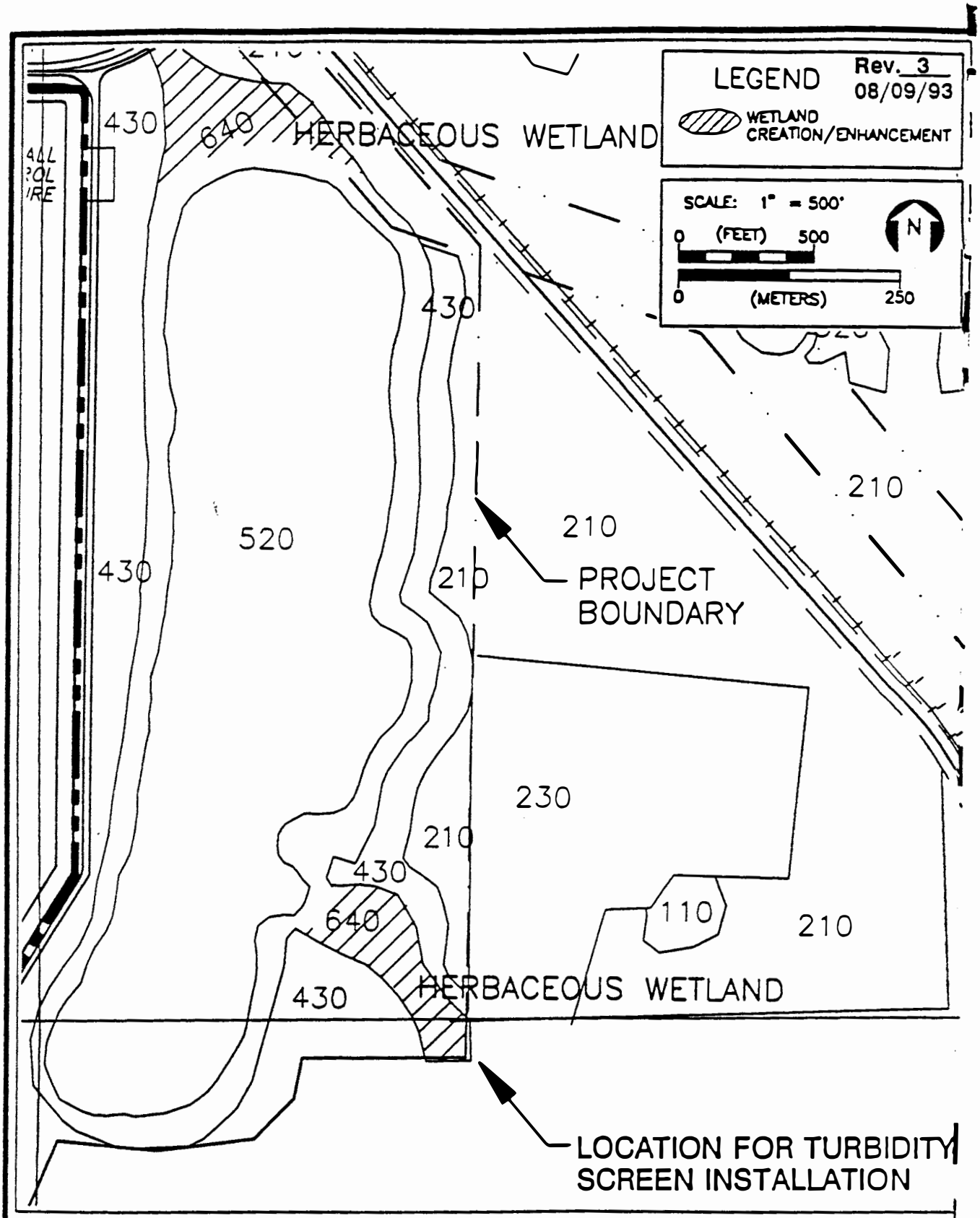

FIGURE 5. (PAGE 9 OF 13)
POSTRECLAMATION LAND USE WITH WETLAND CREATION/ENHANCEMENT AREAS DEPICTED
DREDGE-AND-FILL PERMIT APPLICATION
Source: ECT, 1992.

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

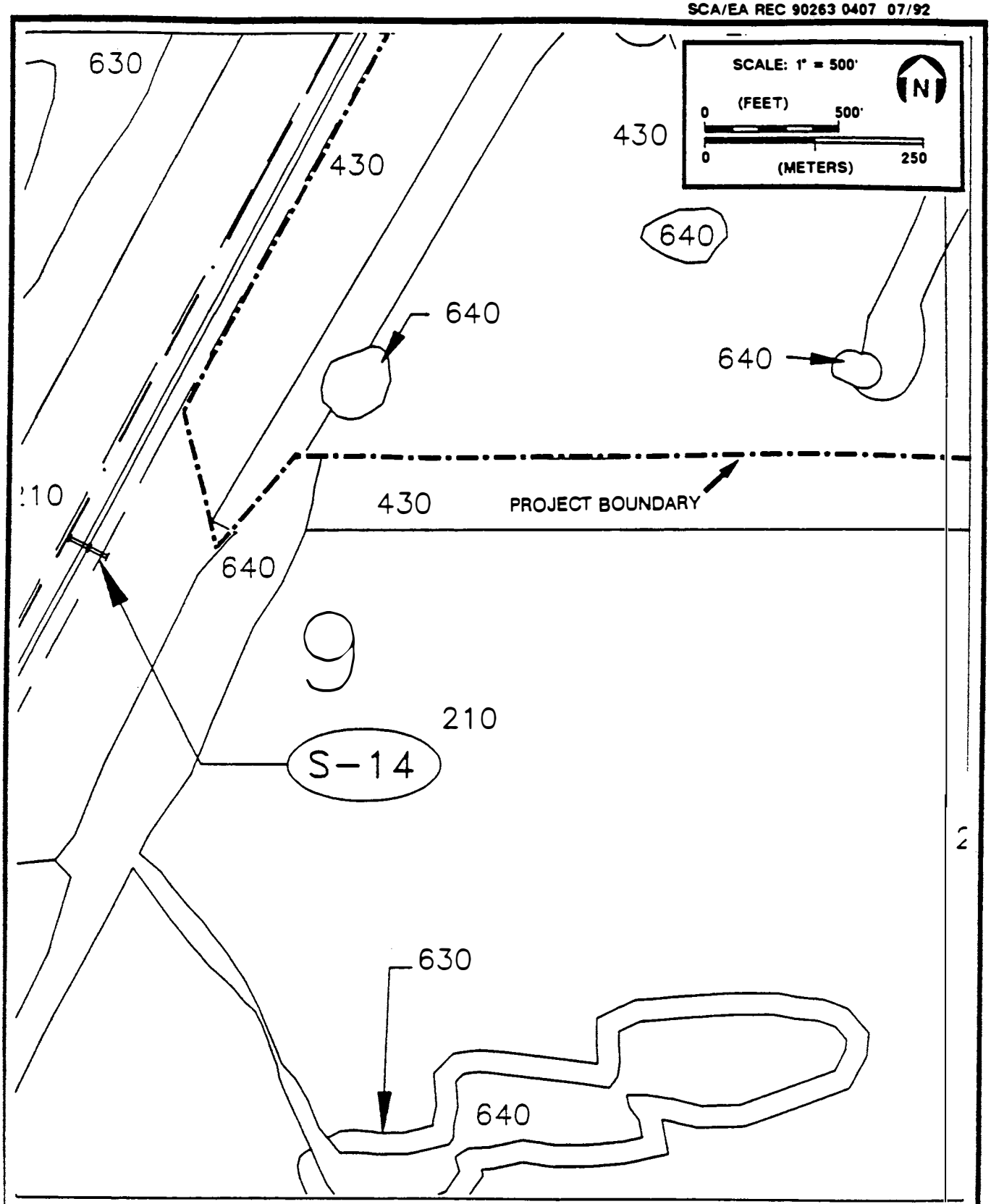

FIGURE 5. (PAGE 10 OF 13)
POST-RECLAMATION LAND USE WITH WETLAND CREATION/ENHANCEMENT AREAS DEPICTED
DREDGE AND FILL PERMIT APPLICATION
Source: ECT, 1992.

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

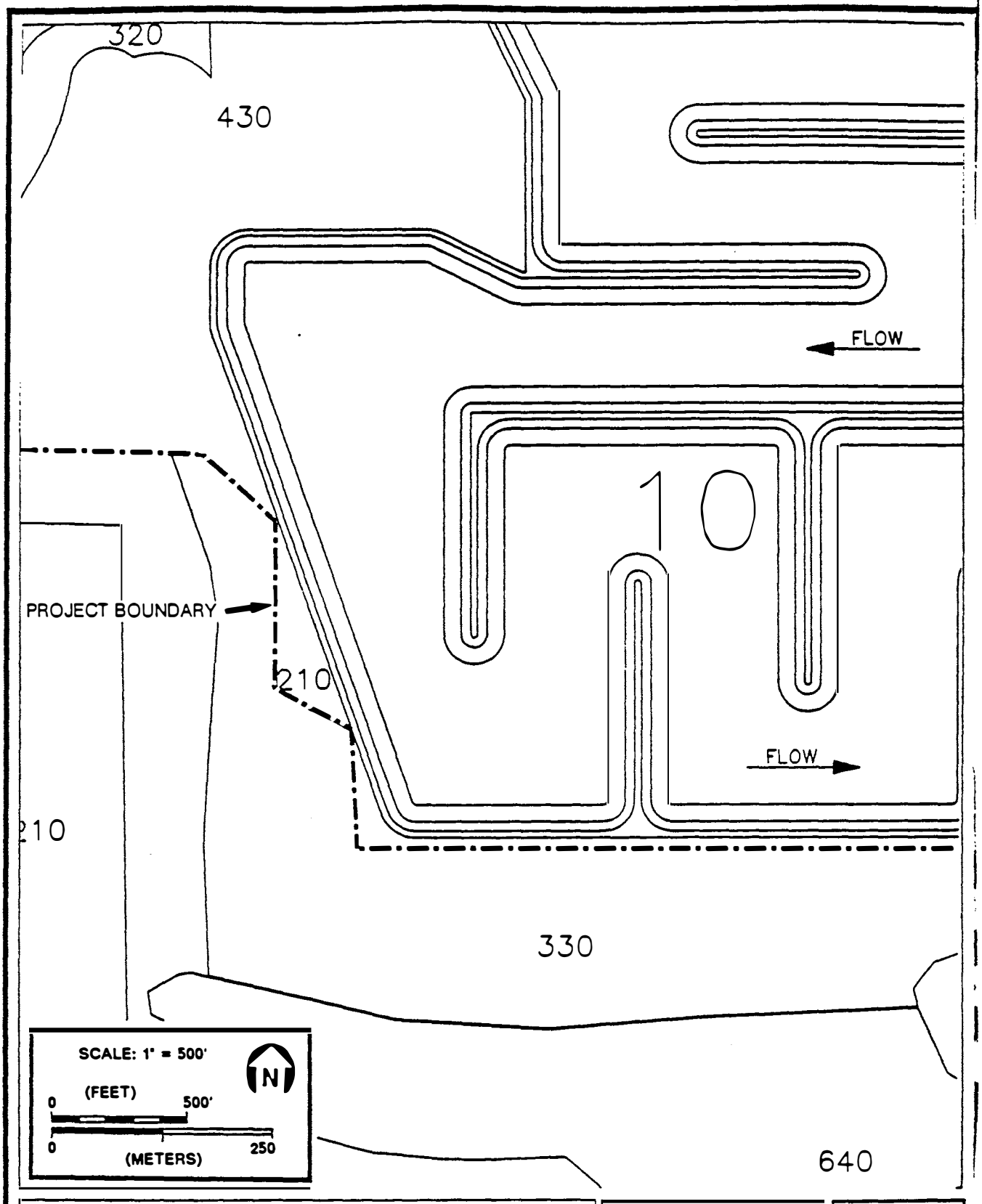

FIGURE 5. (PAGE 11 OF 13)
POST-RECLAMATION LAND USE WITH WETLAND CREATION/ENHANCEMENT AREAS DEPICTED
DREDGE AND FILL PERMIT APPLICATION
Source: ECT, 1992.

TAMPA ELECTRIC
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POLK POWER STATION

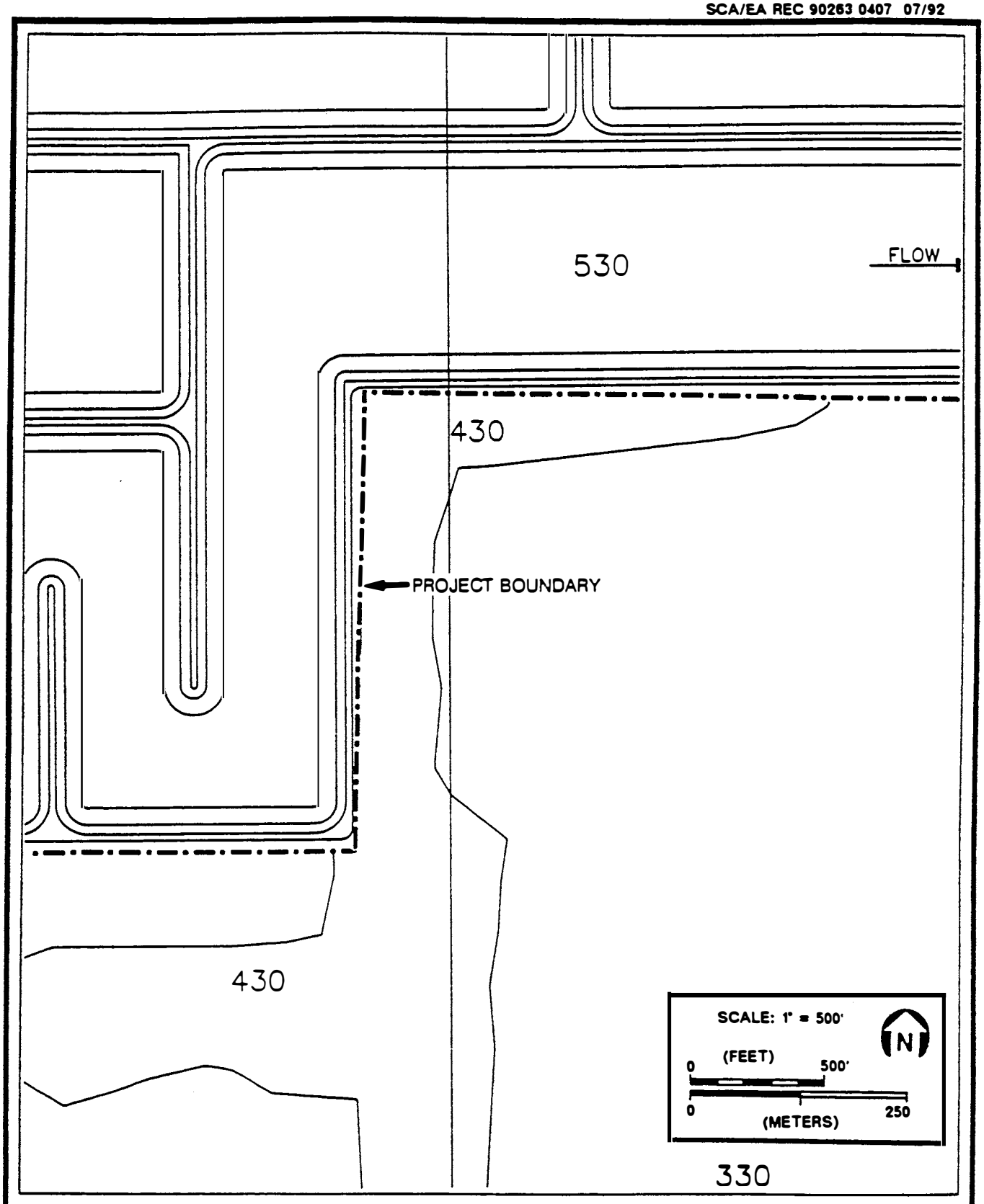

FIGURE 5. (PAGE 12 OF 13)
POST-RECLAMATION LAND USE WITH WETLAND CREATION/ENHANCEMENT AREAS DEPICTED
DREDGE AND FILL PERMIT APPLICATION
Source: ECT, 1992.

TAMPA ELECTRIC
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POLK POWER STATION

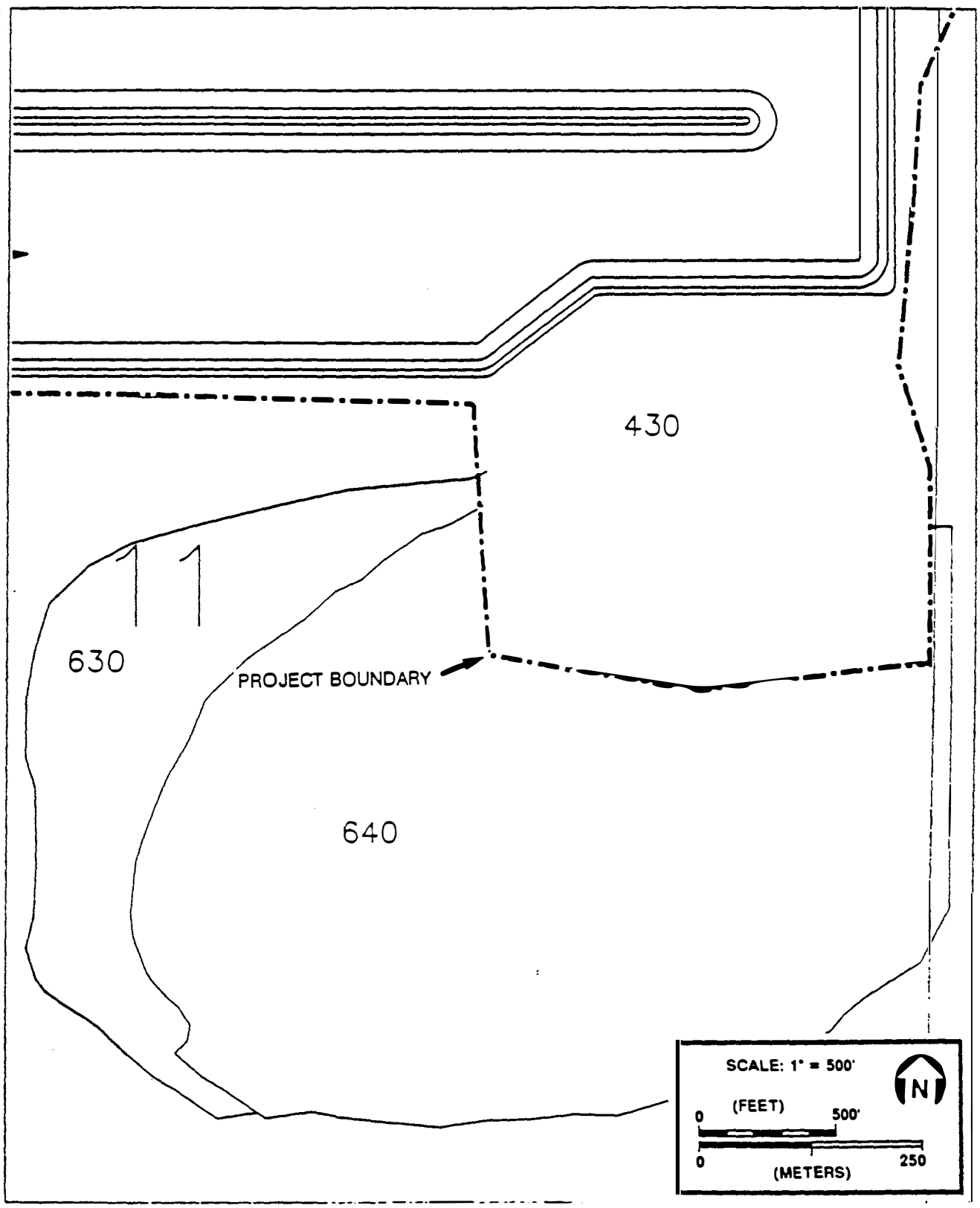

FIGURE 5. (PAGE 13 OF 13)
POST-RECLAMATION LAND USE WITH WETLAND CREATION/ENHANCEMENT AREAS DEPICTED
DREDGE AND FILL PERMIT APPLICATION
Source: ECT, 1992.

TAMPA ELECTRIC
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POLK POWER STATION

Table 1. Acreages and Volumes of Wetland Fill

	Acres	Cubic Yards
Mine cuts filled for construction of the cooling water reservoir	180.81	2,917,068
Mine cuts filled for plant site construction	30.97	499,649
Disturbed herbaceous and early successional forested wetlands for plant site construction	41.33	133,358
TOTAL FILL	**253.11**	**3,550,075**

Source: ECT, 1992.

A total of 253.11 acres of highly disturbed wetlands are proposed for fill placement for construction of the Polk Power Station. As compensation for impacts to these wetland areas, Tampa Electric Company proposes to provide approximately 168.41 acres of combined wetland creation and wetland enhancement (see Table 2). The mitigation plan provides for recontouring of the remaining mine cuts to provide approximately 18.94 acres of forested wetland enhancement and 23.20 acres of herbaceous wetland enhancement. The remainder of the compensation package includes approximately 62.69 acres of forested wetland creation and approximately 63.58 acres of herbaceous wetland enhancement. The ratio of compensation acreage offered per acre of wetland fill is approximately 0.67:1.0.

The compensation package will include plantings of laurel oak, water oak, sweet gum (Liquidambar styraciflua), swamp redbay (Persea palustris), red maple, black gum (Nyssa sylvatica var. biflora) and other tree species as available for the canopy layer, as well as an herbaceous layer which includes maindencane (Panicum hemitomon), pickerelweed, and arrowhead.

Construction within or adjacent to the existing mine cuts will be facilitated by isolating and draining working areas and pumping the water into nearby mine cuts. This will minimize the occurrence of erosion or downstream silt and sedimentation in runoff. The only silt/sedimentation barrier to be installed will be erected upstream of a ditch which leads off the property (see Figure 5, Sheet 9 of 13 and Figure 6). Site grading activities will be primarily accomplished with pans and bulldozers. Typical cross sections of jurisdictional areas proposed for fill placement are included (Figure 7 and 8).

ALTERNATIVES ANALYSIS

In order to meet the needs of a rapidly growing community, it has become necessary for several utility companies serving the area to update and expand their capacity to generate and transmit electricity. Numerous transmission corridors have been constructed or expanded to even out loading, and deactivated generating facilities

Table 2. Acreages of Wetland Compensation

	Acres
Wetland Creation	
Forested	62.69
Herbaceous	63.58
Wetland Enhancement	
Forested	18.94
Herbaceous	23.20
Total Mitigation	
Forested	81.63
Herbaceous	86.78
TOTAL COMBINED MITIGATION	**168.41**

Ratio = Mitigation:Impact = 0.67:1.0

Source: ECT, 1992.

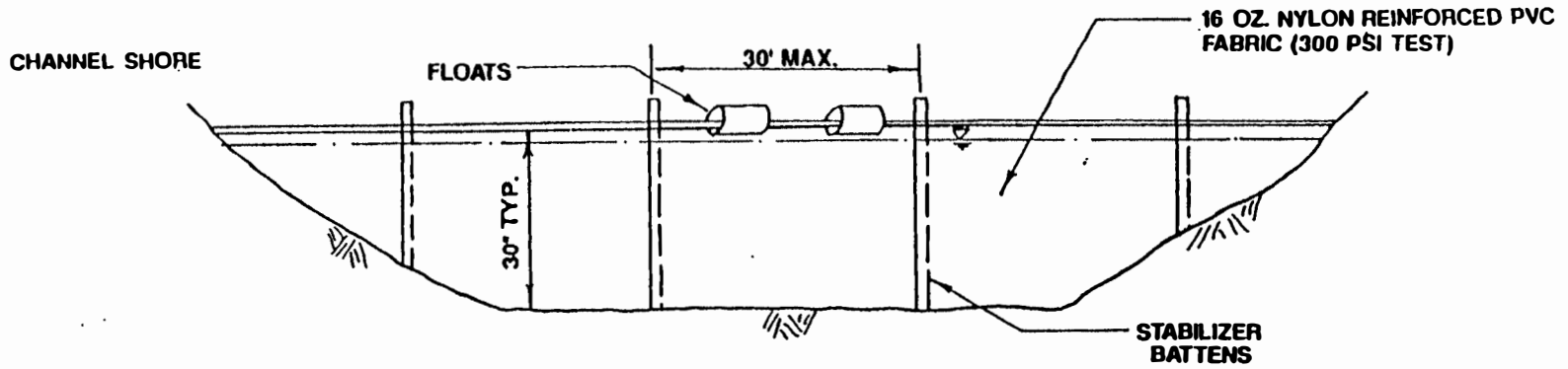

FIGURE 6.
TURBIDITY SCREEN DETAIL
DREDGE AND FILL PERMIT APPLICATION

Source: ECT, 1992.

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

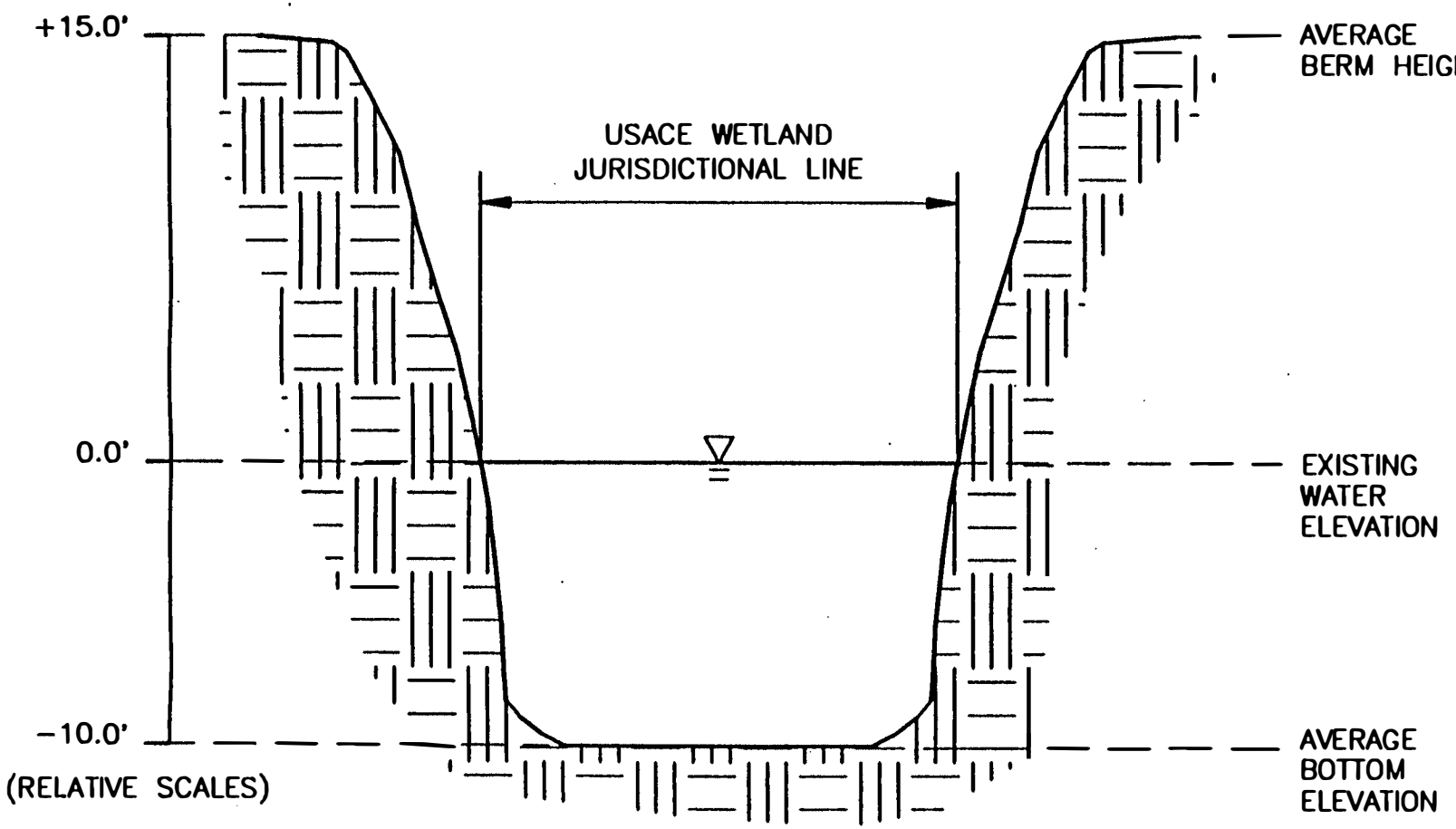

FIGURE 7.
TYPICAL CROSS SECTION OF EXISTING MINE CUTS
DREDGE AND FILL PERMIT APPLICATION

Source: ECT, 1992.

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POLK POWER STATION

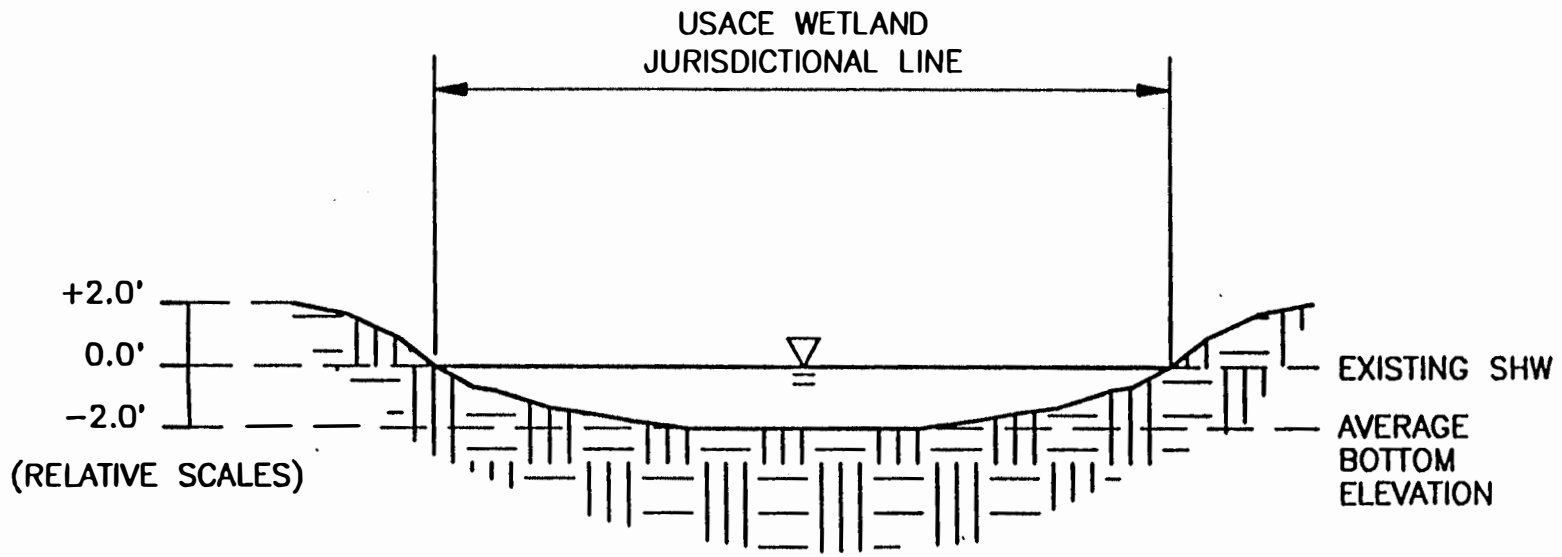

FIGURE 8.
TYPICAL CROSS SECTION OF EXISTING DISTURBED HERBACEOUS WETLANDS
DREDGE AND FILL PERMIT APPLICATION

Source: ECT, 1992.

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

have been returned to service to assist in managing peak loads. In addition to these measures, new, modern generating facilities need to be constructed to supply the west-central Florida area.

During the course of selecting an appropriate site for constructing a new power plant, Tampa Electric Company first considered a large tract of land on lower Tampa Bay adjacent to Port Manatee that was Tampa Electric Company property. This property had the advantages of ready access to a barge transported coal supply, proximity to the area which was to be served, and existing Tampa Electric Company ownership. However, this property had the disadvantage of being located adjacent to an environmentally sensitive estuary, Cockroach Bay. Public concerns expressed relative to this proposed power plant site led Tampa Electric Company to establish a committee comprised of public and private individuals from the business and environmental communities to examine alternatives to the Port Manatee site. Upon examining the available property that had appropriate dimensions and assessing the various parcels for environmental sensitivity, proximity to the service area and access to fuel supplies, the committee selected the property now known as the Polk Power Station.

The Polk Power Station property has the advantages of already being in a highly disturbed condition subsequent to phosphate mining activities, access to rail service for fuel supply, and access by existing highways or roads for ancillary service and employee commuting. Construction of the Polk Power Station on the selected property has a disadvantage since an exceptionally large acreage of the property is, by definition, jurisdictional wetland. The vast majority of the jurisdictional wetland is open water standing in unreclaimed mine cuts made when draglines excavated below natural grade to access phosphate reserves. Although the site plan proposes a seemingly large acreage of displacement for this type of habitat, most has been retained within the design of the cooling reservoir (see Figure 3). In addition most of the berms constructed for directing the cooling water around its circuitous path are situated such that they overlie the upland ridges between the mine cuts.

The placement of fill for plant site construction in other disturbed areas which contain jurisdictional wetlands is necessary for the development of a workable site plan. Wetland areas that are sufficiently removed from the plant site will be retained intact after construction (i.e., the southwestern corner of the property, see Figure 5, Pages 5 and 10 of 13). The remainder are displaced, but their functions and values are more than replaced by the large, inter-connected wetland compensation areas with diverse habitat and mosaics of wetland and upland communities. Tampa Electric Company has substantially avoided the potential disturbance to higher quality wetlands by the selection of the Polk Power Station over the Port Manatee property, minimized the displacement of wetlands with a sensitive site plan, only displaced the most disturbed wetland areas with the lowest functional values, and more than compensated for the values and functions displaced with a large, diverse community derived from wetland creation and wetland enhancement.

ATTACHMENT B

POLK POWER STATION LEGAL DESCRIPTION OF LANDS

LANDS FROM FREEPORT MACMORAN RESOURCE PARTNERS, LIMITED PARTNERSHIP (Agrico Chemical Company)

LANDS TO THE EAST OF STATE ROAD 37:

TOWNSHIP 32 SOUTH, RANGE 23 EAST, POLK COUNTY, FLORIDA

SECTION 1

That part of the West 330.00 feet of the East 1/2 of the West 1/2 of said Section 1, lying southwesterly of Fort Green Road, AND all that part of the West 1/4 of said Section 1 lying southwesterly of Fort Green Road.

SECTION 2

a. The West 848.00 feet of the NW 1/4 of the NW 1/4.
b. The South 3/4 LESS that part described as; Begin 400.00 feet West of the NE corner of said South 3/4, run thence West 3600.00 feet; thence South 150.00 feet; thence East 450.00 feet; thence South 200.00 feet; thence East 700.00 feet; thence North 200.00 feet; thence East 2450.00 feet; thence North 150.00 feet to the POINT OF BEGINNING.

SECTION 3

All lying East of State Road 37.

SECTION 4

All lying East of State Road 37.

SECTION 9

BEGIN at the NE corner of said Section 9 and proceed 5.00°04'08"E. along the East line of said Section 9 for 2117.07 feet; thence N.88°05'57"W. for 323.11 feet; thence S.88°42'07"W. for 983.72 feet; thence N.89°51'23"W. for 1058.61 feet; thence S.39°38'56"W. for 454.20 feet; thence N.13°09'59"W. for 538.34 feet to the easterly right-of-way line of State Road No. 37 (being 80 feet at right angles from centerline); thence N.27°31'59"E. along said right-of-way line for 2184.60 feet to the North line of said Section 9; thence N.89°32'05"E. along said North line for 1765.11 feet to the POINT OF BEGINNING.

SECTION 10

BEGIN at the NE corner of said Section 10 and proceed S.00°00'02"E. along the East line of said Section 10 for 1885.69 feet thence N.88°45'46"W. for 324.02 feet; thence S.01°25'49"W. for 1761.69 feet; thence N.89°56'27"W. for 3504.25 feet; thence N.02°46'52"W. for 454.48 feet; thence N.61°33'02"W. for 320.02 feet; thence N.00°22'41"W. for 641.25 feet; thence N.46°54'10"W. 372.71 feet; thence N.88°05'57"W. for 820.69 feet; to the West line of said Section 10; thence N.00°04'08"W. for 2117.07 feet to the NW corner of said Section 10; thence S.89°53'15"E. along the North line of said Section 10 for 5274.75 feet to the POINT OF BEGINNING.

SECTION 11

BEGIN at the NE corner of said Section 11 and proceed S.00°13'13"E. along the East line of said Section 11 for 731.09 feet; thence S.22°01'06"W. for 60.15 feet; thence S. 04°41'20"W. for 1038.35 feet; thence S.16°25'50"E. for 399.84 feet again to the East line of said Section 11; thence S.00°13'13"E. along said East line for 448.50 feet to the East Quarter Section Corner of said Section 11; thence S.00°19'20"W. along the East line of the SE 1/4 of said Section 11 for 277.57 feet; thence S.83°10'34"W. for 845.66 feet; thence N.80°44'17"W. for 775.80 feet; thence N.04°00'31"W. for 937.40 feet; thence N.88°45'46"W. for 3637.10 feet to the West line of said Section 11; thence N.00°00'02"W. for 1885.69 feet to the NW corner of said Section 11; thence N.89°55'04"E. for 5298.52 feet to the POINT OF BEGINNING.

SECTION 12

BEGIN at the NW corner of said Section 12 and proceed S.88°52'09"E. along the North line of the NW 1/4 of said Section 12 for 1649.70 feet to a concrete monument number 1943; thence S.00°19'05"W. for 75.98 feet; thence S.89°23'48"W. for 614.63 feet; thence S.10°48'34"W. for 155.81 feet; thence S.43°38'11"W. for 211.14 feet; thence S.82°21'29"W. for 355.22 feet; thence N.84°53'22"W. for 385.84 feet; thence S.22°01'06"W. for 320.75 feet to the West line of said Section 12; thence N.00°13'13"W. along said West line for 731.09 feet to the POINT OF BEGINNING.

LANDS TO THE WEST OF STATE ROAD 37:

TOWNSHIP 32 SOUTH, RANGE 23 EAST, POLK COUNTY, FLORIDA

SECTION 3

The part of the South 1/2 of the NW 1/4 lying West of State Road No. 37. LESS existing county maintained right-of-way for Bethlehem Road.

SECTION 4

The SE 1/4 of the SW 1/4, LESS existing county maintained right-of-way for Albritton Road. The SE 1/4 of said Section 4 lying North and West of State Road No. 37, LESS existing county maintained right-of-way for Albritton Road, and subject to GAS PIPELINE EASEMENT in O.R. Book 219 on Page 341 of the Public Records of Polk County, Florida. That part of the South 1/2 of the NE 1/4 of said Section 4 lying North and West of State Road No. 37, LESS existing county maintained right-of-way for Bethlehem Road, and subject to GAS PIPELINE EASEMENT in O.R. Book 219 on Page 341 of the Public Records of Polk County, Florida.

TOWNSHIP 32, SOUTH, RANGE 23 EAST, POLK COUNTY, FLORIDA

SECTION 7

The NE 1/4, LESS the NE 1/4 of the NE 1/4, AND LESS the North 416.00 feet of the East 209.00 feet of the NW 1/4 of the NE 1/4, AND LESS existing county maintained right-of-way for Albritton Road.
The SE 1/4, LESS right-of-way for State Road No. 674.
The SW 1/4, LESS right-of-way for State Road No. 674.
The NW 1/4, LESS the NE 1/4 of the NW 1/4, AND LESS existing county maintained right-of-way for Albritton Road. Said Section 7 being subject to existing Florida Gas Transmission Co. Pipeline Easement.

SECTION 8

The NE 1/4, LESS the West 1/2 of the NW 1/4 of the NE 1/4.
The SE 1/4 of Section 8, LESS right-of-way for State Road No. 674.
The SW 1/4 of Section 8, LESS right-of-way for State Road No. 674.
The South 1/2 of the NW 1/4.

SECTION 9

ALL, lying West of State Road No. 37 LESS existing county maintained right-of-way for Albritton Road, AND LESS right-of-way for State Road No. 674.

LANDS FROM AMERICAN CYANAMID COMPANY

TOWNSHIP 31 SOUTH, RANGE 23 EAST, POLK COUNTY, FLORIDA

SECTION 34

All the part of the S-3/4 of E-3/4 of the section lying east of the right-of-way of State Road 37 and also lying south of the right-of-way of County Road 630 (formerly designated State Road 630).

SECTION 35

All the part of the S-3/4 of the section lying south of the right-of-way of County Road 630 (formerly designated State Road 630) and also lying west of the right-of-way of the Brewster-Fort Green Road.

TOWNSHIP 32 SOUTH, RANGE 23 EAST, POLK COUNTY, FLORIDA

SECTION 2

a. The N-1/2 of N-1/2, LESS the west 848 feet thereof, and SUBJECT TO existing right-of-way of the Brewster-Fort Green Road at the northeast corner thereof.

b. The part of the S-1/2 of N-1/2 (being part of U.S. Government Lot 1 in the NW-1/4 and of U.S. Government Lot 1 in the NE-1/4) described as: begin at a point on the north boundary of said S-1/2 of N-1/2 located 400 feet west of the northeast corner thereof (measured along said north boundary), thence west along said north boundary 3600 feet, thence south 150 feet, thence east 450 feet, thence south 200 feet, thence east 700 feet, thence north 200 feet, thence east 2450 feet, thence north 150 feet to the point of beginning. (The directions "north" and "south" meaning the bearing of the east boundary of Section 2, and the directions "east" and "west" meaning the bearing of the north boundary of said S-1/2 of N-1/2 of Section 2.)

Source: Andrew Edgemon & Associate, 1991.

Southwest Florida Water Management District

2379 Broad Street (U.S. 41 South) Brooksville, Florida 34609-6899
Phone (904) 796-7211 or 1-800-423-1476 SUNCOM 628-4150

July 1, 1992

Anthony N. Arcuri
Environmental Consulting and Technology, Inc
5405 Cypress Center Drive
Suite 200
Tampa, Fla. 33609

Subject: Proposed Tampa Electric Co. Polk Power Station Site
Sections 2,3/Township 32 S/Range 23 E
Polk County

Dear Mr. Arcuri:

As a result of the June 29, 1992, on site meeting with you, it was determined that there are some areas of wetlands in the unmined portion of the proposed power plant site. The poor quality of the June 13, 1991, aerial photograph you provided, and the disturbed nature of the site made it unworkable to verify the present wetland boundaries you identified. After inspecting better quality 1984 aerial photography and examining the National Wetland Inventory (NWI) maps for the unmined portion of the site, we determined that they more realistically reflect the acreage and type of wetlands you will need to compensate for. Please utilize these maps for wetland planning purposes for this project.

Please contact me at 534-1448 to further discuss this matter.

Sincerely,

David Bishof
Environmental Scientist
Bartow Permitting Department
Resource Regulation

DB:kmh226

cc: Richard Gannon

Florida Department of Environmental Regulati
Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2
Lawton Chiles, Governor
Carol M. Browner, Sec

April 15, 1992

Tampa Electric Company
c/o Robert Hearon
Environmental Consulting & Tech., Inc.
5405 Cypress Center Drive, Suite 200
Tampa, FL 33609

Dear Mr. Hearon:

This letter is to confirm our telephone conversation regarding my request that TECO have a binding jurisdictional determination done on the proposed Polk County power plant site. After discussing the matter with Rick Cantrell. I am withdrawing my request that a binding jurisdictional determination be done for the site.

The BWRM staff has discussed how the baseline study should deal with mined-out lands, i.e., to evaluate them as if reclamation has been completed and the restored communities were mature. Part of the application information shall be copies of all permits issued to mine the site and copies of the approved LRU's from DNR for the site. This information should be used to produce maps showing what the site will look like after reclamation has occurred without a power plant on the site. The maps should show all wetlands indicate the wetland type and jurisdiction and be used to estimate the impacts of the power plant on the restored wetlands. If the review of the reclamation plans indicates that the reclamation plans can be revised to incorporate both the power plant and the required reclamation, the impact of the plant would be greatly reduced.

If you have any questions, I can be contacted at (904) 488-0130.

Sincerely,

Trudie D. Bell

Trudie D. Bell
Environmental Supervisor II
Wetland Resource Management

cc: Buck Oven

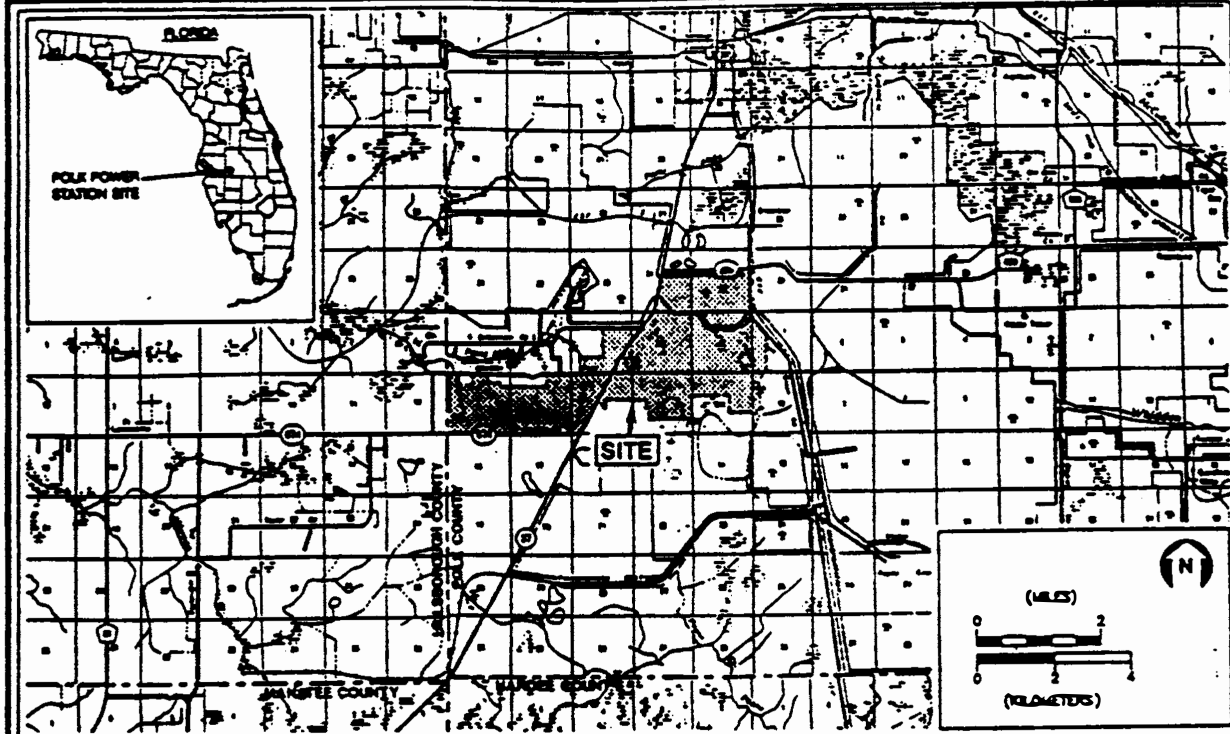

FIGURE 1.
SITE LOCATION MAP
DREDGE AND FILL PERMIT APPLICATION

COE APPL# 199201345(IP-MN)
DATE: 9/9/92
SHEET 1 OF 16

Source: FDOT Maps, Hillsborough Co., Polk Co., Manatee Co., Hardee..

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

FIGURE 2.
KEY MAP FOR AERIAL PHOTOGRAPHS, POST-RECLAMATION TOPOGRAPHY AND POST-RECLAMATION VEGETATION
DREDGE AND FILL PERMIT APPLICATION KEY SHEET
Source: L.F. ... & Assoc. Inc., OCT 1992

TAMPA ELECTRIC
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POLK POWER STATION

A total of 253.11 acres (211.78 acres of phosphate mine cuts and 41.33 acres of highly disturbed wetland) are proposed for fill placement for construction of the Polk Power Station. As compensation for impacts to these wetland areas, Tampa Electric Company proposes to provide approximately 168.41 acres of combined wetland creation and wetland enhancement. The mitigation plan provides for recontouring of the remaining mine cuts to provide approximately 18.94 acres of forested wetland enhancement and 23.20 acres of herbaceous wetland enhancement. The remainder of the compensation package includes approximately 62.69 acres of forested wetland creation and approximately 63.58 acres of herbaceous wetland creation. The ratio of compensation acreage offered per acre of wetland fill is approximately 0.67:1.0. The compensation package will include planting of laurel oak (Quercus laurifolia), water oak (Quercus nigra), sweet gum (Liquidambar styraciflua), swamp redbay (Persea palustris), red maple (Acer rubrum), black gum (Nyssa sylvatica var. biflora) and other tree species as available for the canopy layer, as well as an herbaceous layer which includes maindencane (Panicum hemitomon), pickerelweed (Pontederia cordata), and arrowhead (Sagittaria lancifolia).

Table 1. Acreage of Wetland Fill and Wetland Mitigation

	Acres
Mine cuts filled for construction of the cooling water reservoir	180.81
Mine cuts filled for plant site construction	30.97
Disturbed herbaceous and early successional forested wetland for plant site construction	41.33
TOTAL FILL	253.11
Wetland Creation	
Forested	62.69
Herbaceous	63.58
Wetland Enhancement	
Forested	18.94
Herbaceous	23.20
Total Mitigation	
Forested	81.63
Herbaceous	86.78
TOTAL COMBINED MITIGATION	168.41

Ratio = Mitigation:Impact = 0.67:1.0

COE APPL# 199201345(IP-MH)
DATE: 9/9/92
SHEET 2 OF 16

Source: ECT, 1992.

SCA/EA REC 90263 0407 07/92

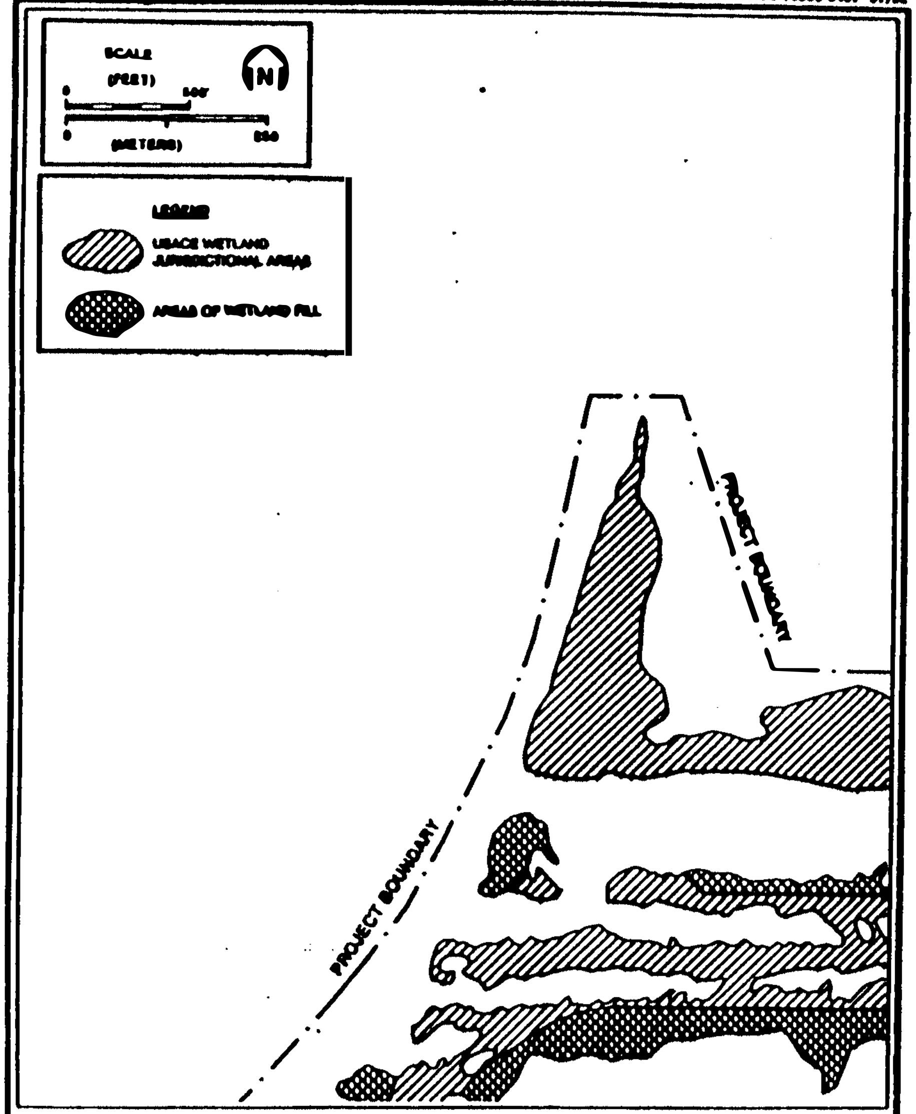


FIGURE 3.

SEE KEY

USACE WETLAND DELINEATIONS (PAGE 1 OF 13)
DREDGE AND FILL PERMIT APPLICATION

Source: I.F. Rudolph & Assoc. Inc.; OCT. 1992.

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

SCA/EA REC 90263 0407 07/92

COE APPL# 199201345(IP-BW)
DATE: 9/9/92
SHEET 3 OF 16

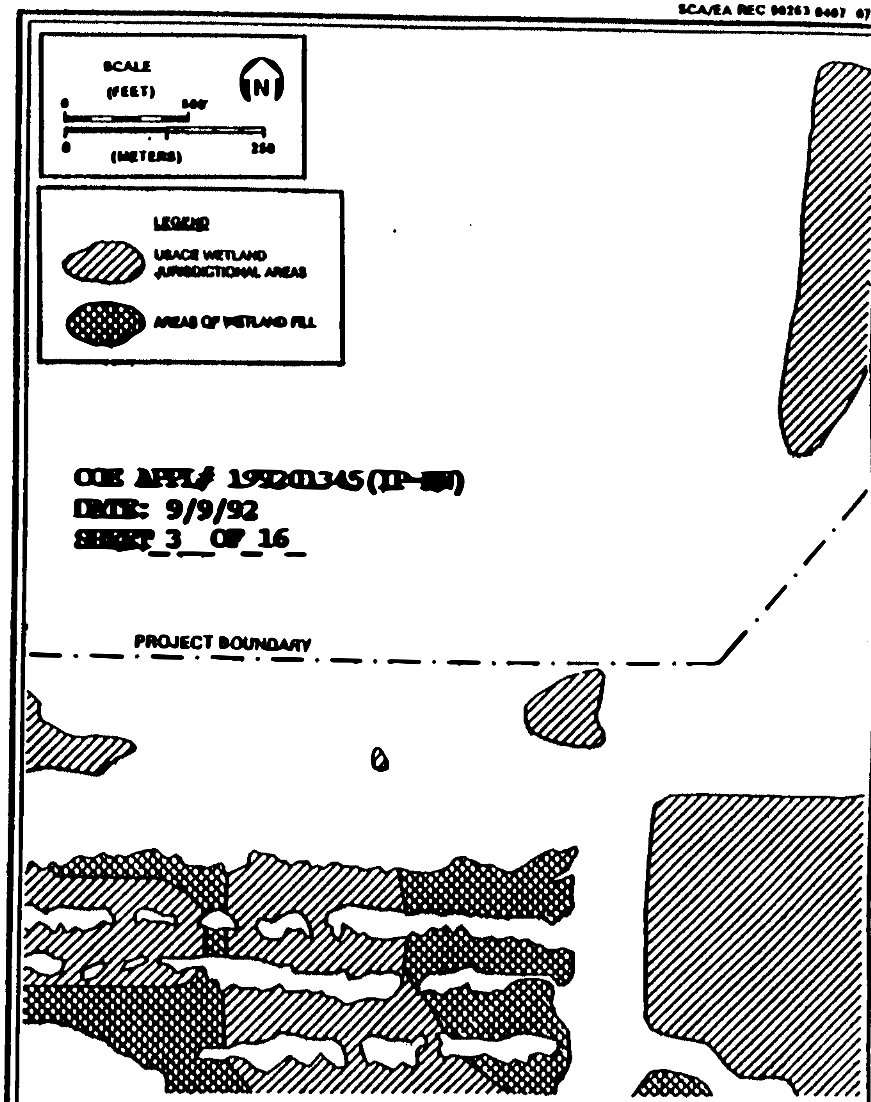


FIGURE 3.

SEE KEY

USACE WE LA D DELINEATIONS (PAGE 2 OF 13)
DREDGE AND FILL PERMIT APPLICATION

Source: I.F. Rudolph & Assoc. Inc.; OCT. 1992.

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

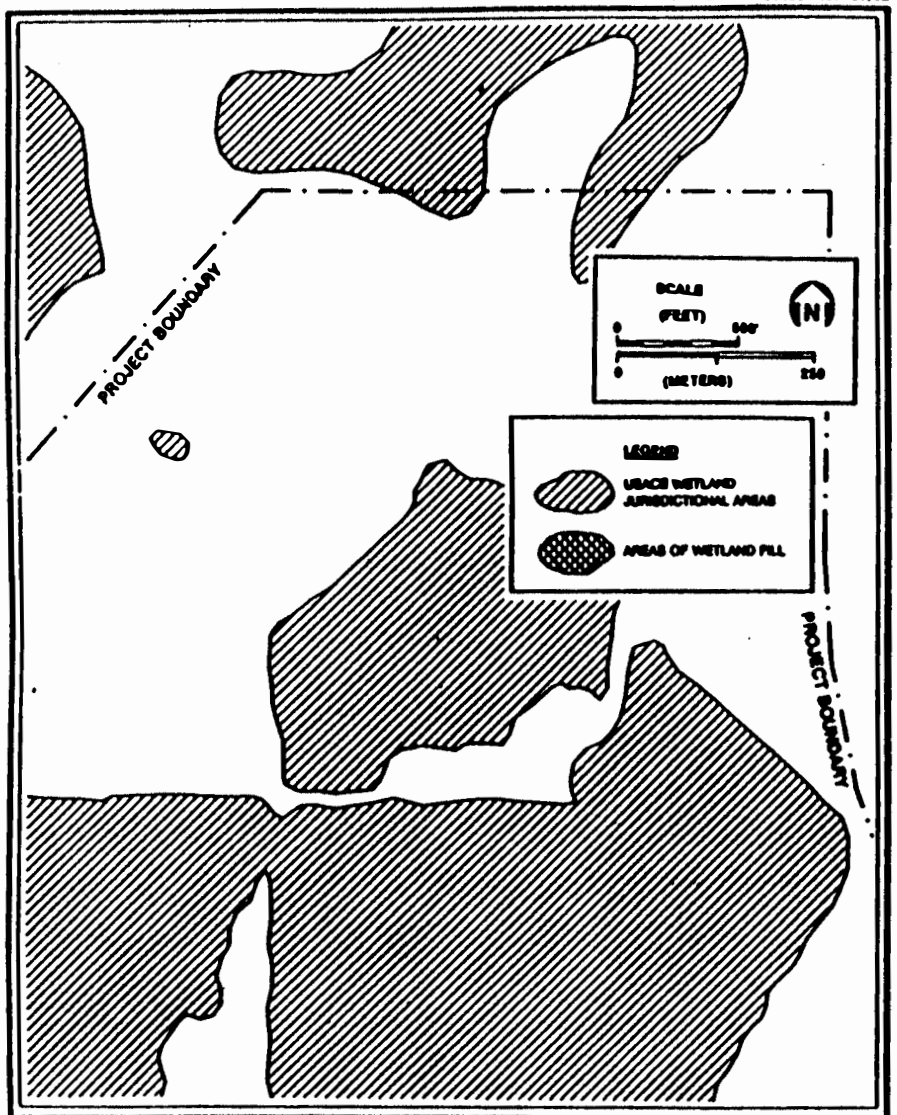
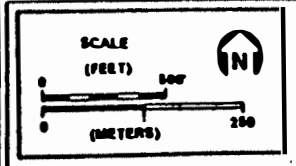


FIGURE 3.
USACE WETLAND DELINEATIONS (SEE KEY PAGE 3 OF 13)
DREDGE AND FILL PERMIT APPLICATION
Source: I.F. Rooks & Assoc. Inc.; SCT, 1992.

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

SCA/EA REC 00263 0407 07/92



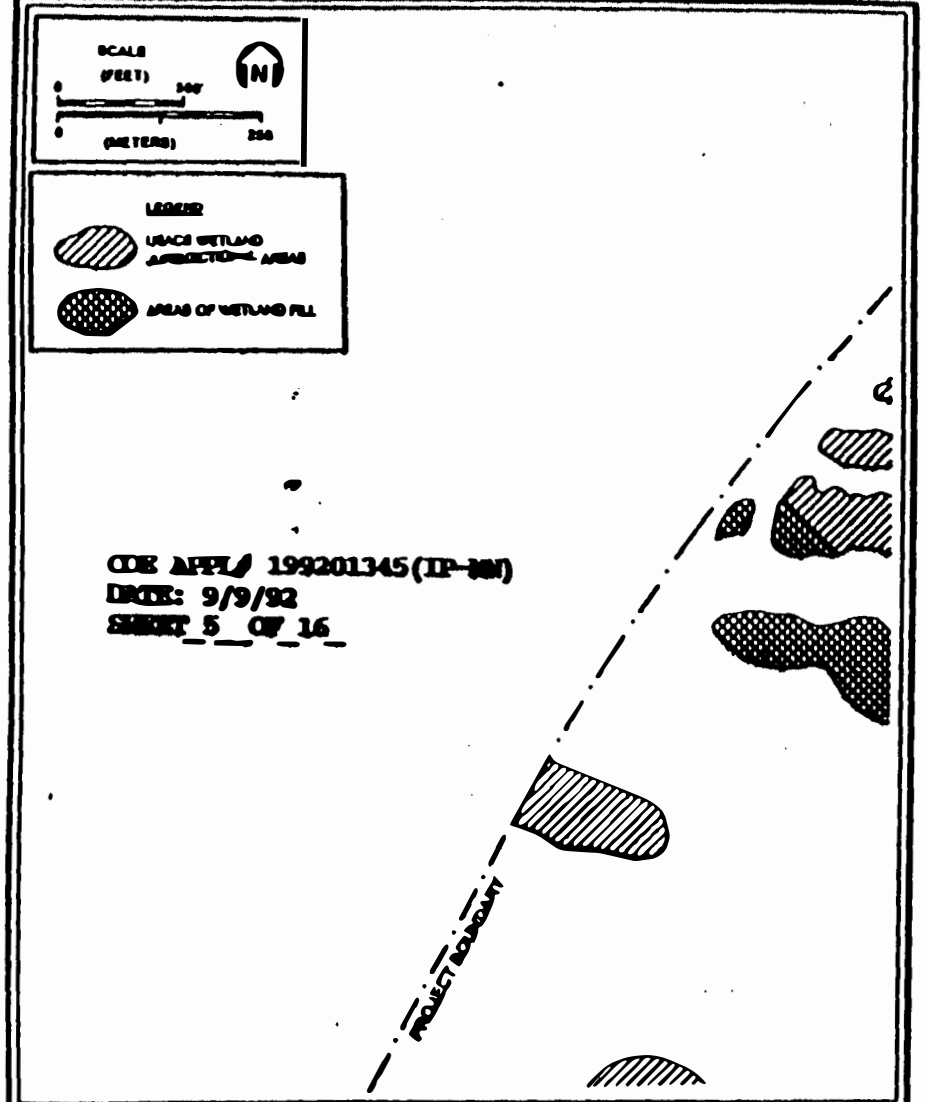
COE APPL# 199201345(IP-HR)
DATE: 9/9/92
SHEET 4 OF 16

PROJECT BOUNDARY

FIGURE 3.
USACE WETLAND DELINEATIONS (SEE KEY PAGE 4 OF 13)
DREDGE AND FILL PERMIT APPLICATION
Source: I.F. Rooks & Assoc. Inc.; SCT, 1992.

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION



COE APPL# 199201345(IP-SM)
DATE: 9/9/92
SHEET 5 OF 16

FIGURE 3.
USACE WETLAND DELINEATIONS
DREDGE AND FILL PERMIT APPLICATION
See Key PAGE 5 OF 13
Source: LP. Rooks & Assoc. Inc.; OCT, 1992.

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

SCA/EA REC 00263 0407 07/92

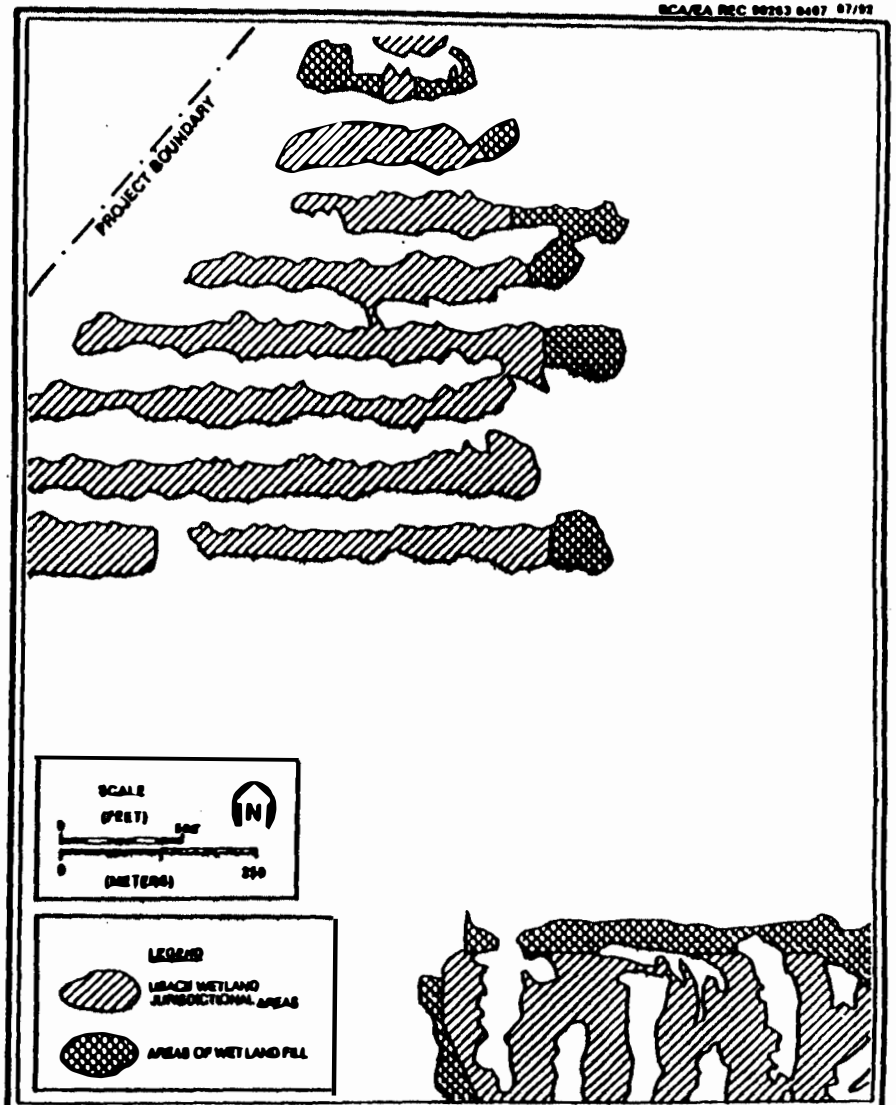


FIGURE 3.
USACE WETLAND DELINEATIONS
DREDGE AND FILL PERMIT APPLICATION
See Key PAGE 6 OF 13
Source: LP. Rooks & Assoc. Inc.; OCT, 1992.

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

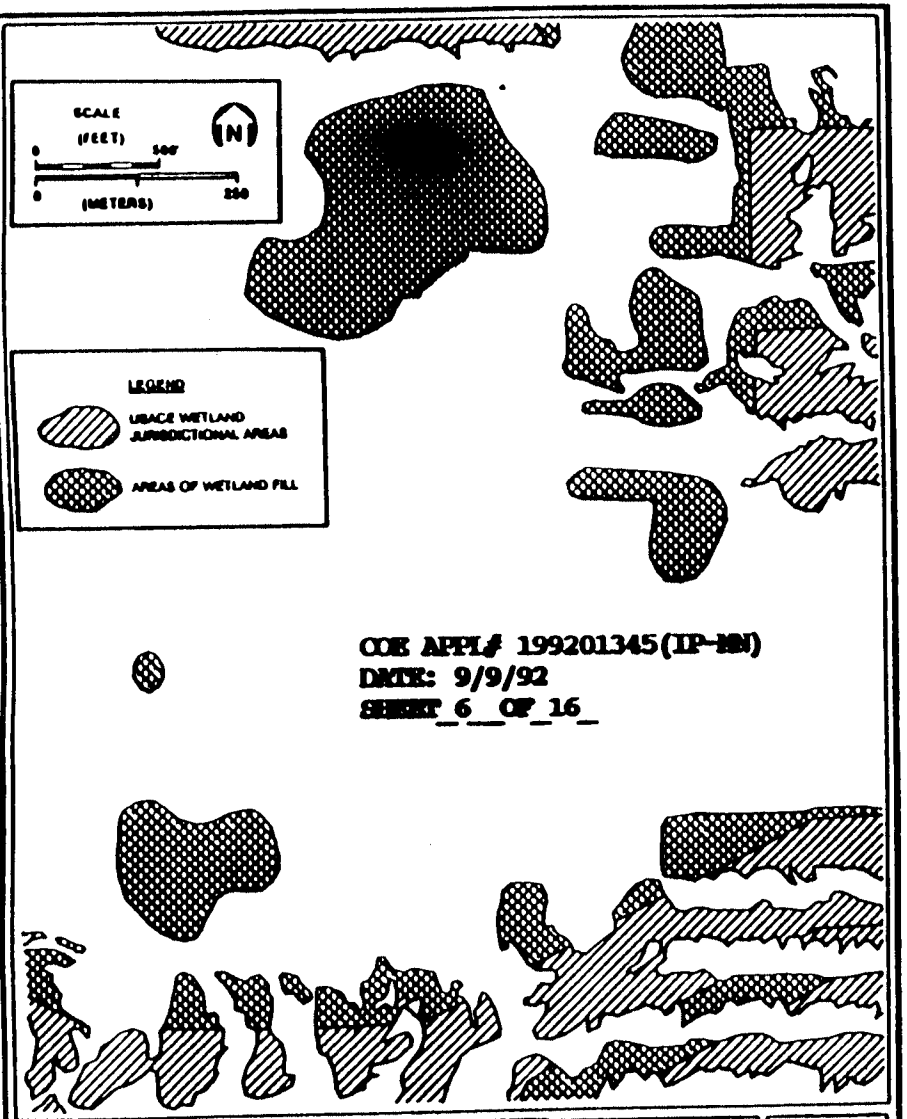


FIGURE 3.
USACE WETLAND DELINEATIONS (PAGE 7 OF 13)
DREDGE AND FILL PERMIT APPLICATION
Source: I.F. Rooks & Assoc. Inc.; OCT, 1992.

See Key

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

SCA/EA REC 98263 0407 07/92

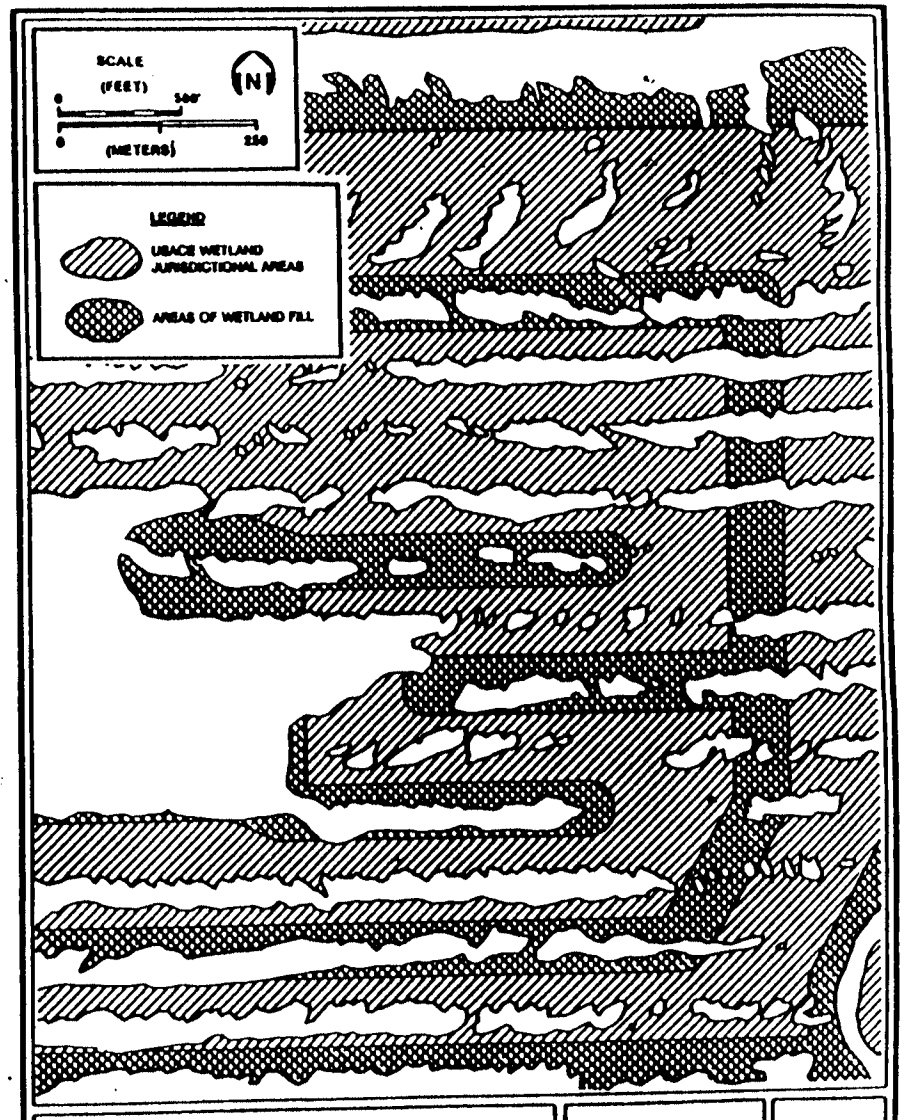


FIGURE 3.
USACE WETLAND DELINEATIONS (PAGE 8 OF 13)
DREDGE AND FILL PERMIT APPLICATION
Source: I.F. Rooks & Assoc. Inc.; OCT, 1992.

See Key

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

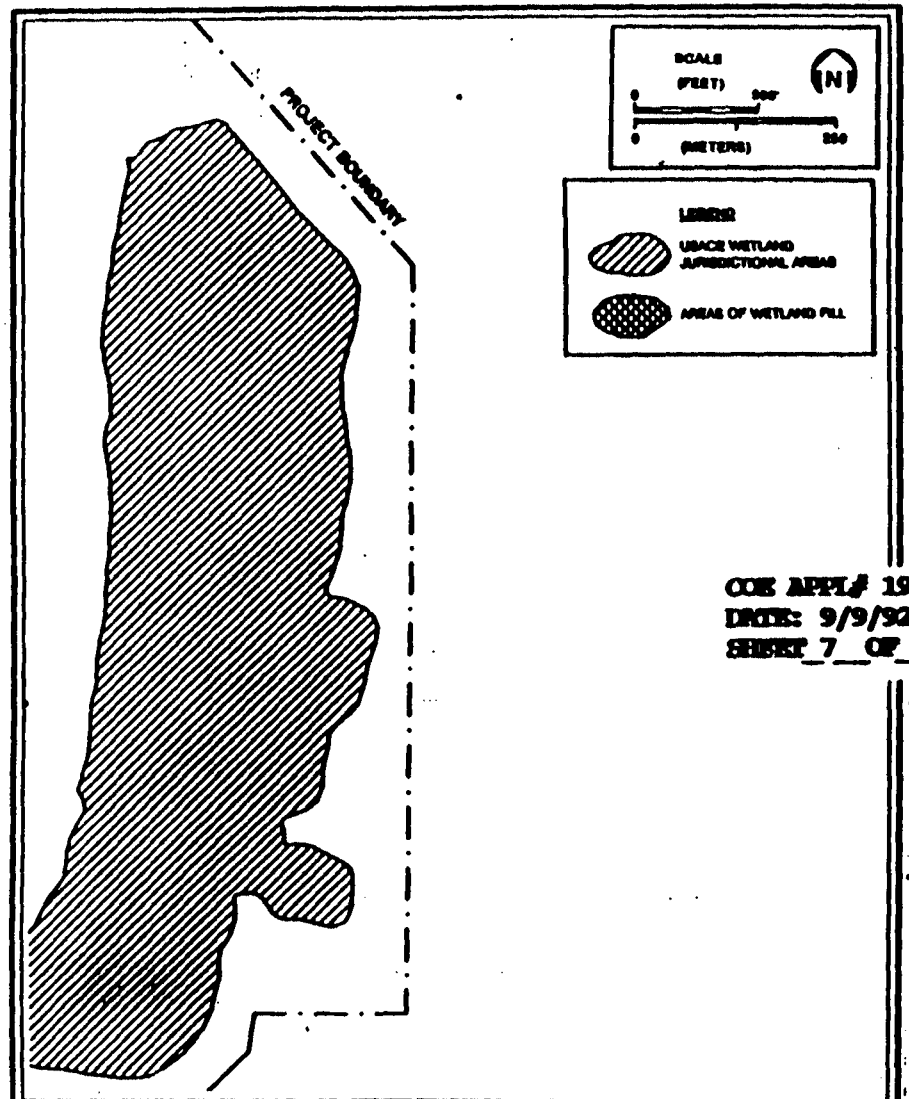


FIGURE 3.

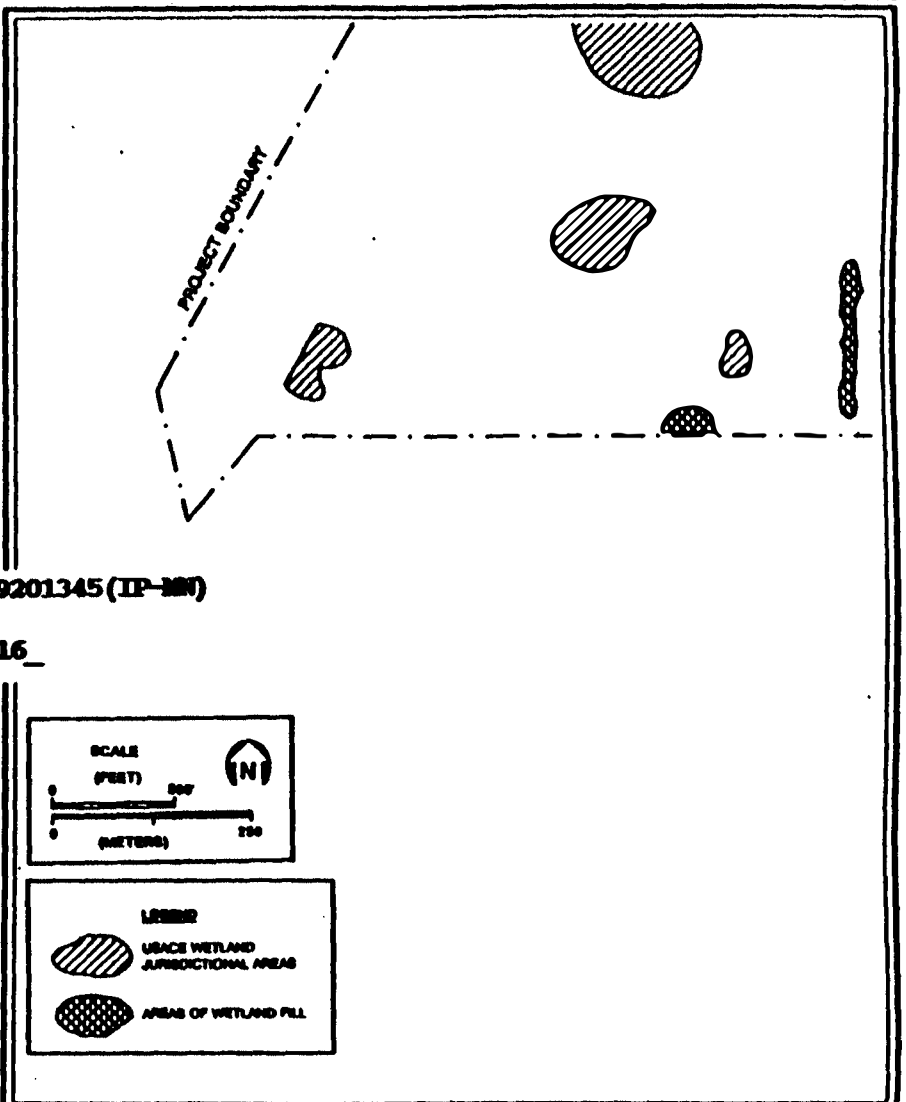
USACE WETLAND DELINEATIONS (See Key PAGE 9 OF 13)
DREDGE AND FILL PERMIT APPLICATION

Source: I.F. Rooks & Assoc. Inc.; OCT. 1992.

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

SCA/EA REC 90263 0407 07/92



COE APPL# 199201345(IP-MN)
DATE: 9/9/92
SHEET 7 OF 16

FIGURE 3.

USACE WETLAND DELINEATIONS (See Key PAGE 10 OF 13)
DREDGE AND FILL PERMIT APPLICATION

Source: I.F. Rooks & Assoc. Inc.; OCT. 1992.

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

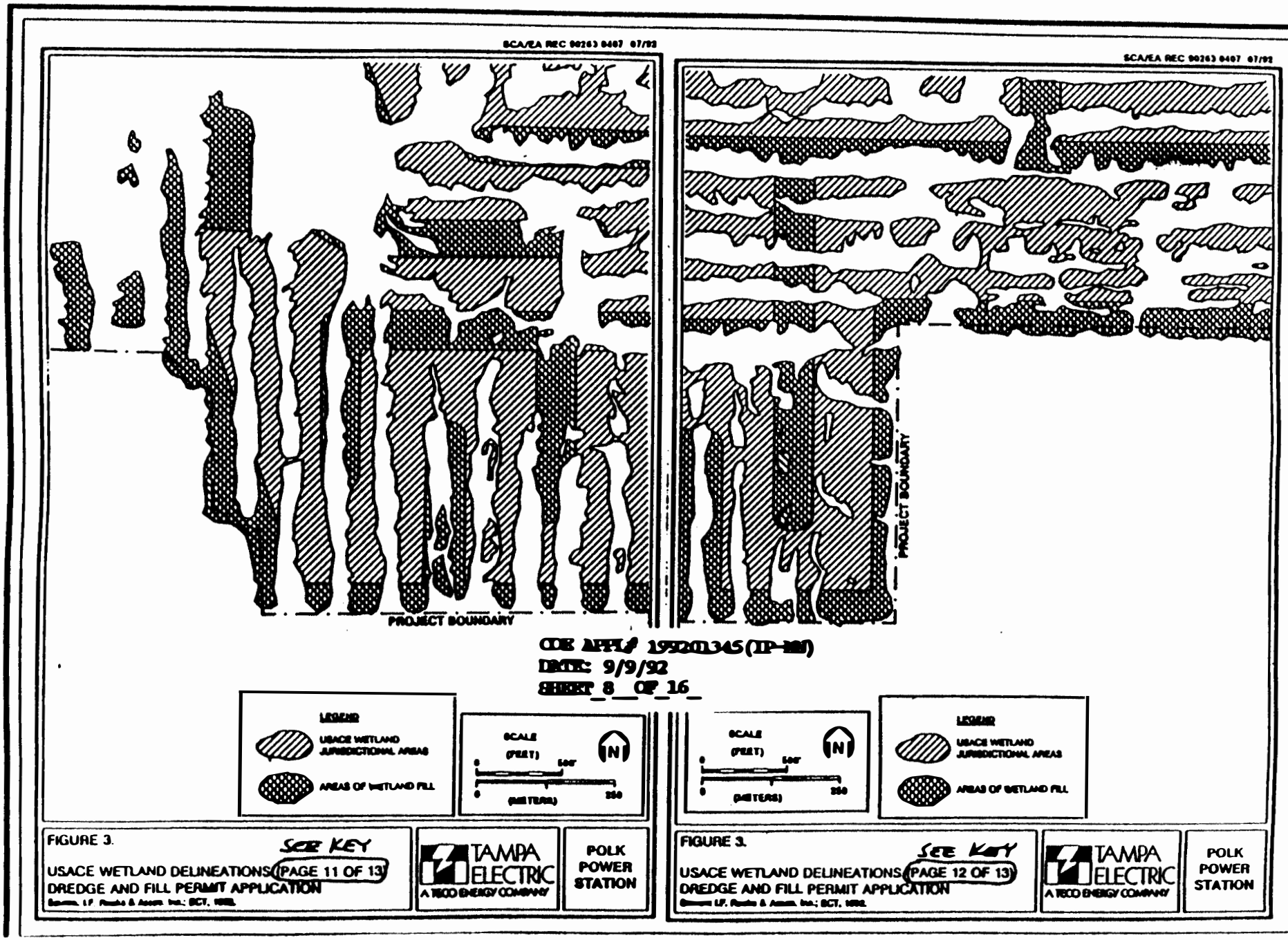


FIGURE 3. SEE KEY

USACE WETLAND DELINEATIONS (PAGE 11 OF 13)
DREDGE AND FILL PERMIT APPLICATION

Source: L.F. Rooks & Assoc. Inc.; OCT. 1992.

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

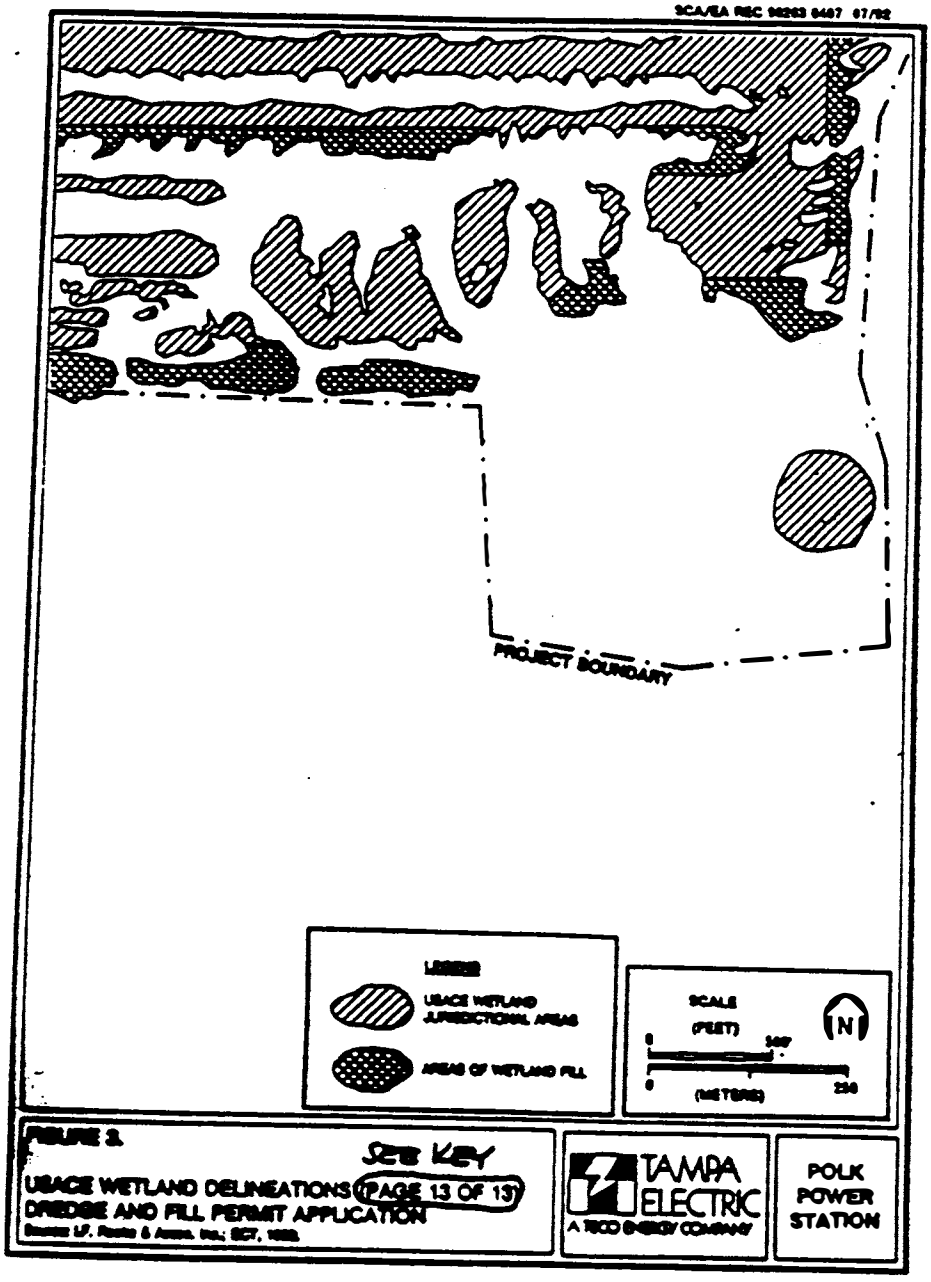
FIGURE 3. SEE KEY

USACE WETLAND DELINEATIONS (PAGE 12 OF 13)
DREDGE AND FILL PERMIT APPLICATION

Source: L.F. Rooks & Assoc. Inc.; OCT. 1992.

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION



COE APPL# 199201345(IP-HH)
DATE: 9/9/92
SHEET 9 OF 16

SCA/EA REC 90263 0407 07/92

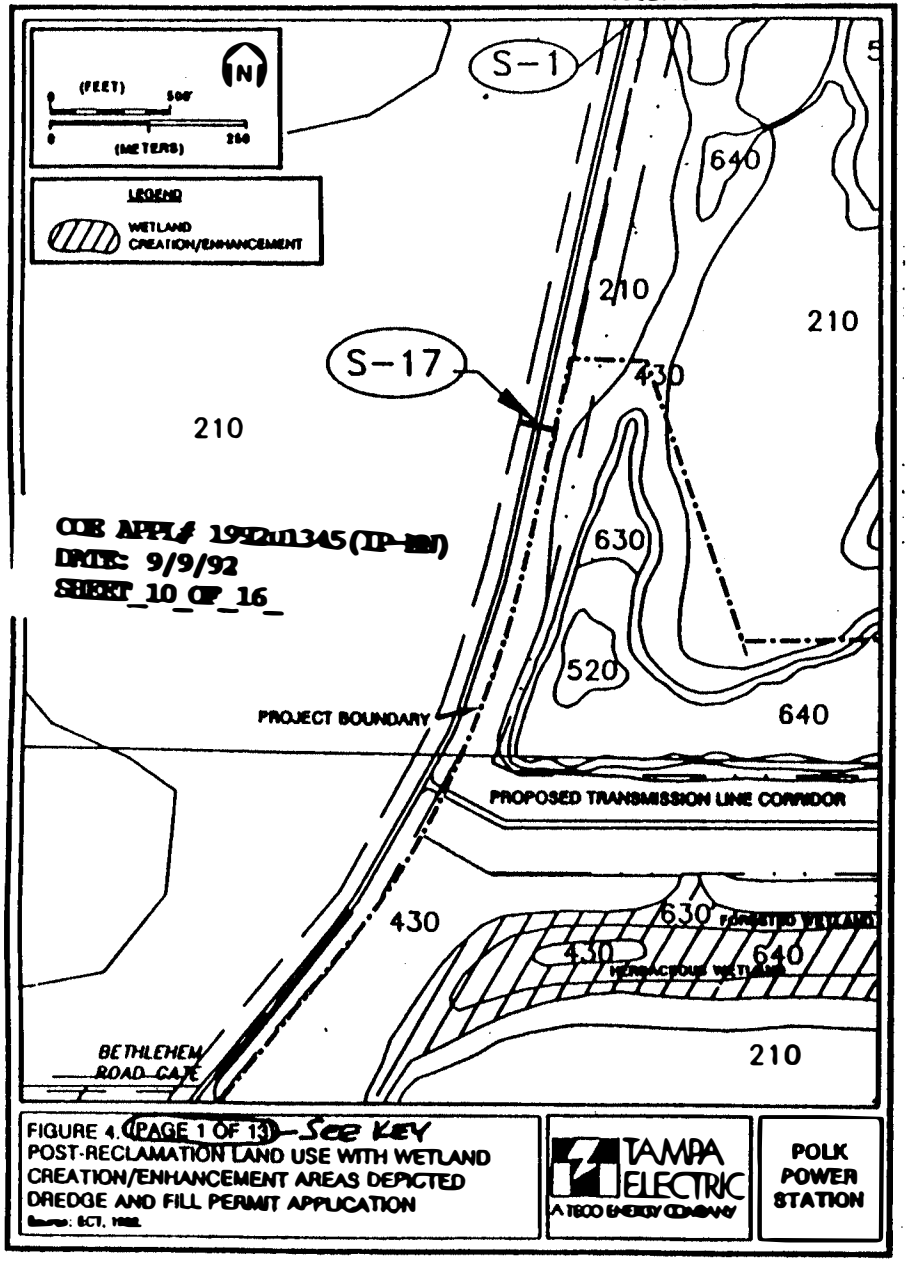


FIGURE 4. (PAGE 1 OF 13) — See Key
POST-RECLAMATION LAND USE WITH WETLAND CREATION/ENHANCEMENT AREAS DEPICTED
DREDGE AND FILL PERMIT APPLICATION
Source: SCT, 1992.

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

SCA/EA REC 90263 0407 07/92

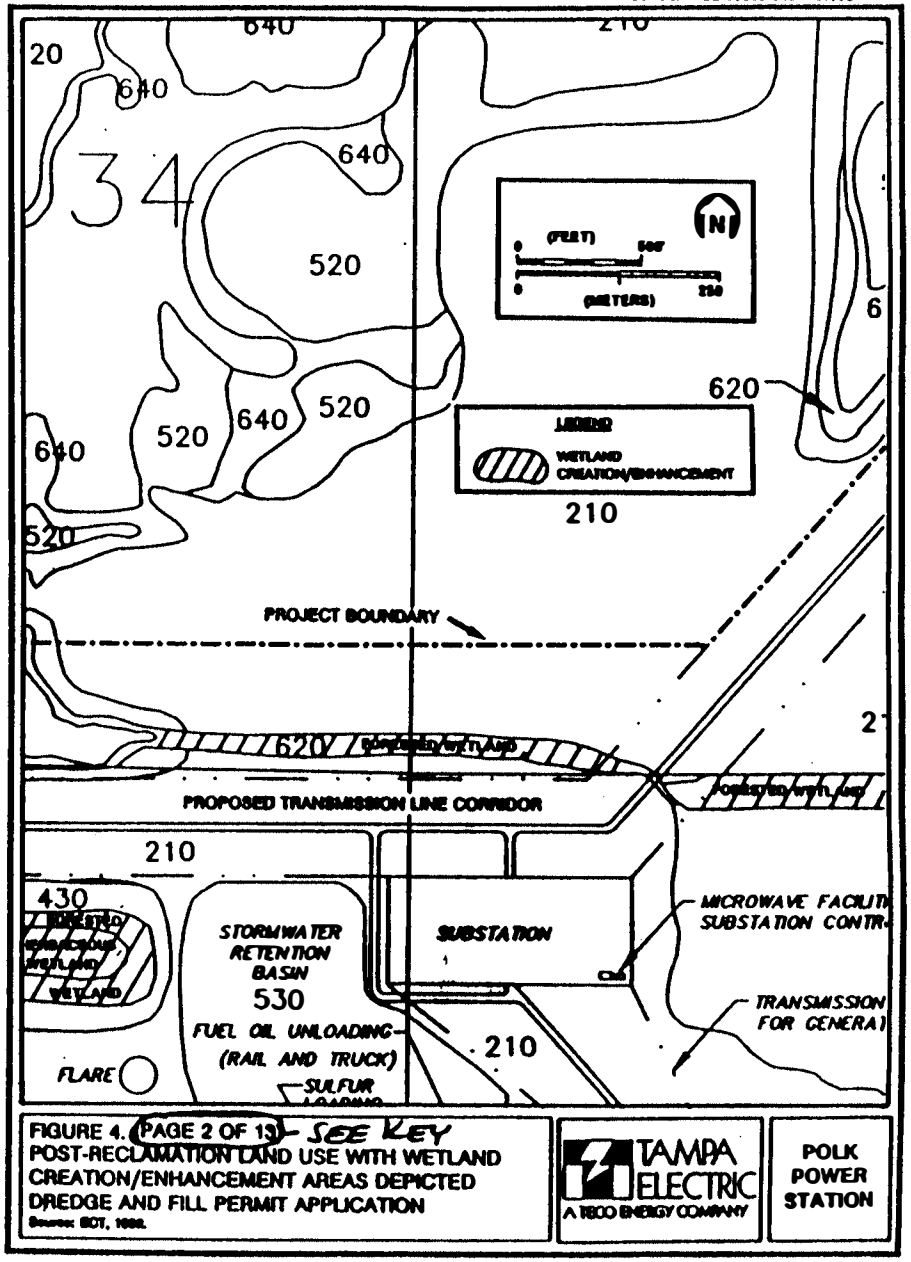


FIGURE 4. (PAGE 2 OF 13) — See Key
POST-RECLAMATION LAND USE WITH WETLAND CREATION/ENHANCEMENT AREAS DEPICTED
DREDGE AND FILL PERMIT APPLICATION
Source: SCT, 1992.

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

COE APPL# 199201345(IP-HN)
DATE: 9/9/92
SHEET 11 OF 16

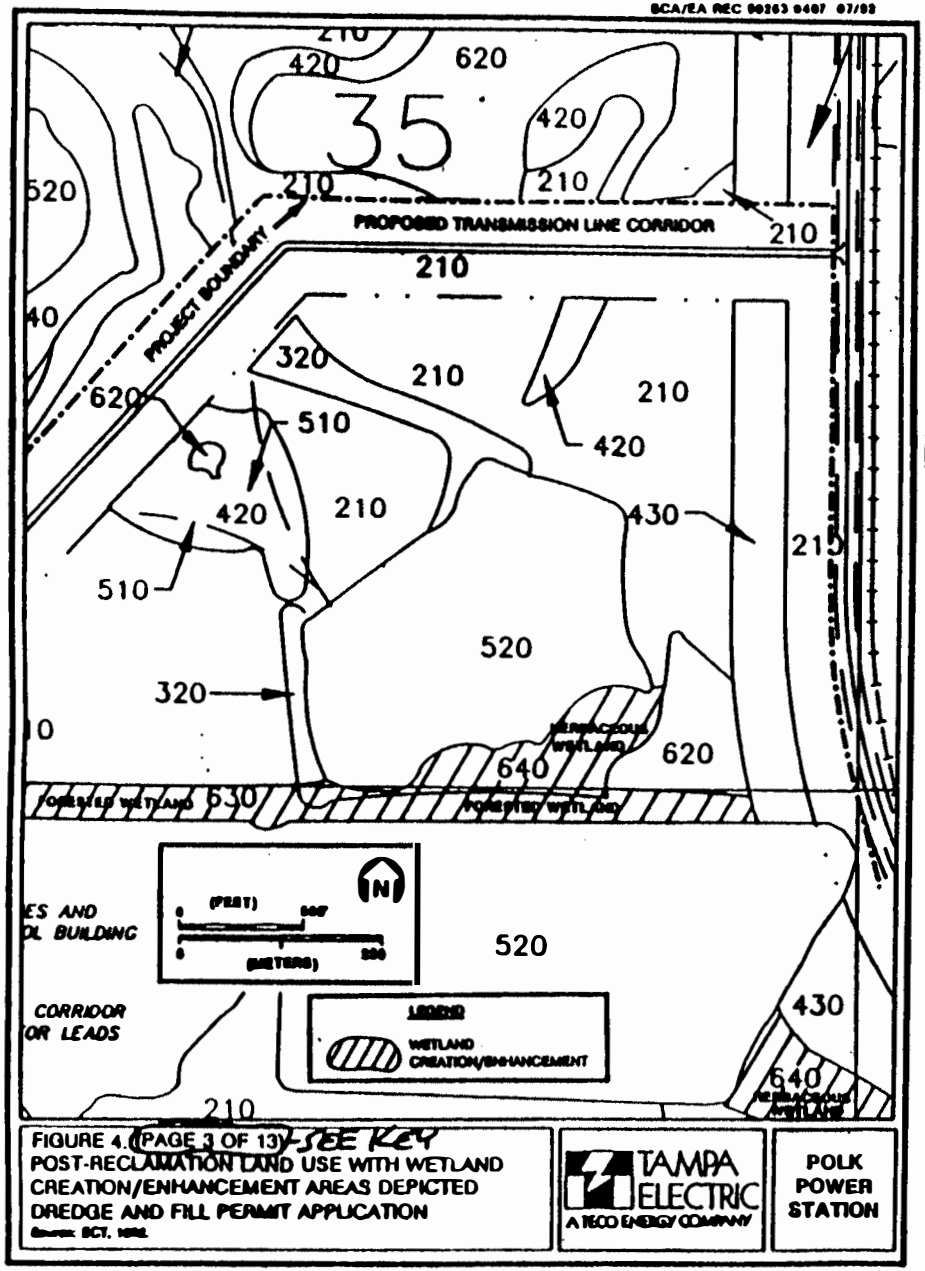


FIGURE 4. (PAGE 3 OF 13) - SEE KEY
POST-RECLAMATION LAND USE WITH WETLAND CREATION/ENHANCEMENT AREAS DEPICTED
DREDGE AND FILL PERMIT APPLICATION
Source: SCT, 1992.

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

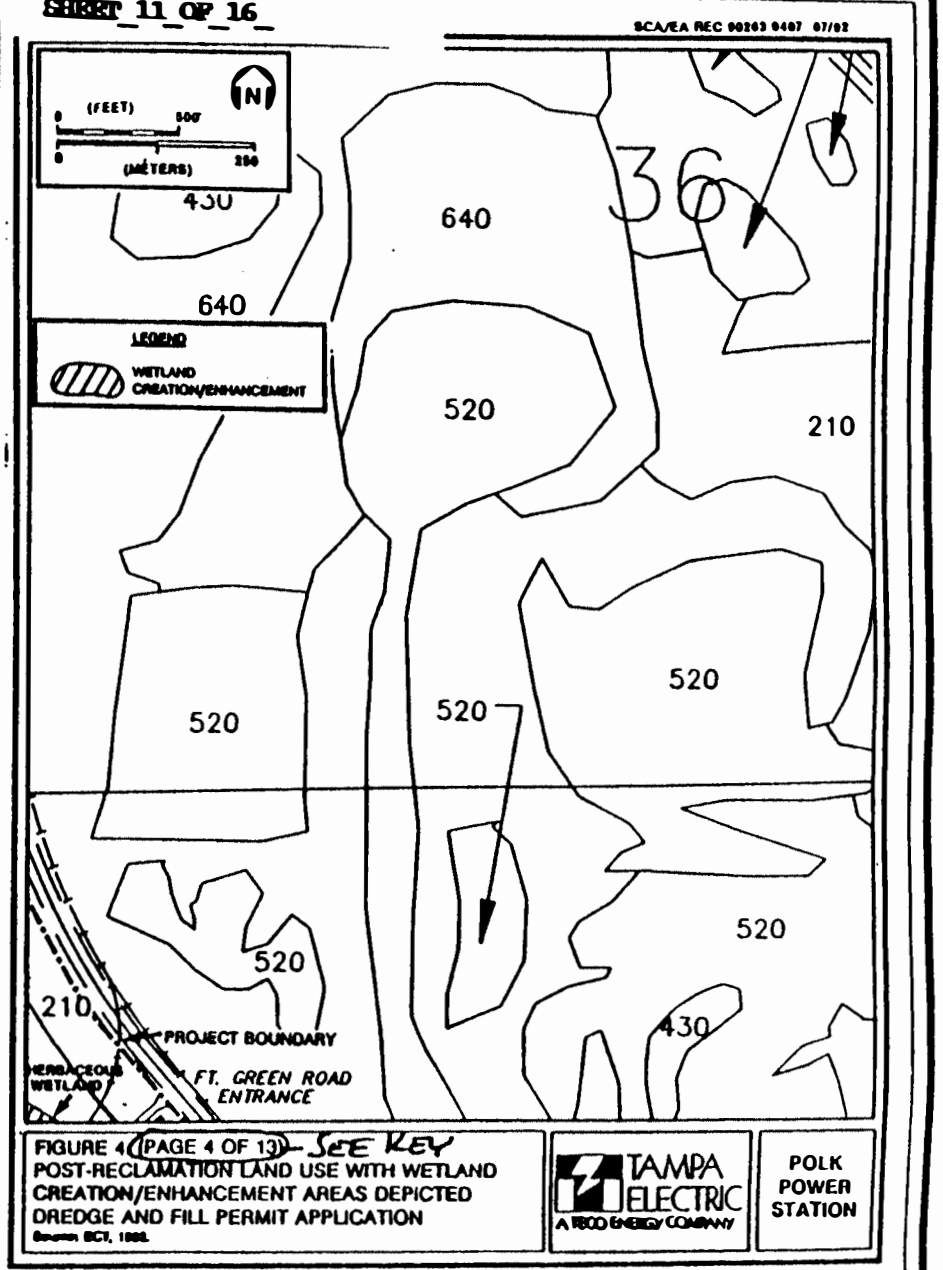


FIGURE 4. (PAGE 4 OF 13) - SEE KEY
POST-RECLAMATION LAND USE WITH WETLAND CREATION/ENHANCEMENT AREAS DEPICTED
DREDGE AND FILL PERMIT APPLICATION
Source: SCT, 1992.

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

COE APPL# 199201345(IP-MN)
DATE: 9/9/92
SHEET 12 OF 16

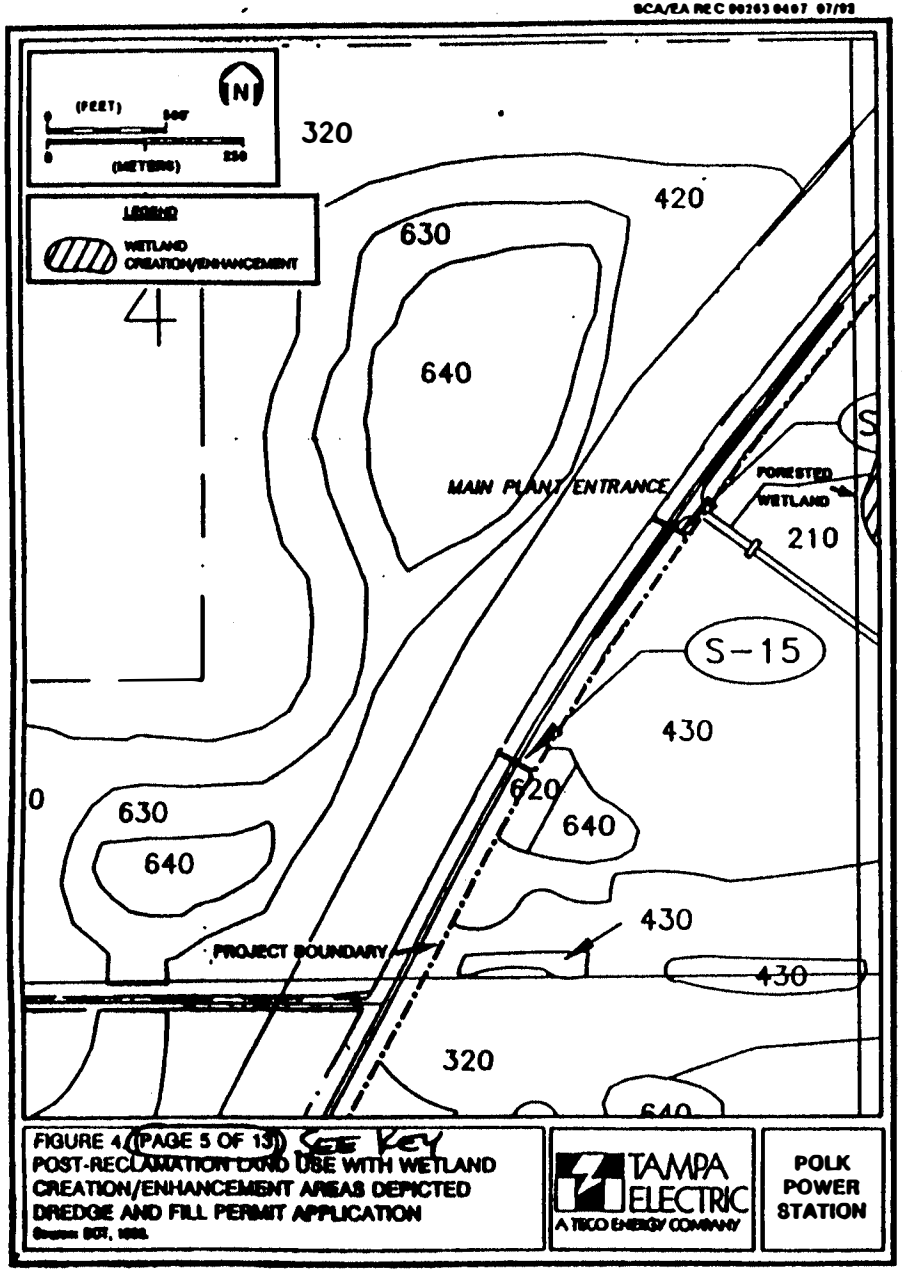


FIGURE 4. (PAGE 5 OF 13) SEE KEY
POST-RECLAMATION LAND USE WITH WETLAND CREATION/ENHANCEMENT AREAS DEPICTED
DREDGE AND FILL PERMIT APPLICATION
Source: SCT, 1992.

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

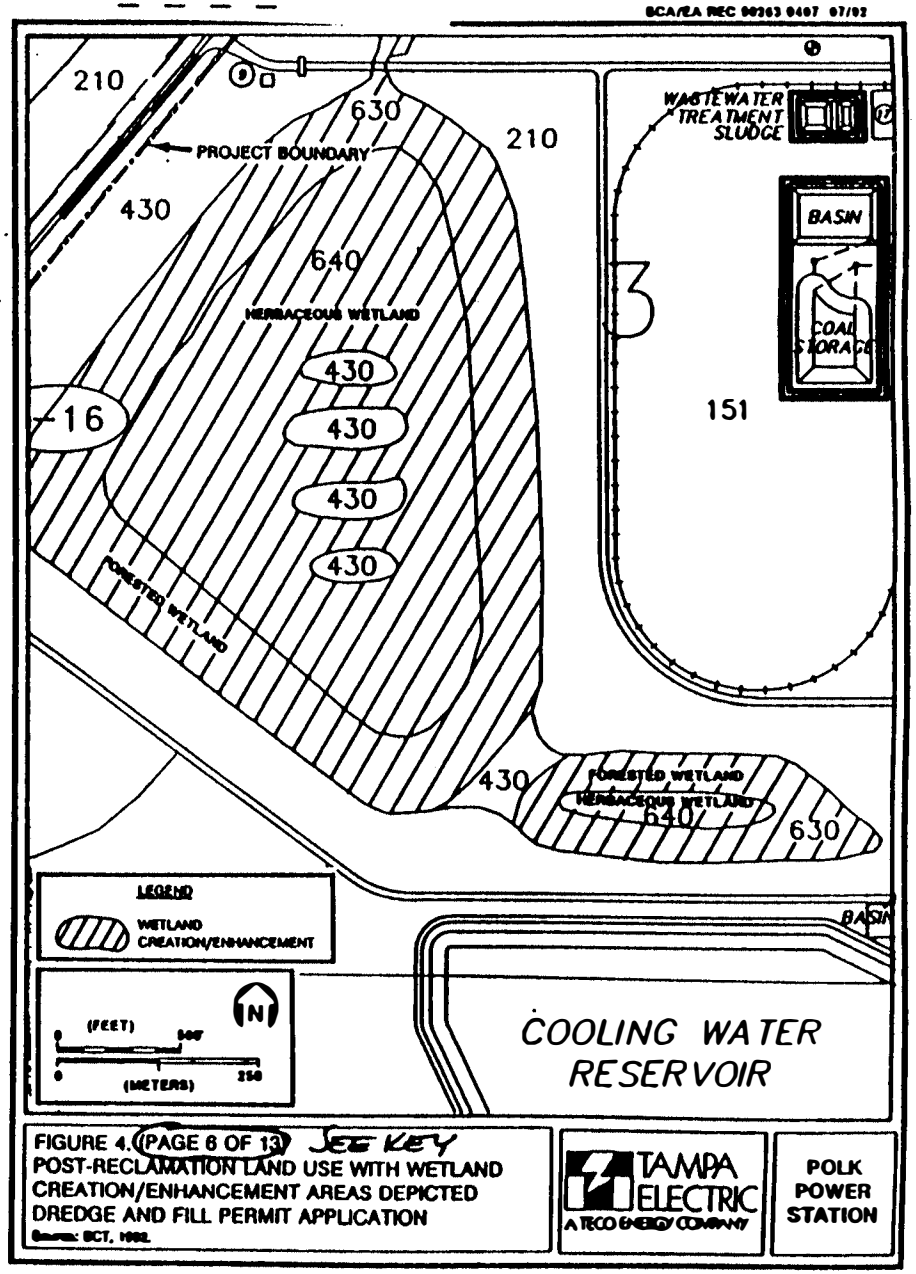


FIGURE 4. (PAGE 6 OF 13) SEE KEY
POST-RECLAMATION LAND USE WITH WETLAND CREATION/ENHANCEMENT AREAS DEPICTED
DREDGE AND FILL PERMIT APPLICATION
Source: SCT, 1992.

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

COE APPL# 199201345(IP-SW)
DATE: 9/9/92
SHEET 13 OF 16

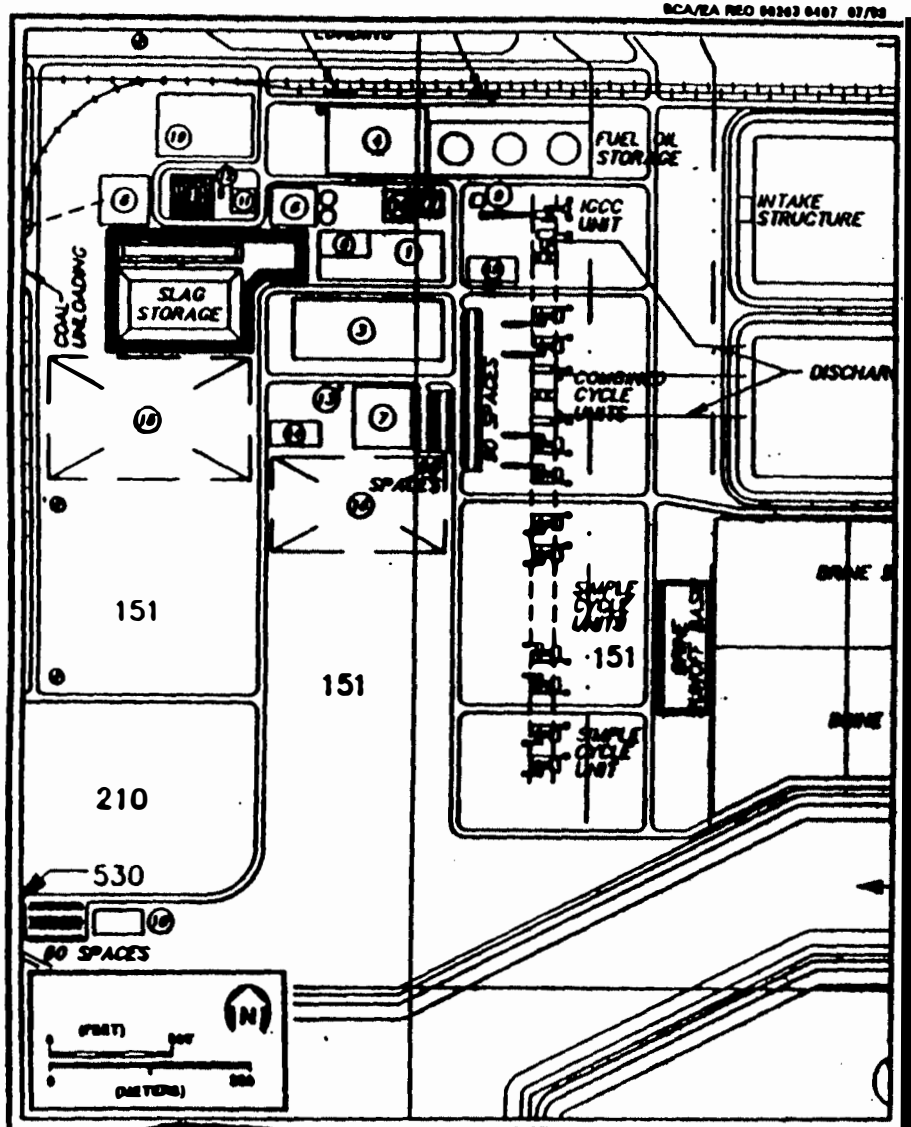


FIGURE 4. (PAGE 7 OF 13) See Key
POST-RECLAMATION LAND USE WITH WETLAND CREATION/ENHANCEMENT AREAS DEPICTED
DREDGE AND FILL PERMIT APPLICATION

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

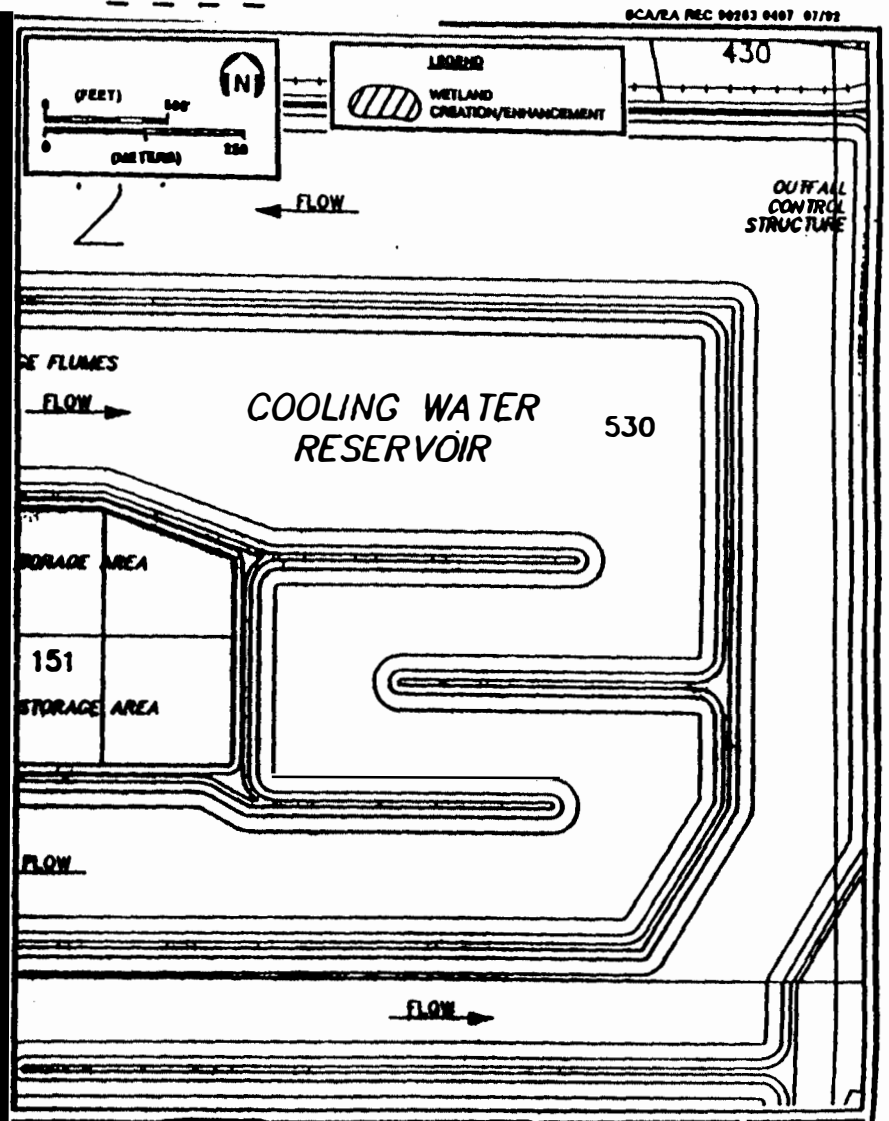


FIGURE 4. (PAGE 8 OF 13) See Key
POST-RECLAMATION LAND USE WITH WETLAND CREATION/ENHANCEMENT AREAS DEPICTED
DREDGE AND FILL PERMIT APPLICATION

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

COE APPL# 199201345(IP-PN)
DATE: 9/9/92
SHEET 14 OF 16

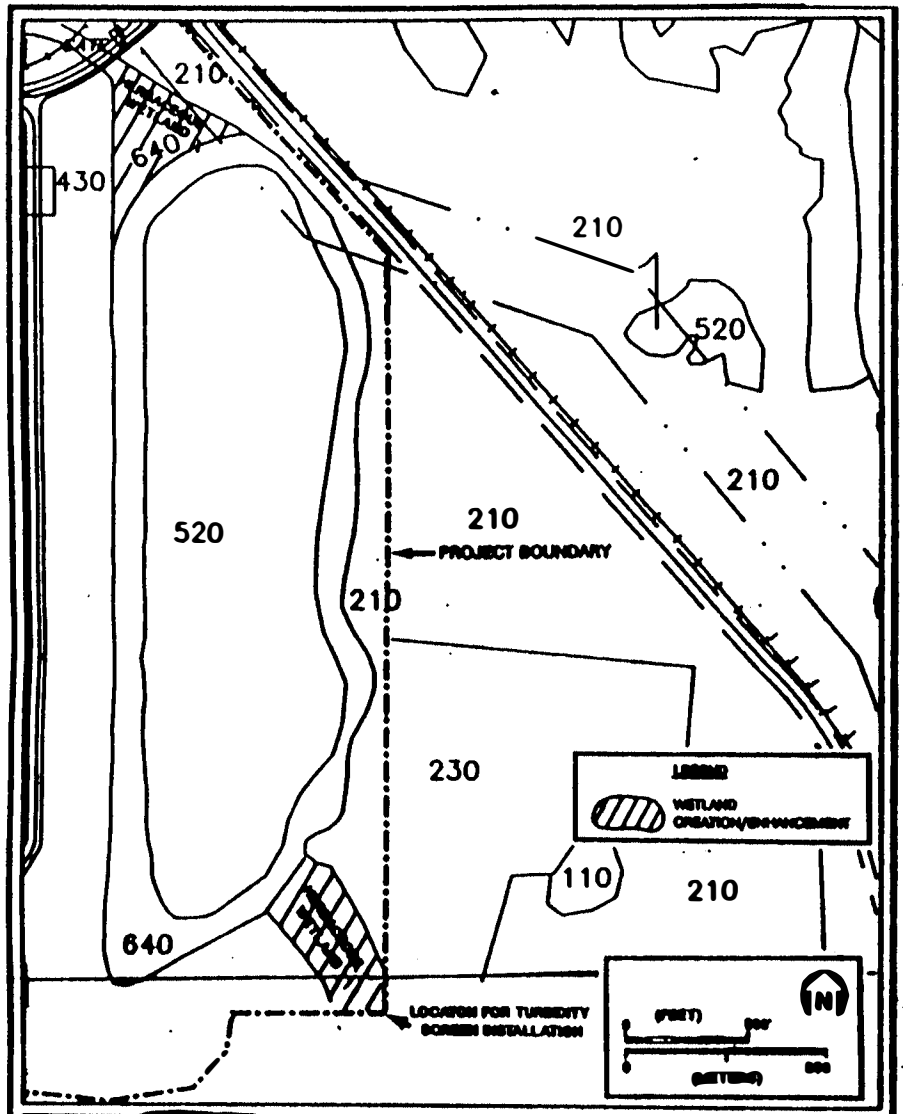


FIGURE 4. (PAGE 9 OF 13) SEE KEY
POST-RECLAMATION LAND USE WITH WETLAND CREATION/ENHANCEMENT AREAS DEPICTED
DREDGE AND FILL PERMIT APPLICATION

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

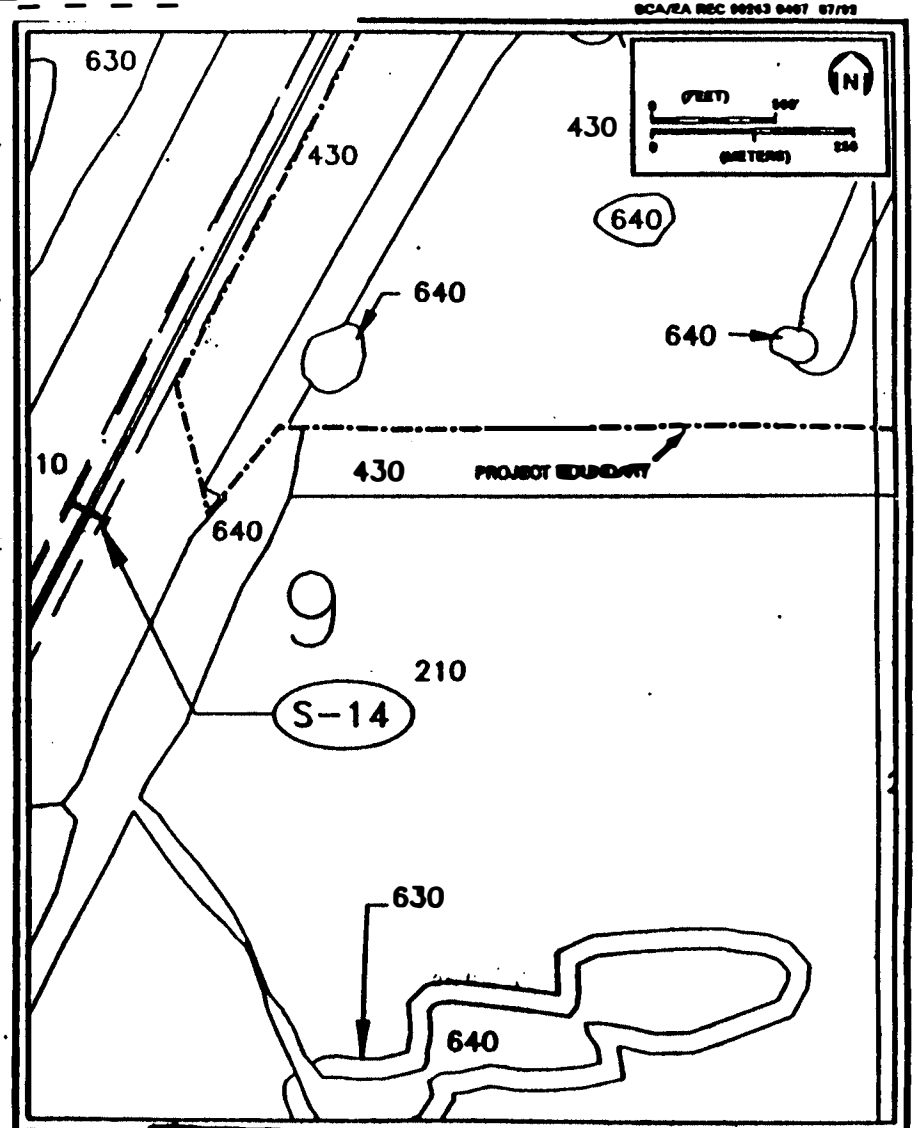


FIGURE 4. (PAGE 10 OF 13) SEE KEY
POST-RECLAMATION LAND USE WITH WETLAND CREATION/ENHANCEMENT AREAS DEPICTED
DREDGE AND FILL PERMIT APPLICATION

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

COE APPL# 199201345(IP-RM)
DATE: 9/9/92
SHEET 15 OF 16

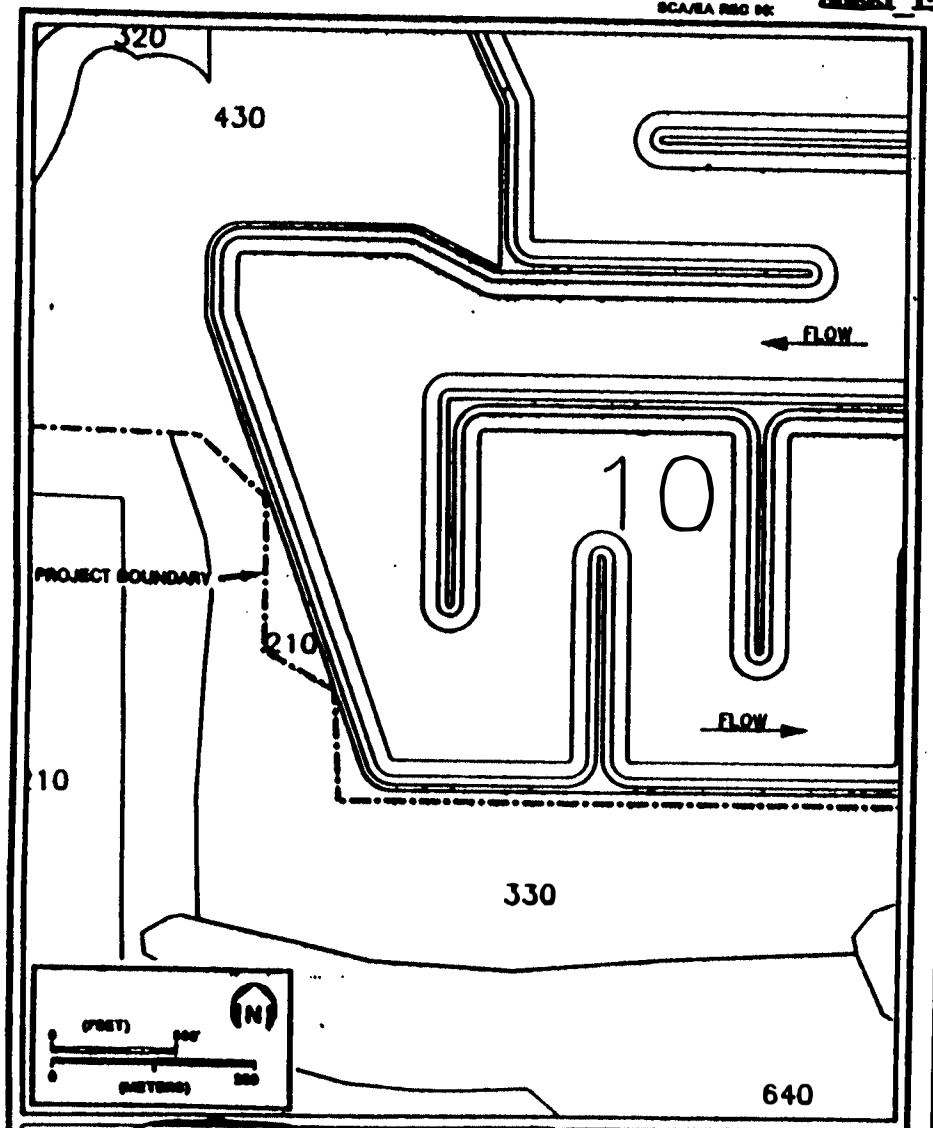


FIGURE 4. (PAGE 11 OF 13) SEE KEY
POST-RECLAMATION LAND USE WITH WETLAND CREATION/ENHANCEMENT AREAS DEPICTED
DREDGE AND FILL PERMIT APPLICATION

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

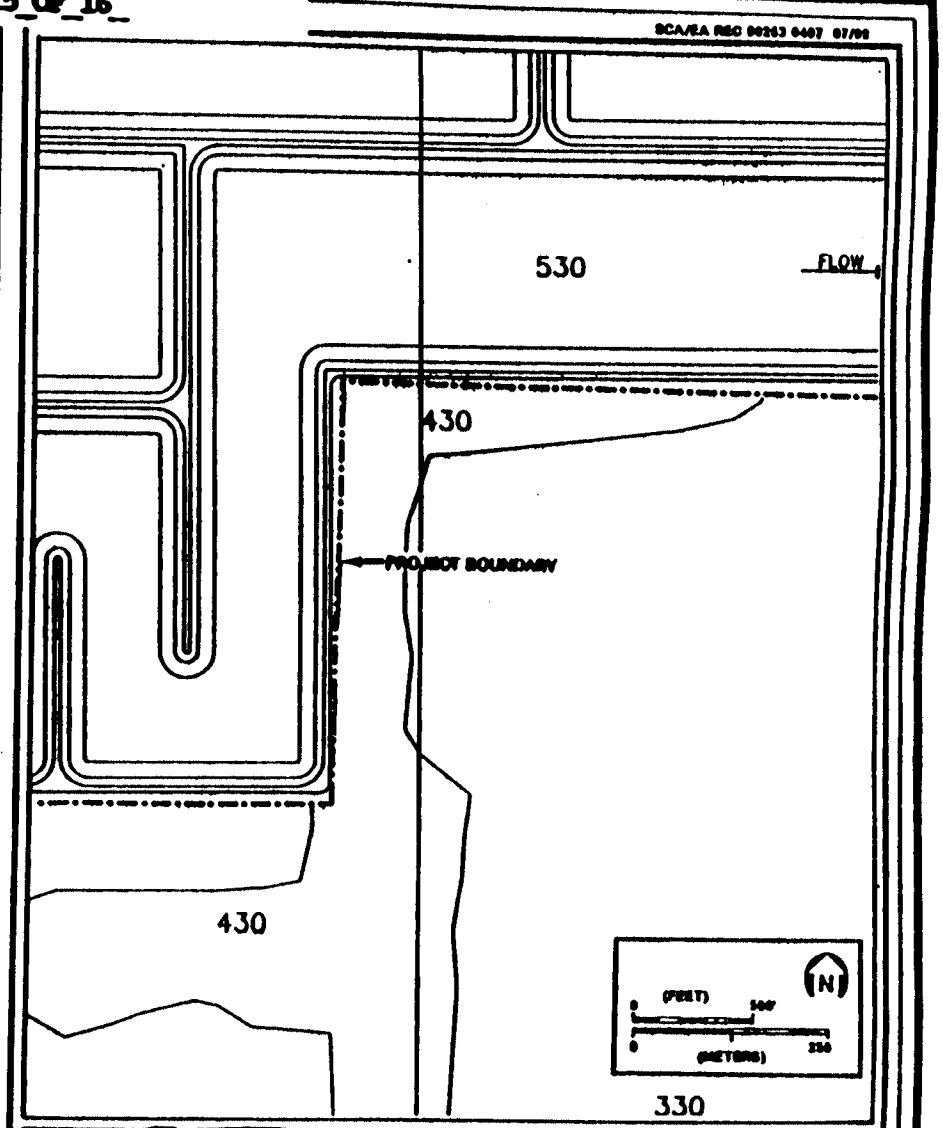


FIGURE 4. (PAGE 12 OF 13) SEE KEY
POST-RECLAMATION LAND USE WITH WETLAND CREATION/ENHANCEMENT AREAS DEPICTED
DREDGE AND FILL PERMIT APPLICATION

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

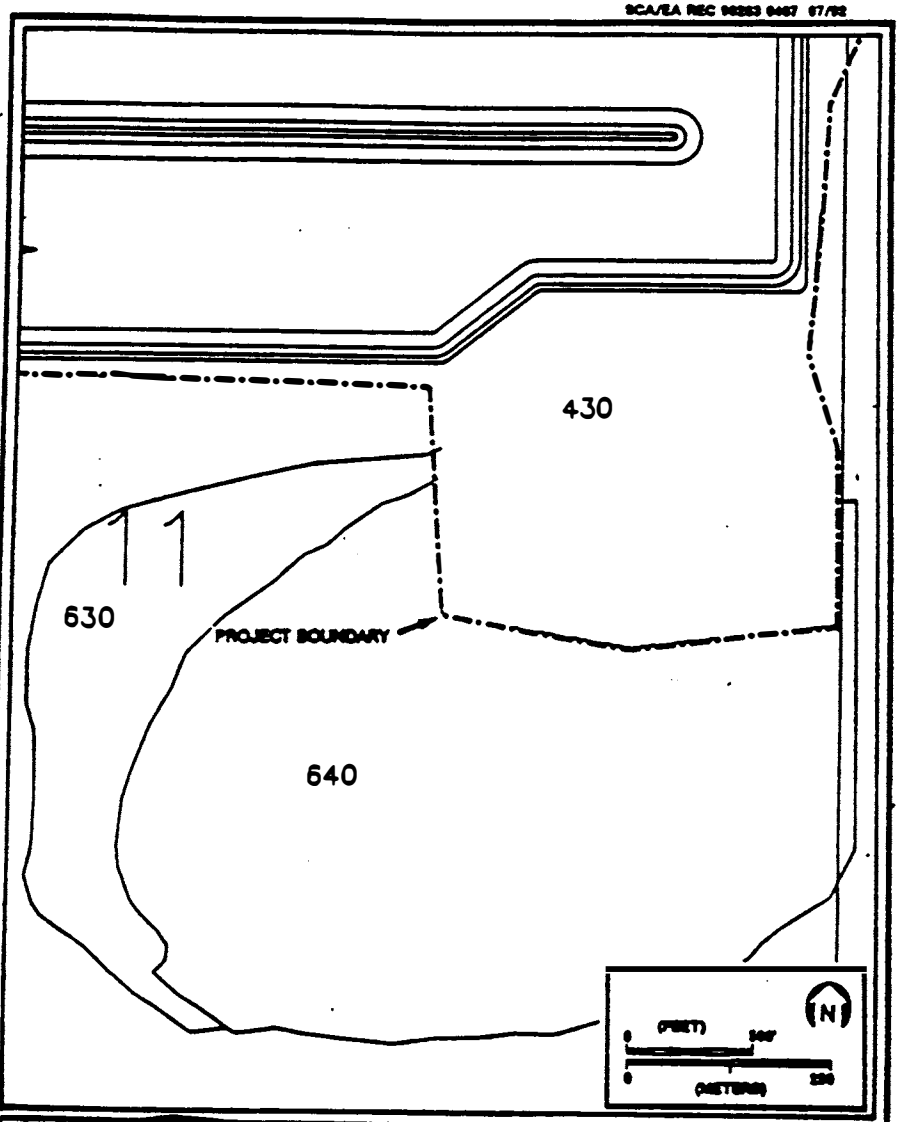


FIGURE 4.0 PAGE 13 OF 15 SEE KEY
POST-RECLAMATION LAND USE WITH WETLAND CREATION/ENHANCEMENT AREAS DEPICTED
DREDGE AND FILL PERMIT APPLICATION

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

COE APPL# 199201345(IP-RH)
DATE: 9/9/92
SHEET 16 OF 16

Florida Department of Environmental Regulation
Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

DER Form # 17-312.900(1)
Form Title Joint Ap. for Works in the Waters of Flor
Effective Date October 30, 1991
DER Application No. _____ (Filled in by DER)

Joint Application for Works in the Waters of Florida

Department of the Army (Corps)/Florida Department of Environmental Regulation (DER)/ Department of Natural Resources (DNR)/Delegated Water Management District (Delegated WMD)

Type or Print Legibly

Corps Application Number (official use only)	DER Application Number (official use only)

1. Applicant's Name and Address

Name Tampa Electric Company
Last Name, First name (if individual); Corporate Name; Name of Govt. Agency
Street Post Office Box 111
City Tampa State Florida Zip 33601-0111
Telephone (813) 228-4111 (Day) ( ) _____ (Night)

2. Name, Address, Zip Code, Telephone Number and Title of Applicant's Authorized Agent

Name A. Spencer Autry, Director of Environmental
Last Name, First Name
Corporate Name; Name of Govt. Agency Tampa Electric Company
Street Post Office Box 111
City Tampa State Florida Zip 33601-0111
Telephone (813) 228-4111 (Day) ( ) _____ (Night)

3. Name of Waterway at Work Site: Little Payne Creek

4. Street, Road or Other Location of Work State Road 37, County Road 630, Fort Green Road (see Figure 1)
Incorporated City or Town near Bradley Junction
Section 34 and 35 Township 31 South Range 23 East
Section 1,2,3,4,9,10,11, and 12 Township 32 South Range 23 East
Section _____ Township _____ Range _____
County(ies) Polk
Coordinates in Center of Project: **Federal Projects Only:** _____ x _____ y
Latitude 27 ° 43 ' 30 " Longitude 81 ° 59 ' 0 "
Lot N/A Block _____ Subd _____ Plat Bk _____ Pg _____
Directions to Locate Site: Approximately 12 miles south of Highway 60 in Mulberry, on the east side of State Road 37 (approximately 4 miles south of Bradley Junction, see Figure 1)

5. Names, Addresses, and Zip Codes of Adjacent Property Owners Whose Property Also Adjoins the Water (Excluding Applicant). Show Numbers or Names of These Owners on Plan Views. If More Than Six (6) Owners Adjoin the Project, You May Be Required to Publish a Public Notice for the DER.

1. Agrico Chemical Company
Post Office Box 1110
Mulberry, Florida 33689

2. American Cyanamid Company
Post Office Box 5290
Lakeland, Florida 33807

3. Guy A. Lamb
723 Northeast 7th Street
Fort Meade, Florida 33841

4. Seminole Fertilizer, Inc.
Post Office Box 471
Bartow, Florida 33830

5. _____

6. _____

Northwest District
160 Governmental Center
Pensacola, Florida 32501-5794
904 436 8300

Northeast District
Suite 8200 7825 Baymeadows Way
Jacksonville, Florida 32256-7577
904 448 4300

Central District
3319 Maguire Blvd. Suite 232
Orlando, Florida 32803-3767
407 894-7555

Southwest District
4520 Oak Fair Blvd.
Tampa, Florida 33610-7347
813 623 5561

South District
2269 Bay St.
Fort Myers, Florida 33901-2896
813 332 6975

Southeast District
1900 S. Congress Ave., Suite A
West Palm Beach, Florida 33406
407 433 2650

DER Form # 17-312.900(1)
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Effective Date October 30, 1991
DER Application No _____ (Filled in by DER)

6. Proposed Use (Check one or more as applicable) Private Single Family ☐ Multi Family ☐
Public ☐ Commercial ☒ New Work ☐ Alteration of Existing Works ☐ Maintenance ☐ Other (Explain) _____

7. Desired Permit Duration (see Fee Schedule)
5 Yr ☒ 10 Yr ☐ Other (Specify) _____

8. General Permit or Exemption Requested
DER General Permit FAC Rule 17-312. _____ DER Exemption FAC Rule 17-312. _____ Section 403 _____ F.S.

9. Total Extent of Work in Jurisdictional Open Waters or Wetlands: (Use additional sheets and provide complete breakdown of each category if more space is needed.

a. Within Corps Jurisdiction:
Fill: 11,025,471 Sq. Ft. 253.11 Acres 3,550,075 Cu. Yds.
Excavation: N/A Sq. Ft. N/A Acres N/A Cu. Yds.

b. Within DER Jurisdiction:
Fill: N/A Sq. Ft. _____ Acres _____ Cu. Yds.
Excavation: N/A Sq. Ft. _____ Acres _____ Cu. Yds.
Excavation Waterward of MHW N/A cu. yds. (Information needed for DNR)

c. DER Jurisdictional Area Severed (Area Landward of Fill Structures which will be Severed):
N/A Sq. Ft. _____ Acres

d. DER Jurisdictional Area Created (New Excavation from Uplands, Exclusive of Mitigation):
N/A Sq. Ft. _____ Acres

e. Docks, Piers, and Over Water Structures:
Total Number of Slips N/A Total Number of Mooring Pilings _____
Length _____ Width _____ Height above MHW _____
Length _____ Width _____ Height above MHW _____
Number of Finger Piers _____ Length _____ Width _____ Height _____
Number of Finger Piers _____ Length _____ Width _____ Height _____
Total area of structure over waters & wetlands _____ sq. ft.
Use of structure _____

Will the docking facility provide:	No	Yes	Number
Liveaboard Slips	☐	☐	_____
Fueling Facilities	☐	☐	_____
Sewage Pump-out Facilities	☐	☐	_____
Other Supplies or Services Required for Boating (Excluding refreshments, bait and tackle)	☐	☐	_____

f. Seawall length N/A ft. Seawall material _____
Riprap revetment length _____ ft. Slope _____ H: _____ V Toe width _____ ft.
Riprap at toe of seawall length _____ ft. Slope _____ H: _____ V Toe width _____ ft.
Size of riprap _____
Type of riprap or seawall material _____

g. Other (See Item 10).

DER Form # 17-312.900(1)
Form Title Joint Application for Works in the Waters of Florida
Effective Date October 30, 1991
DER Application No. _____ (Filled in by DER)

10. Description of Work (be specific; use additional sheets as necessary).

See Attachment A, Response to Item 10.

11. Turbidity, Erosion, and Sedimentation Controls Proposed:

Existing mine cuts to be dewatered prior to commencement of grading activities. A silt screen will be erected upstream of the point of offsite discharge (see Figure 5, Sheet 9 of 13, and Attachment A, Response to Item 10).

12. Date Activity is Proposed to Commence January 1994 ; to be Completed January 1997

Total Time Required to Construct _____

13. Previous Applications for this Project have been:

	DER No.	Corps No.
A. Denied (date) _____		
B. Issued (date) April 20, 1990	531620259	89IPC-20202 06/29/90
		20223 08/30/89
C. Other (please explain) _____		

Differentiate between existing work and proposed work on the drawings.

14. Certification. Application is hereby made for a permit or permits to authorize the activities described herein.

A. I Certify That: (Please check appropriate space)

1. I am the record owner ☐ ; lessee ☐ , or the record easement holder ☐ of the property on which the proposed project is to be undertaken, as described in the attached legal document.

2. I am **not** [X] the record owner, lessee, or record easement holder of the property on which the proposed project is to be undertaken, as described in the attached legal document, but I will have, before undertaking the proposed work, the requisite property interest. (Please explain what the interest will be and how it will be acquired.)

Attach legal description of property or copy of deed to the property on which project is to occur (must be provided) (See Attachment B)

B. I understand I may have to provide any additional information/data that may be necessary to provide reasonable assurance or evidence that the proposed project will comply with the applicable State Water Quality Standards or other environmental standards both before construction and after the project is completed.

C. In addition, I agree to provide entry to the project site for inspectors with proper identification or documents as required by law from the environmental agencies for the purpose of inspecting the site. Further, I agree to provide entry to the project site for such inspectors to monitor permitted work, if a permit is granted.

D. This is a Joint Application and is **not** a Joint Permit. I hereby acknowledge the obligation and responsibility for obtaining **all** of the required state, federal or local permits **before** commencement of construction. I also understand that before commencement of this proposed project, I must be granted separate permits or authorizations from the U.S. Corps of Engineers, the U.S. Coast Guard, the Department of Environmental Regulation, the Delegated Water Management District (where applicable), and the Department of Natural Resources, as necessary.

DER Form # 17-312.900(1)
Form Title Joint Ap.for Works in the Waters of Florida
Effective Date October 30, 1991
DER Application No. _____ (Filled in by DER)

E. I am familiar with the information contained in this application, and that to the best of my knowledge and belief, such information is true, complete and accurate. I further certify that I possess the authority to undertake the proposed activities or am acting as the duly authorized agent of the applicant. I understand that knowingly making any false statement or representation in this application is a violation of Section 403.161, F.S. and Chapter 837, F.S.

A. Spencer Autry — Typed/Printed Name of Applicant or Agent

Signature of Applicant or Agent

July 24, 1992 — Date

Director, Environmental — (Corporate Title if applicable)

AN AGENT MAY SIGN ABOVE IF APPLICANT COMPLETES THE FOLLOWING:

I hereby designate and authorize the agent listed above to act on my behalf as my agent in the processing of this permit application and to furnish on request, supplemental information in support of the application.

Charles R. Black — Typed/Printed Name of Applicant

Signature of Applicant

July 24, 1992 — Date

Vice President, Project Management — (Corporate Title if applicable)

15. **For your information:** Section 370.034, Florida Statutes, requires that all dredge and fill equipment owned, used, leased, rented or operated in the state shall be registered with the Department of Natural Resources. Before selecting your contractor or equipment you may wish to determine if this requirement has been met. For further information, contact the Chief of the Bureau of Saltwater Licenses and Permits, Department of Natural Resources, 3900 Commonwealth Boulevard, Tallahassee, Florida 32399. Telephone No. (904) 487-3122. **This is not a requirement for a permit from the Department of Environmental Regulation.**

18 U.S.C. Section 1001 provides that, Whoever, in any manner within the jurisdiction of any department or agency of The United States knowingly and willfully falsifies, conceals, or covers up by any trick, scheme, or device a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statement or entry, shall be fined not more than $10,000 or imprisoned not more than five years, or both.

16. Please submit this completed form, with attached drawings and the complete DER processing fee (see Fee Schedule in Rule 17-4.050, F.A.C., copy attached) to the appropriate DER or Delegated WMD office with jurisdiction over the project site.

TAMPA ELECTRIC
A TECO ENERGY COMPANY

To Whom It May Concern:

Tampa Electric Company intends to acquire all lands designated in this application for the Polk Power Station and its associated facilities prior to the commencement of construction. This land will be used for construction of these facilities as described in the application.

Charles R. Black
Vice President
Project Management

/wp78

TAMPA ELECTRIC COMPANY
P.O. Box 111 Tampa, Florida 33601-0111 (813) 223-0888

TAMPA ELECTRIC
A TECO ENERGY COMPANY

To Whom It May Concern:

Please be advised that A. Spencer Autry, Director of Environmental, is the authorized representative of Tampa Electric Company concerning matters with which this permit application deals.

Sincerely,

Charles R. Black
Vice President
Project Management

/Permit2

TAMPA ELECTRIC COMPANY
P.O. Box 111 Tampa, Florida 33601-0111 (813) 223-0888

USACOE Public Notice

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P. O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

OCT 07 1992

Regulatory Division
Central Permits Branch

PUBLIC NOTICE

Permit Application No. 199201345(IP-MN)

TO WHOM IT MAY CONCERN: This district has received an application for a Department of the Army permit pursuant to Section 404 of the Clean Water Act as described below:

APPLICANT: Tampa Electric Company
Post Office Box 111
Tampa, Florida 33601-0111

WATERWAY & LOCATION: Wetlands associated with Little Payne Creek, south of SR 60 in Mulberry on the east side of SR 37 near Bradley Junction, Sections 34 and 35, Township 31 South, Range 23 East, Sections 1-4, and 9-12, Township 32 South, Range 23 East, Polk County, Florida.

LATITUDE & LONGITUDE: Latitude 27 43'30"N., Longitude 81 59'00"W.

WORK & PURPOSE: The applicant proposes to fill a total of 253.11 acres of wetlands (211.78 acres of phosphate mine cuts and 41.33 acres of highly stressed wetlands) for construction of the Polk Power Station. As mitigation, the applicant proposes to create/enhance a total of 168.41 acres of wetlands. The mitigation plan consists of recontouring the remaining mine cuts to enhance 18.94 acres of forested wetlands and 23.20 acres of herbaceous wetlands. The remainder includes 62.69 acres of forested wetland creation and 63.58 acres of herbaceous wetland creation. (see sheet 2 of the permit drawings).

NOTE: This public notice is being issued based on information furnished by the applicant. This information has not been verified.

AUTHORIZATION FROM OTHER AGENCIES: State Department of Environmental Regulation: State permit/certification is part of the State of Florida Power Plant Siting Act.

Comments regarding the application should be submitted in writing to the District Engineer at the above address within 30 days from the date of this notice.

If you have any questions concerning this application, you may contact Mike Nowicki of this office, telephone (904) 232-2171.

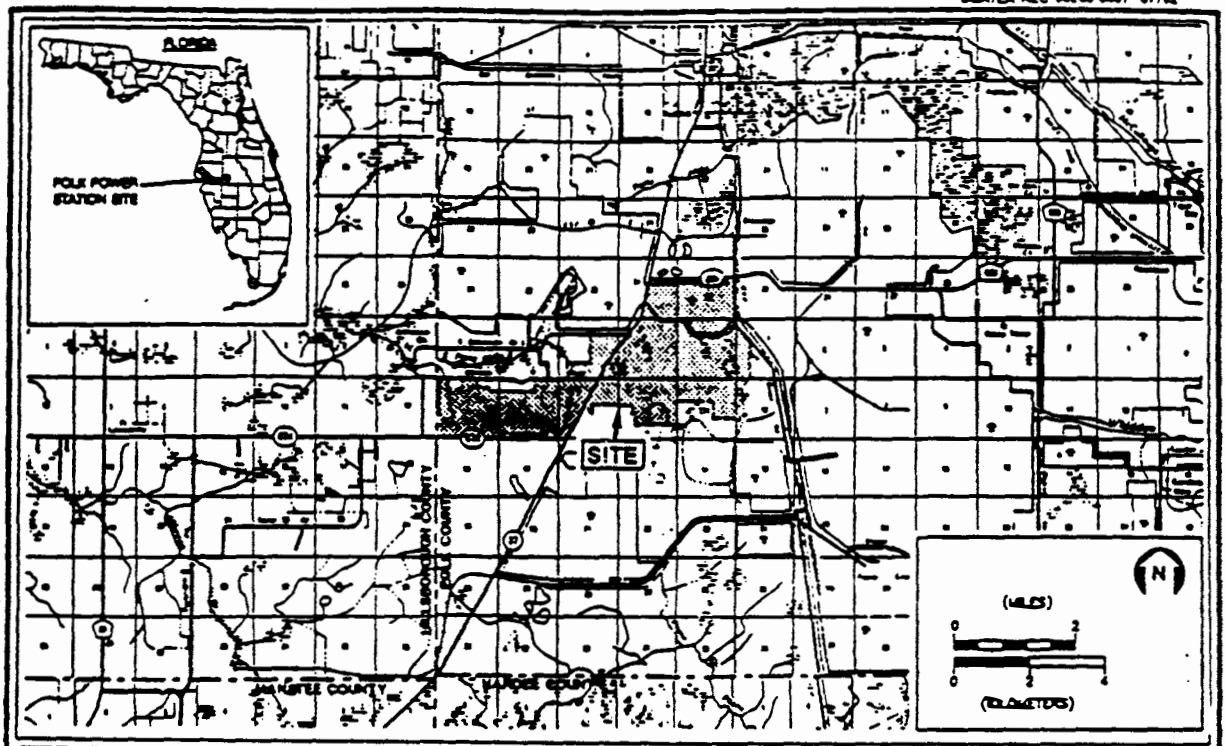

FIGURE 1.
SITE LOCATION MAP
DREDGE AND FILL PERMIT APPLICATION

Source: FDOT Maps, Hillsborough Co., Polk Co., Manatee Co., Hardee...

COE APPL# 199201345 (IP-MN)
DATE: 9/9/92
SHEET 1 OF 16

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

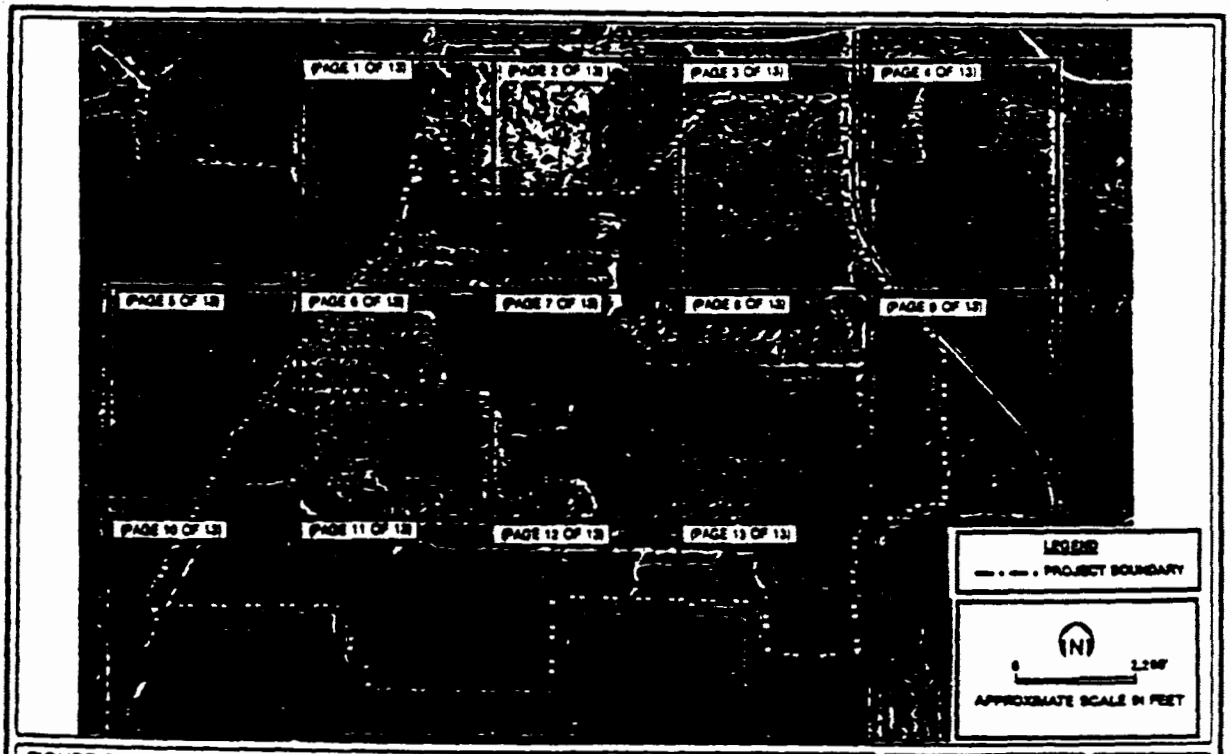

FIGURE 2.
KEY MAP FOR AERIAL PHOTOGRAPHS, POST-RECLAMATION TOPOGRAPHY AND POST-RECLAMATION VEGETATION
DREDGE AND FILL PERMIT APPLICATION

KEY SHEET

Source: U. Photo & Aerial, Inc., OCT 1992

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

A total of 253.11 acres (211.78 acres of phosphate mine cuts and 41.33 acres of highly disturbed wetland) are proposed for fill placement for construction of the Polk Power Station. As compensation for impacts to these wetland areas, Tampa Electric Company proposes to provide approximately 168.41 acres of combined wetland creation and wetland enhancement. The mitigation plan provides for recontouring of the remaining mine cuts to provide approximately 18.94 acres of forested wetland enhancement and 23.20 acres of herbaceous wetland enhancement. The remainder of the compensation package includes approximately 62.69 acres of forested wetland creation and approximately 63.58 acres of herbaceous wetland creation. The ratio of compensation acreage offered per acre of wetland fill is approximately 0.67:1.0. The compensation package will include planting of laurel oak (Quercus laurifolia), water oak (Quercus nigra), sweet gum (Liquidambar styraciflua), swamp redbay (Persea palustris), red maple (Acer rubrum), black gum (Nyssa sylvatica var. biflora) and other tree species as available for the canopy layer, as well as an herbaceous layer which includes maindencane (Panicum hemitomon), pickerelweed (Pontederia cordata), and arrowhead (Sagittaria lancifolia).

Table 1. Acreage of Wetland Fill and Wetland Mitigation

	Acres
Mine cuts filled for construction of the cooling water reservoir	180.81
Mine cuts filled for plant site construction	30.97
Disturbed herbaceous and early successional forested wetland for plant site construction	41.33
TOTAL FILL	253.11
Wetland Creation	
Forested	62.69
Herbaceous	63.58
Wetland Enhancement	
Forested	18.94
Herbaceous	23.20
Total Mitigation	
Forested	81.63
Herbaceous	86.78
TOTAL COMBINED MITIGATION	168.41

Ratio = Mitigation:Impact = 0.67:1.0

COE APPL# 199201345(IP-MH)
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Source: ECT, 1992.

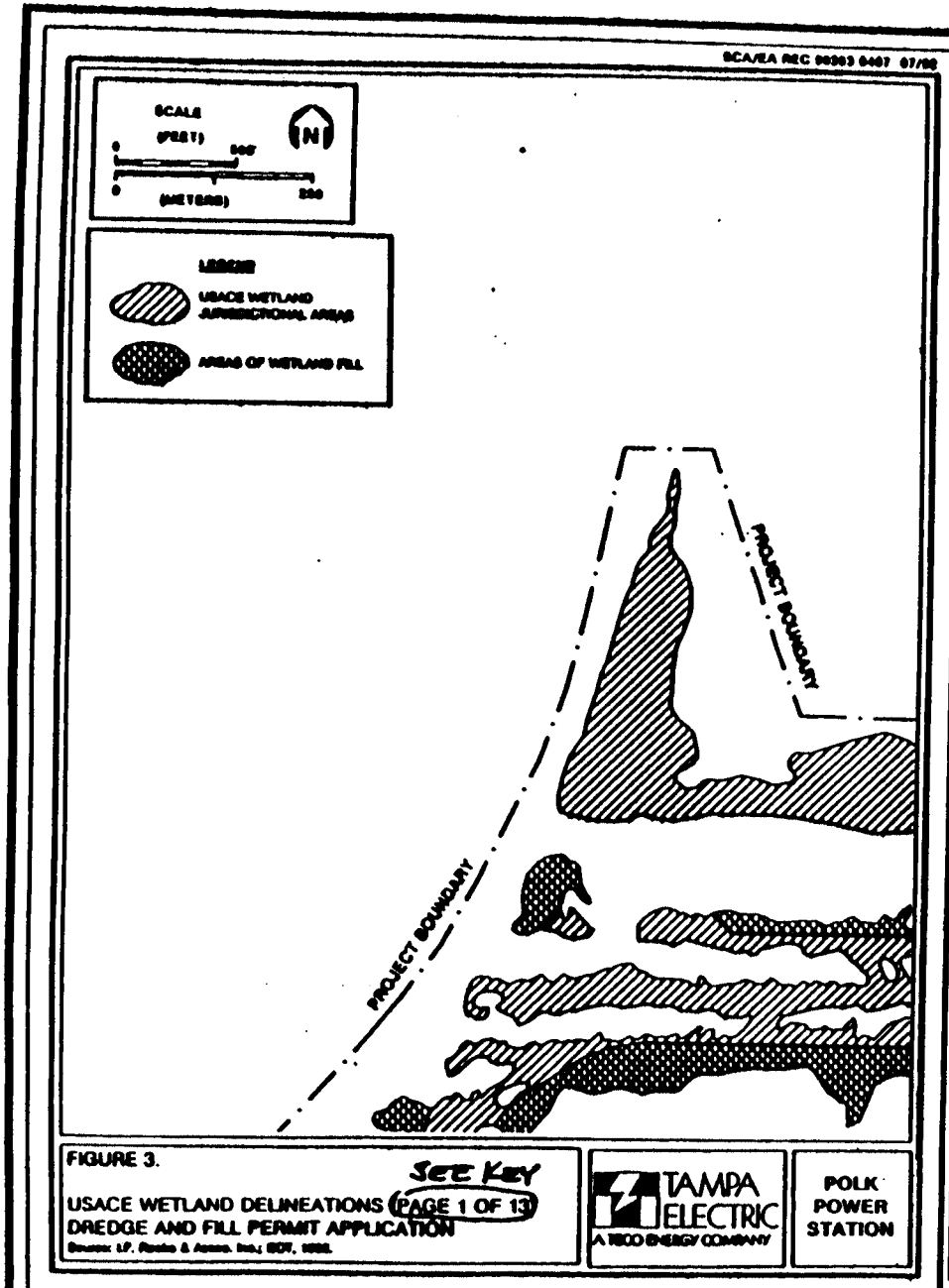


FIGURE 3.
USACE WETLAND DELINEATIONS (SEE KEY PAGE 1 OF 13)
DREDGE AND FILL PERMIT APPLICATION

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

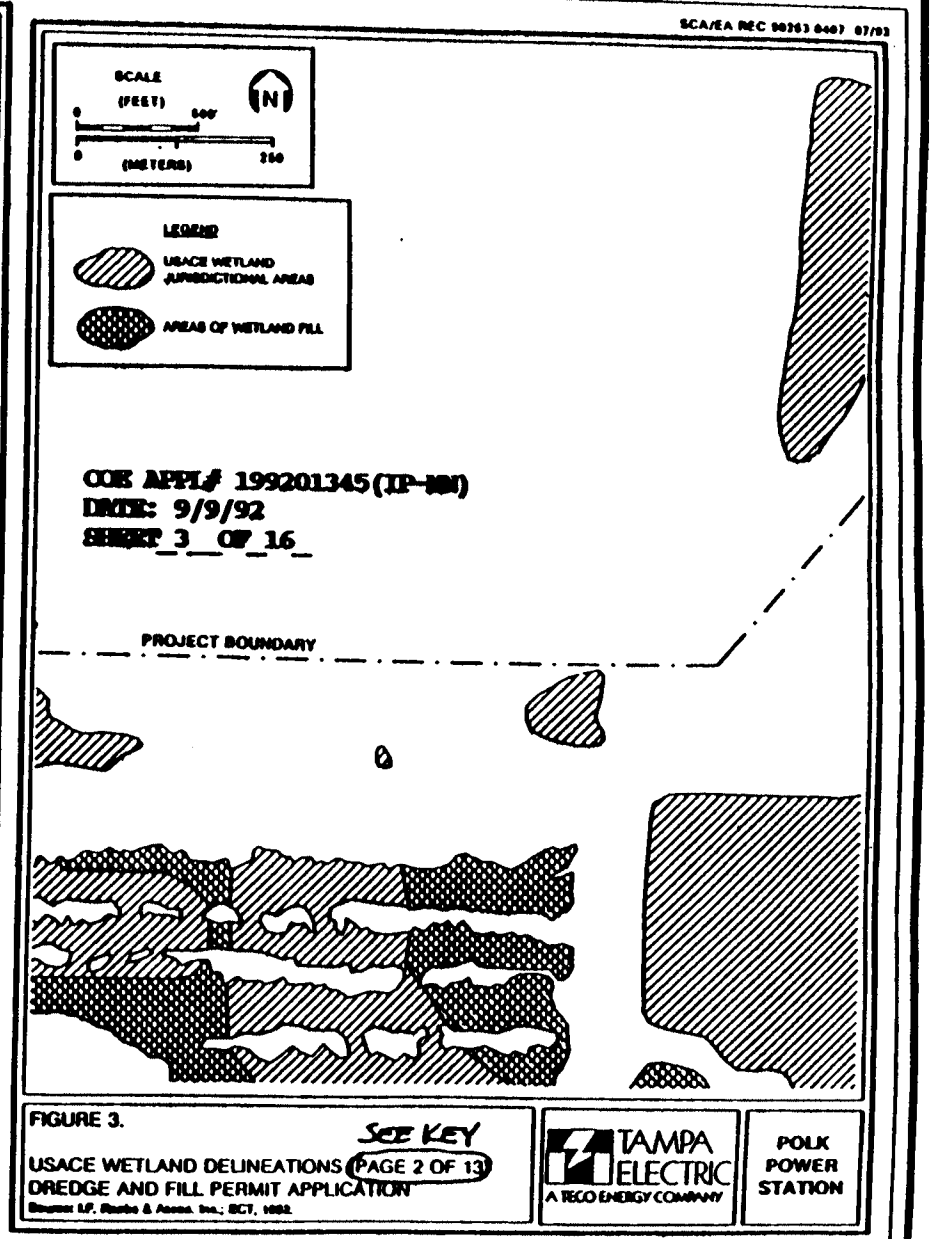


FIGURE 3.
USACE WETLAND DELINEATIONS (SEE KEY PAGE 2 OF 13)
DREDGE AND FILL PERMIT APPLICATION

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

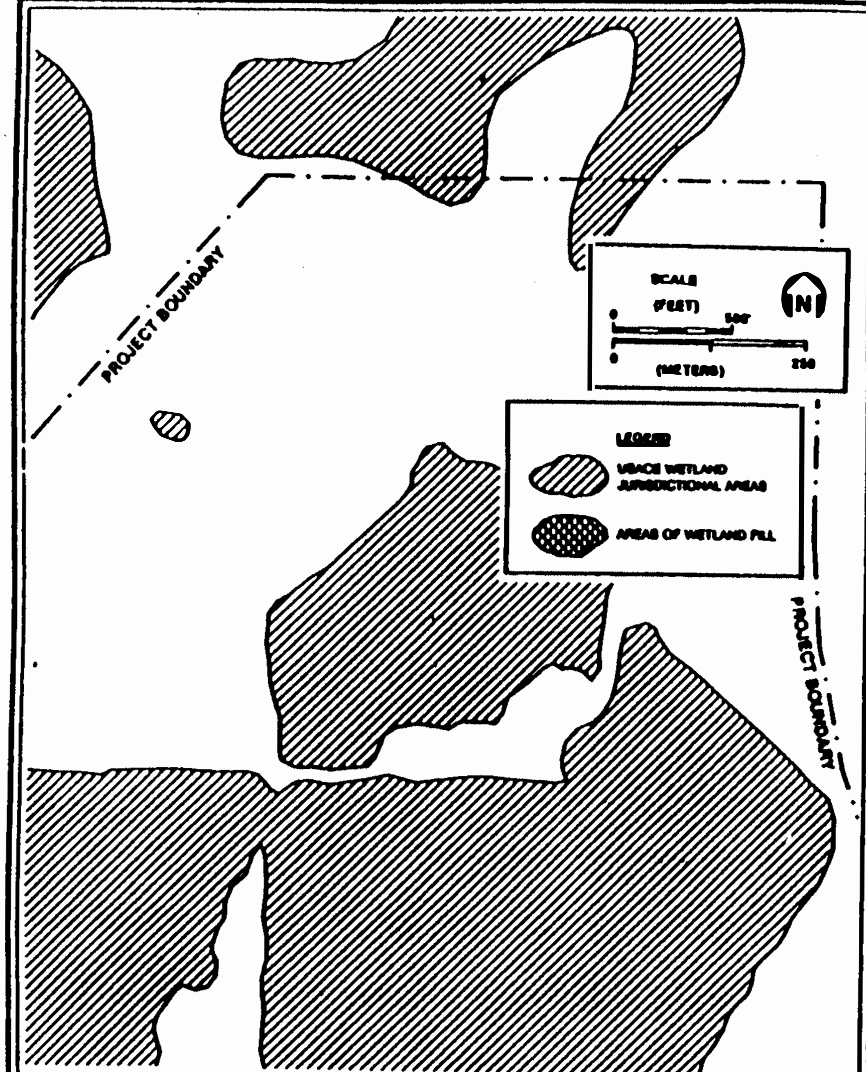


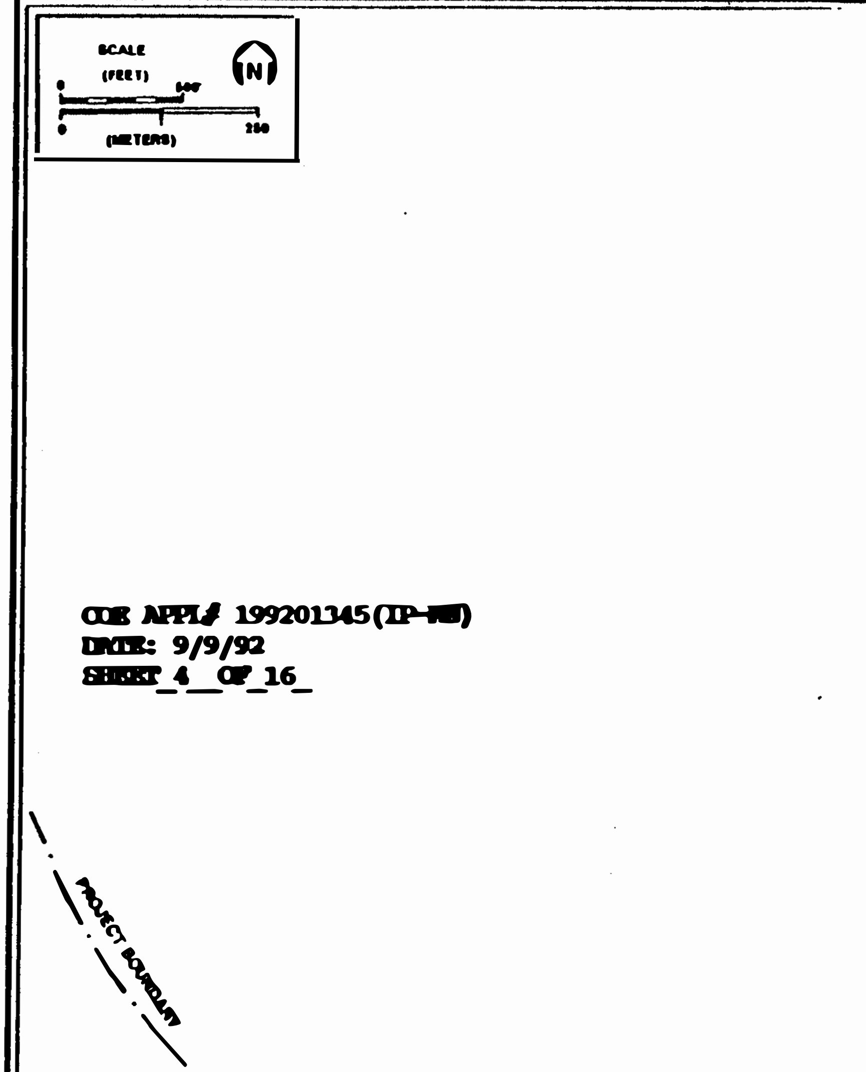
FIGURE 3.

SEE KEY

USACE WETLAND DELINEATIONS (PAGE 3 OF 13)
DREDGE AND FILL PERMIT APPLICATION

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION



COE APPL# 199201345(IP-[illegible])
DATE: 9/9/92
SHEET 4 OF 16

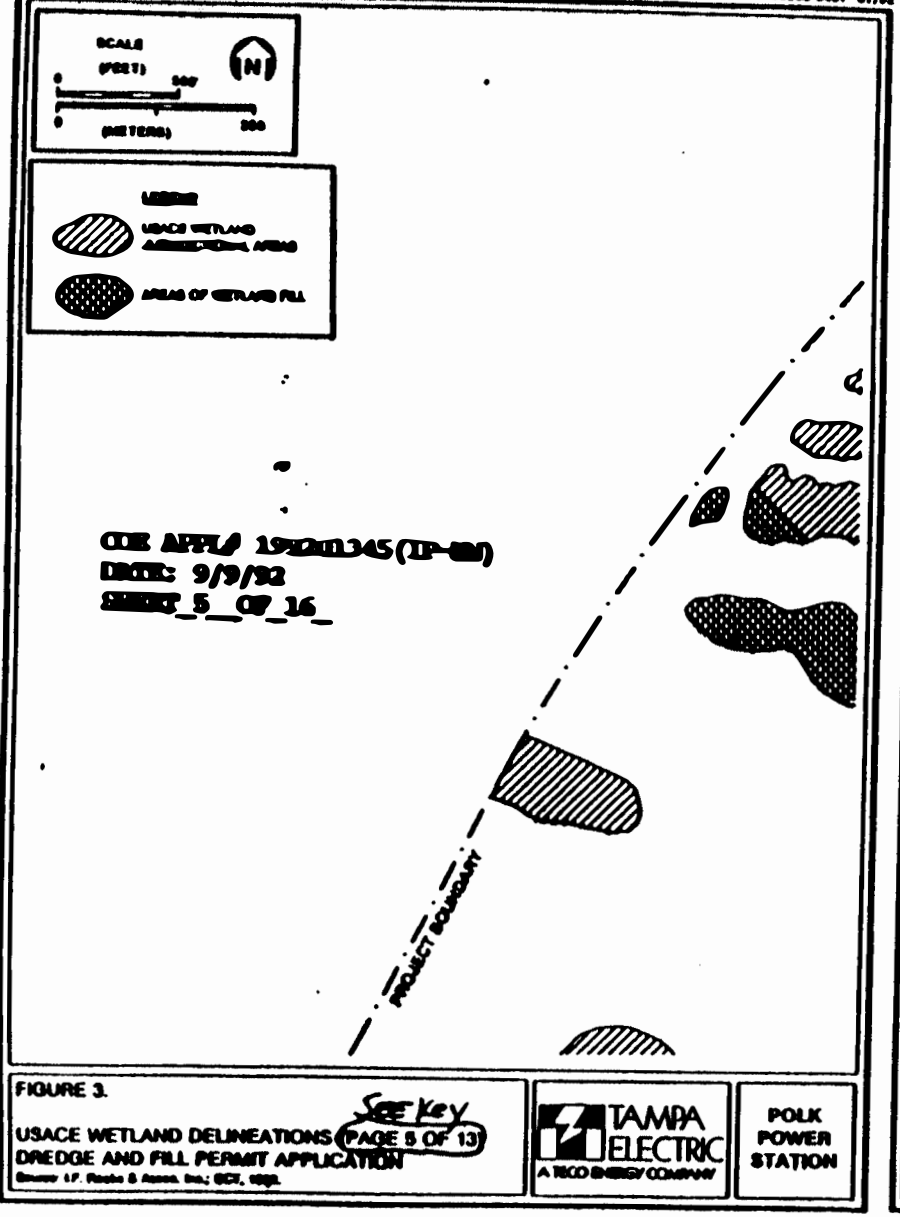
FIGURE 3.

SEE KEY

USACE WETLAND DELINEATIONS (PAGE 4 OF 13)
DREDGE AND FILL PERMIT APPLICATION

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION



COE APPL# 199201345(IP-GH)
DATE: 9/9/92
SHEET 5 OF 16

FIGURE 3.
USACE WETLAND DELINEATIONS (See Key PAGE 5 OF 13)
DREDGE AND FILL PERMIT APPLICATION
Source: J.F. Rooks & Assoc. Inc.; ECT, 1992.

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

SCA/EA REC 98263 0407 07/98

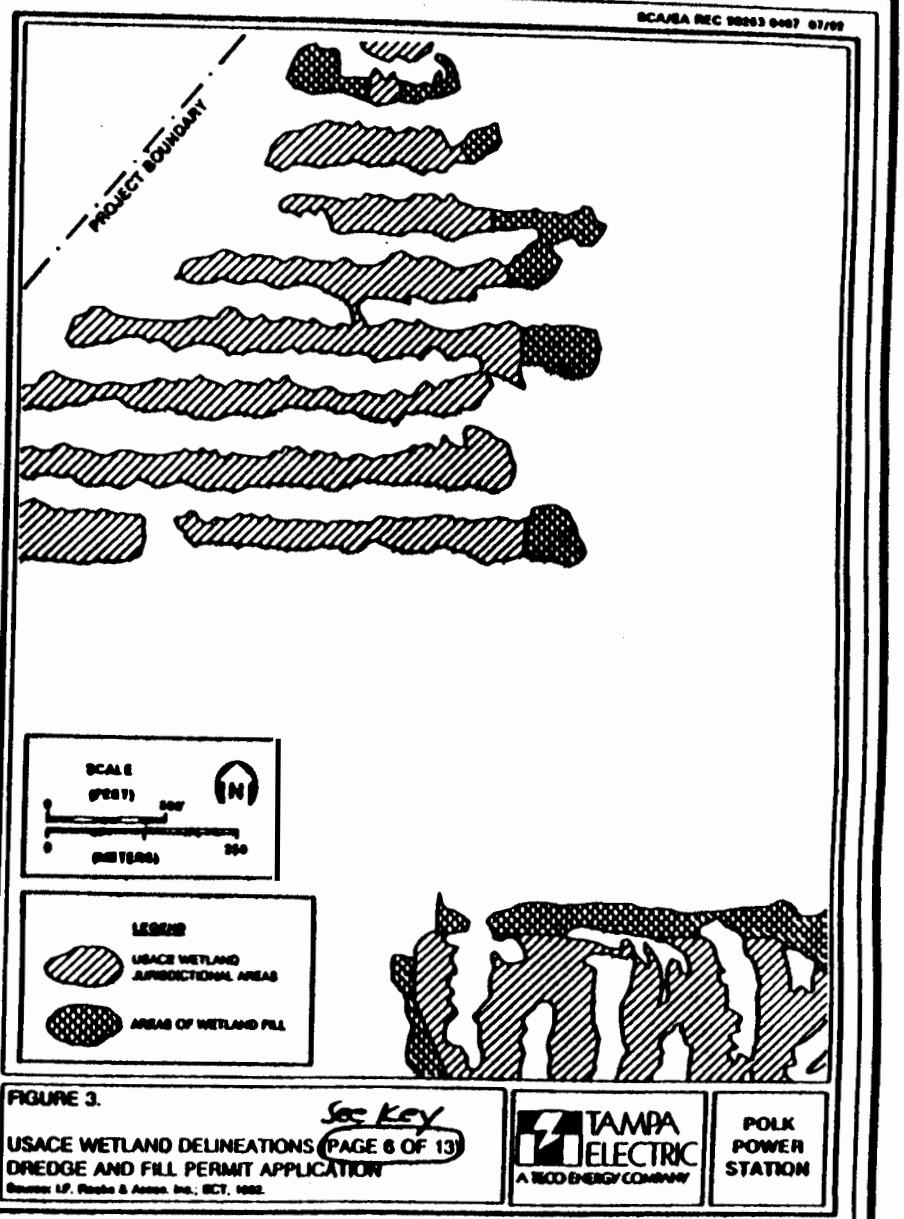


FIGURE 3.
USACE WETLAND DELINEATIONS (See Key PAGE 6 OF 13)
DREDGE AND FILL PERMIT APPLICATION
Source: J.F. Rooks & Assoc. Inc.; ECT, 1992.

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

SCA/EA REC 90303 0407 07/92

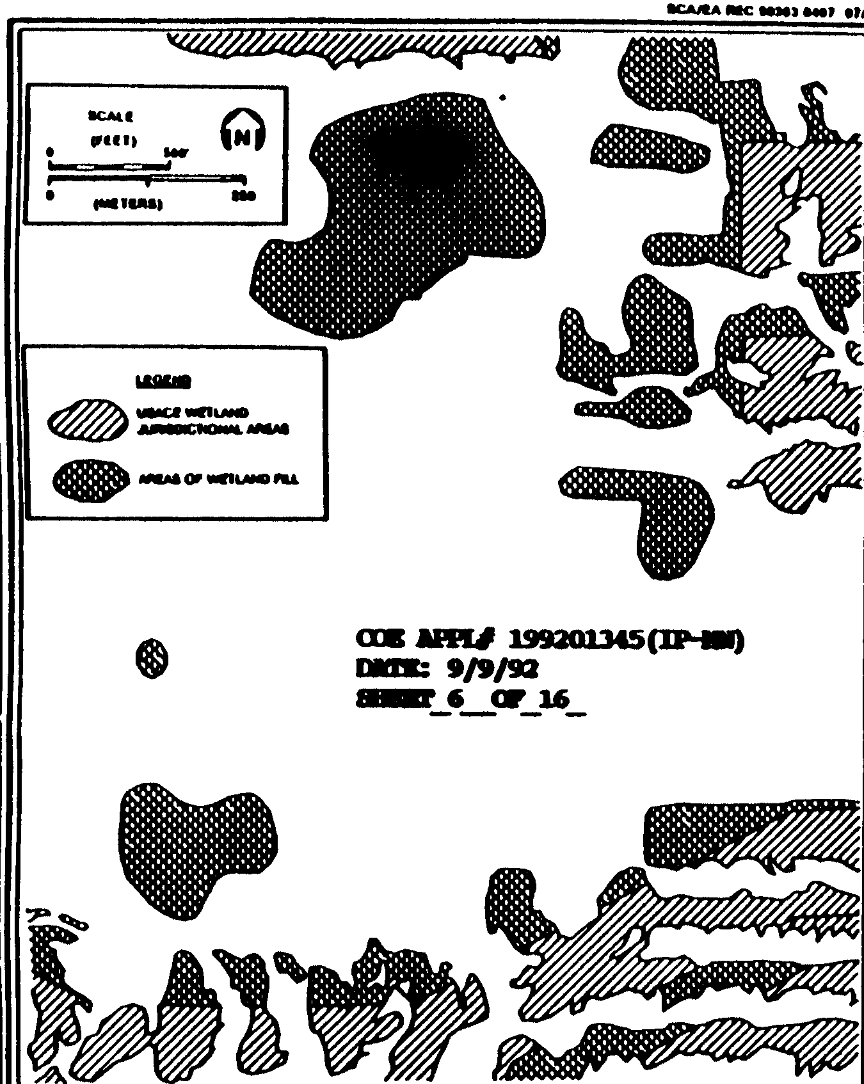


FIGURE 3.

See Key

USACE WETLAND DELINEATIONS (PAGE 7 OF 13)
DREDGE AND FILL PERMIT APPLICATION

Source: I.F. Roche & Assoc. Inc.; OCT, 1992.

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

SCA/EA REC 90303 0407 07/92

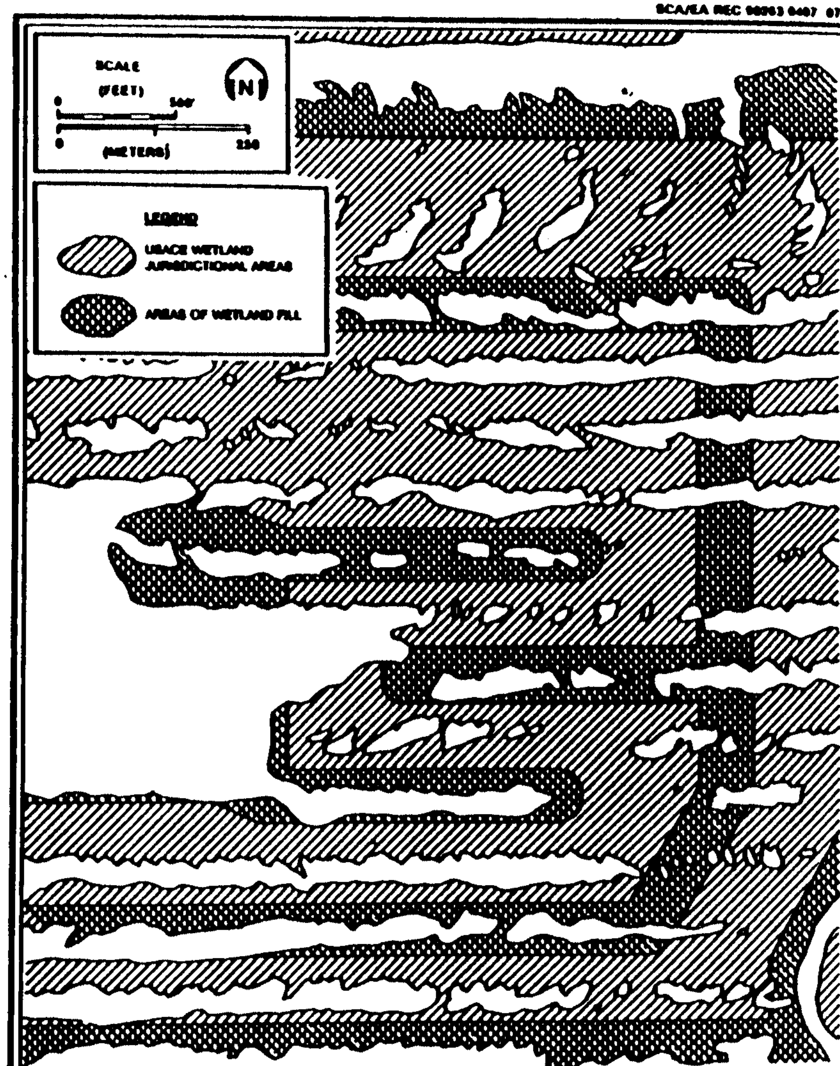


FIGURE 3.

See Key

USACE WETLAND DELINEATIONS (PAGE 8 OF 13)
DREDGE AND FILL PERMIT APPLICATION

Source: I.F. Roche & Assoc. Inc.; OCT, 1992.

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

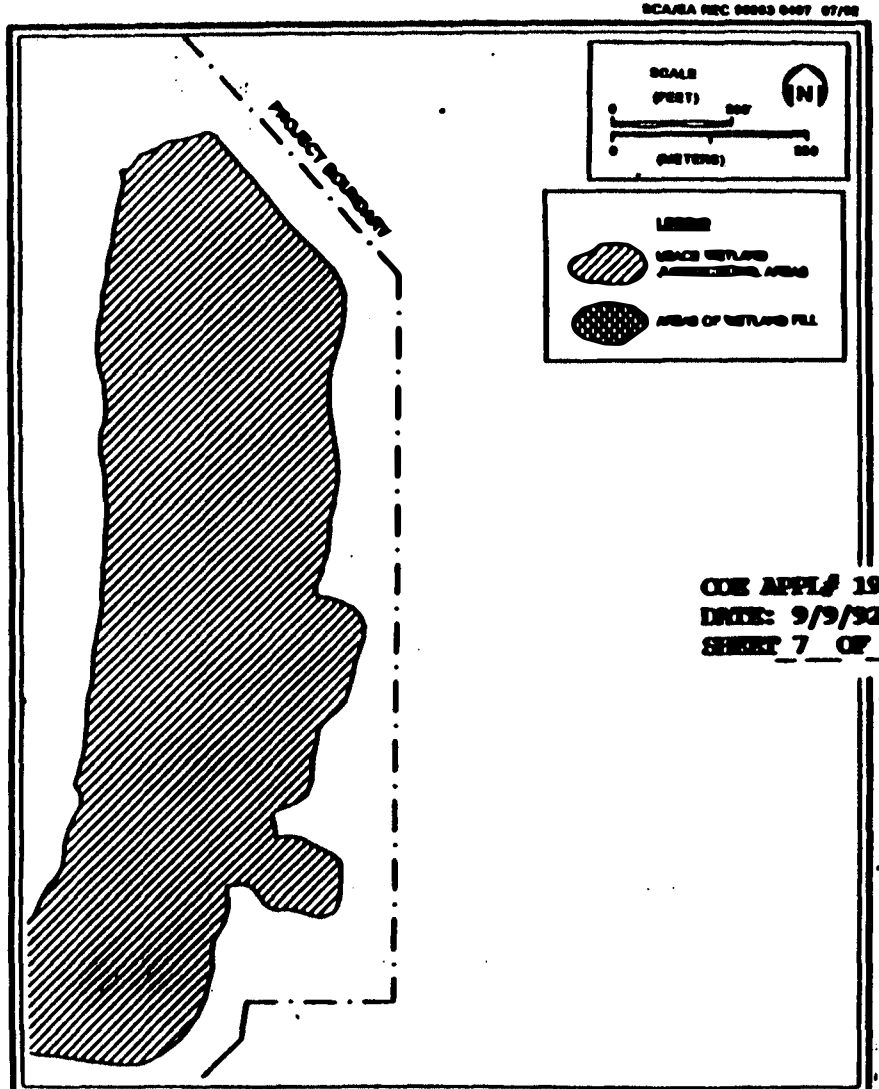
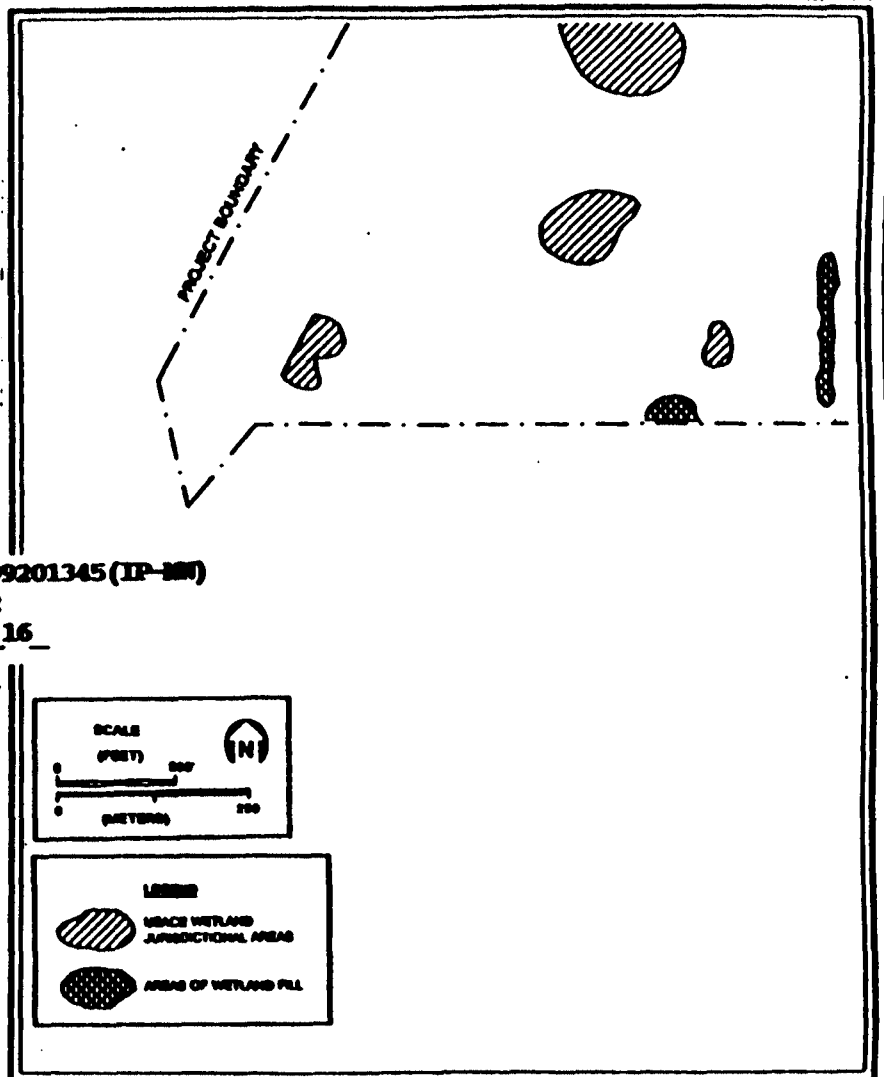


FIGURE 3.
USACE WETLAND DELINEATIONS
DREDGE AND FILL PERMIT APPLICATION
Source: I.F. Rooks & Assoc. Inc.; ECT, 1992.

Sew Key
PAGE 9 OF 13

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION



COE APPL# 199201345(IP-SW)
DATE: 9/9/92
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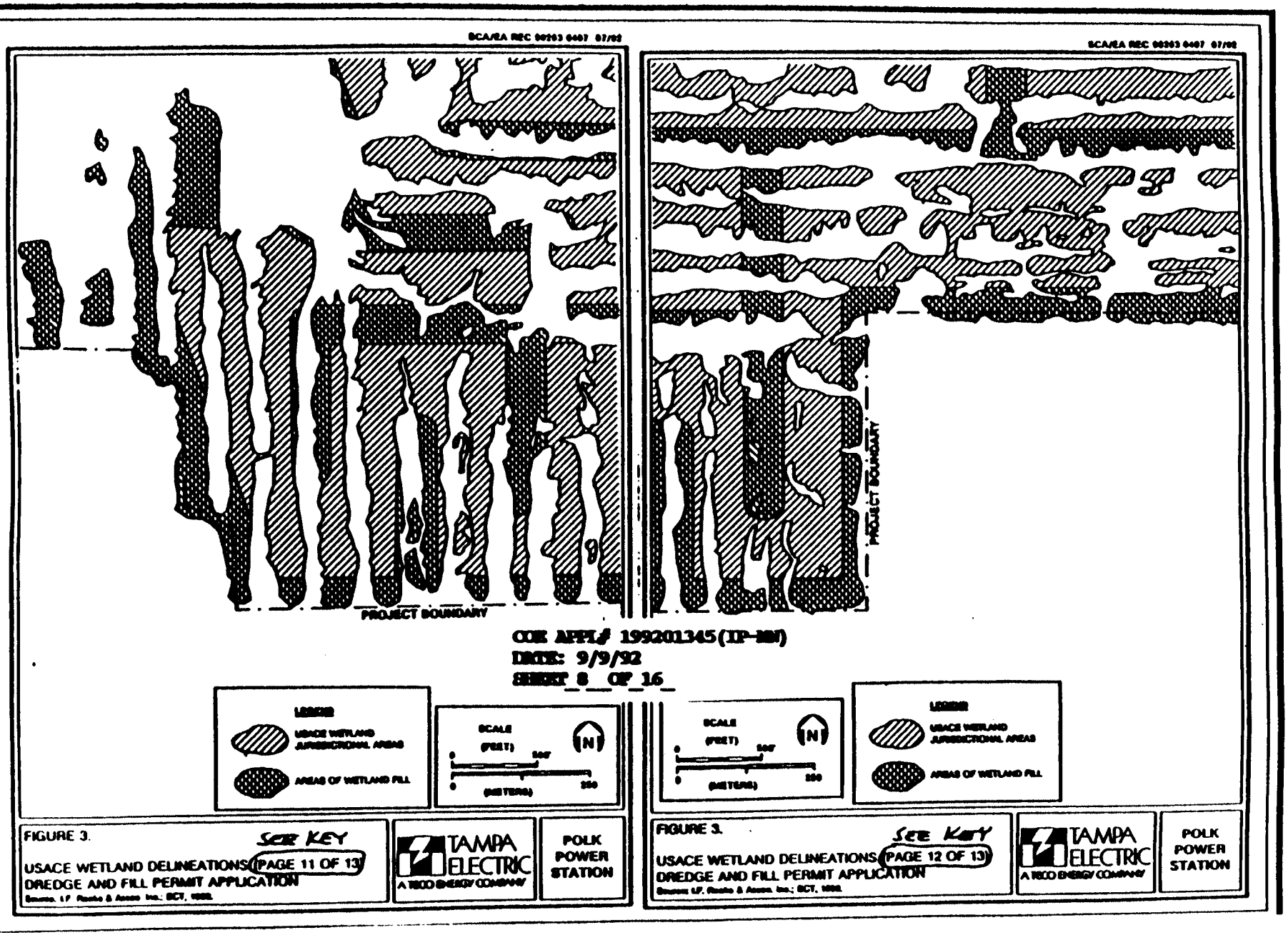
FIGURE 3.
USACE WETLAND DELINEATIONS
DREDGE AND FILL PERMIT APPLICATION
Source: I.F. Rooks & Assoc. Inc.; ECT, 1992.

Sew Key
PAGE 10 OF 13

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION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PROJECT BOUNDARY
COE APPL# 199201345(IP-MH)
DATE: 9/9/92
SHEET 8 OF 16
LEGEND
USACE WETLAND JURISDICTIONAL AREAS
AREAS OF WETLAND FILL
SCALE
(FEET)
(METERS)
N
FIGURE 3.
SEE KEY
USACE WETLAND DELINEATIONS (PAGE 11 OF 13)
DREDGE AND FILL PERMIT APPLICATION
TAMPA ELECTRIC
A TECO ENERGY COMPANY
POLK POWER STATION
SCA/EA REC 00303 0407 07/92
PROJECT BOUNDARY
LEGEND
USACE WETLAND JURISDICTIONAL AREAS
AREAS OF WETLAND FILL
SCALE
(FEET)
(METERS)
N
FIGURE 3.
SEE KEY
USACE WETLAND DELINEATIONS (PAGE 12 OF 13)
DREDGE AND FILL PERMIT APPLICATION
TAMPA ELECTRIC
A TECO ENERGY COMPANY
POLK POWER STATION

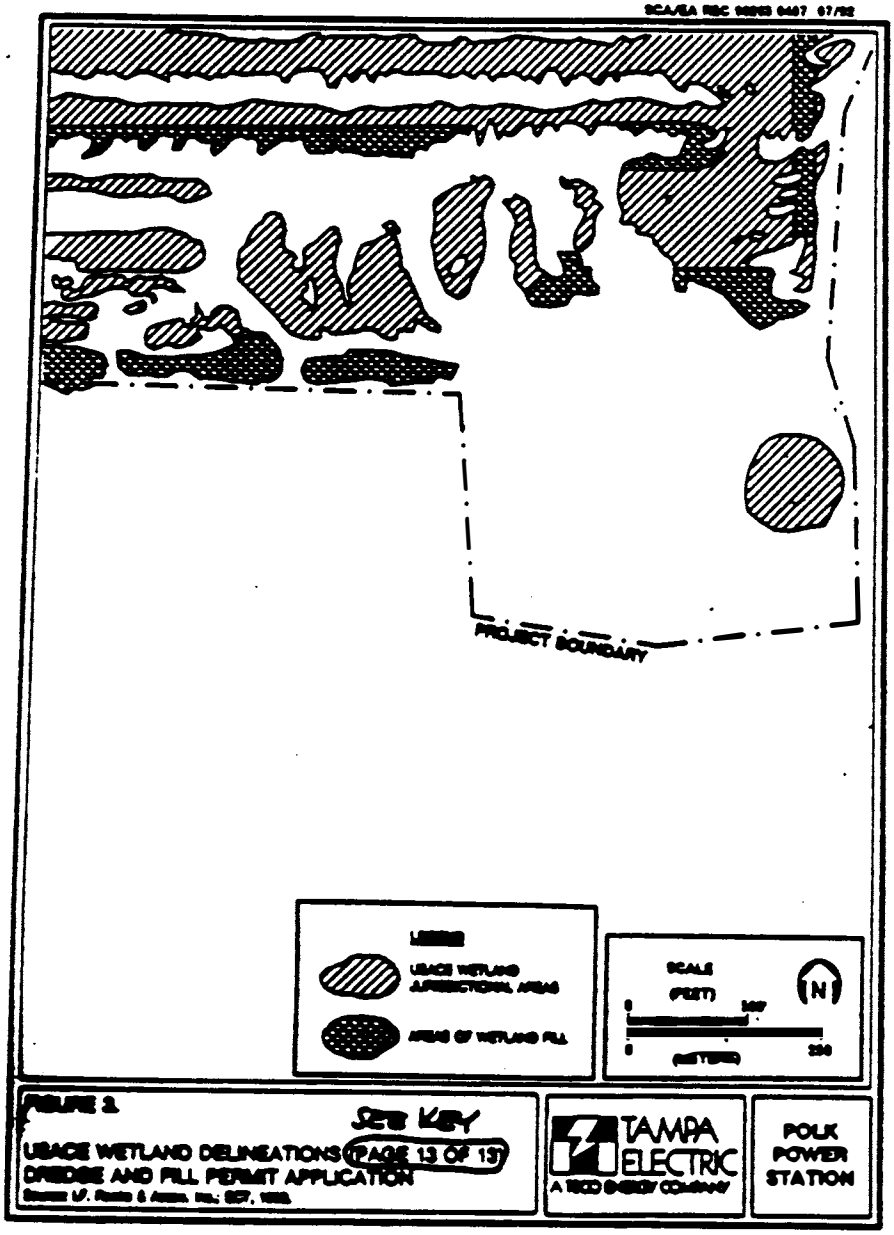

FIGURE 2.
USACE WETLAND DELINEATIONS
DREDGE AND FILL PERMIT APPLICATION

Site Key
PAGE 13 OF 15

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

COE APPL# 199201345(IP-MH)
DATE: 9/9/92
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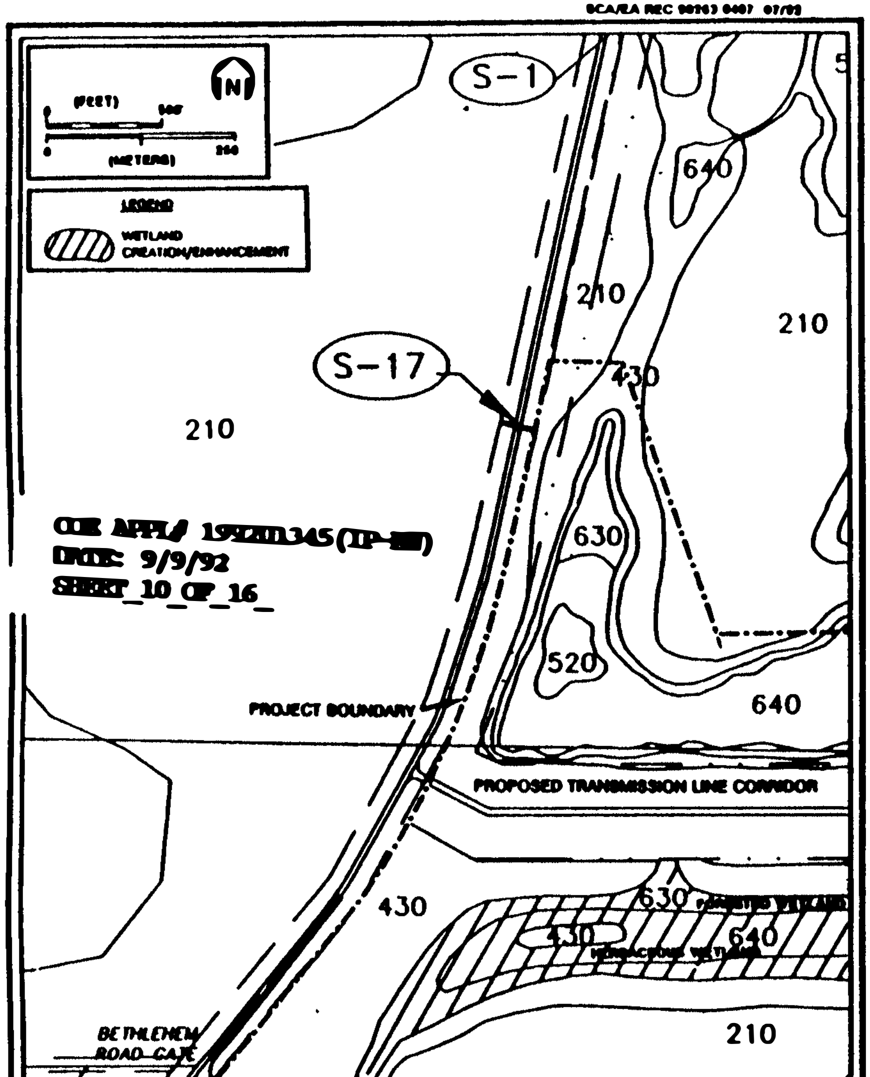

FIGURE 4. (PAGE 1 OF 13) - SEE KEY
POST-RECLAMATION LAND USE WITH WETLAND CREATION/ENHANCEMENT AREAS DEPICTED
DREDGE AND FILL PERMIT APPLICATION

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

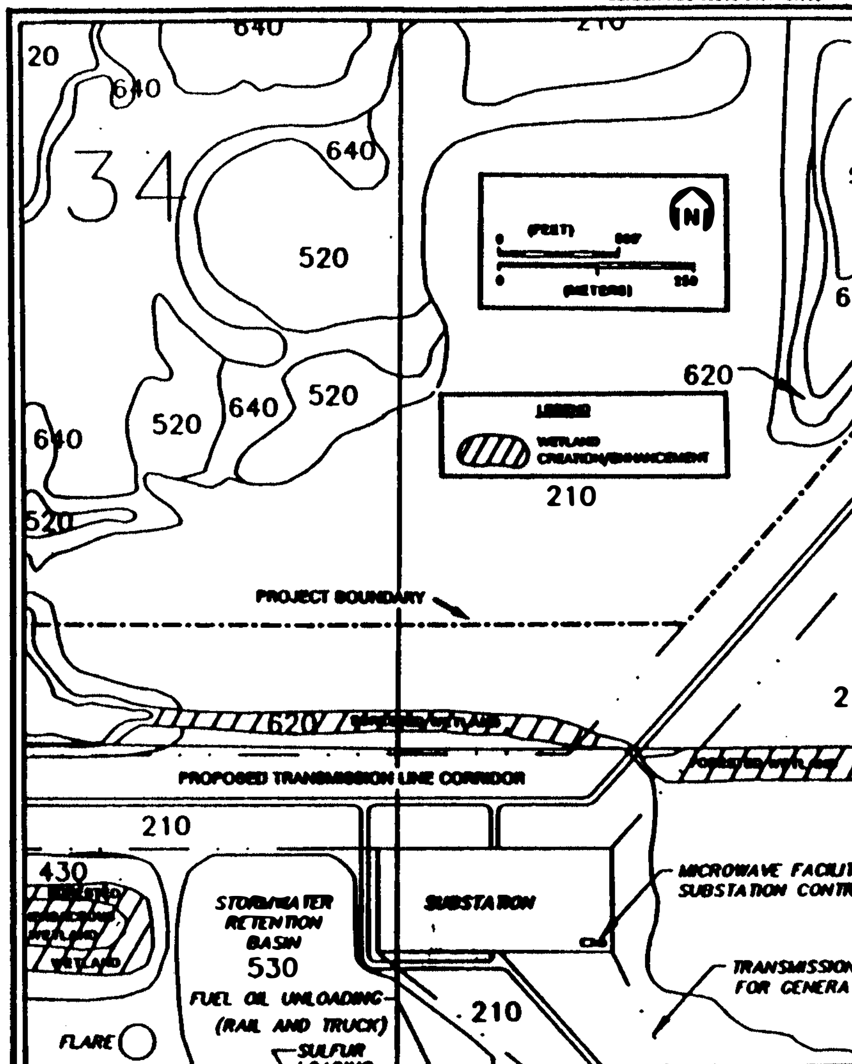

FIGURE 4. (PAGE 2 OF 13) - SEE KEY
POST-RECLAMATION LAND USE WITH WETLAND CREATION/ENHANCEMENT AREAS DEPICTED
DREDGE AND FILL PERMIT APPLICATION

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

COE APPL# 199201345(IP-MS)
DATE: 9/9/92
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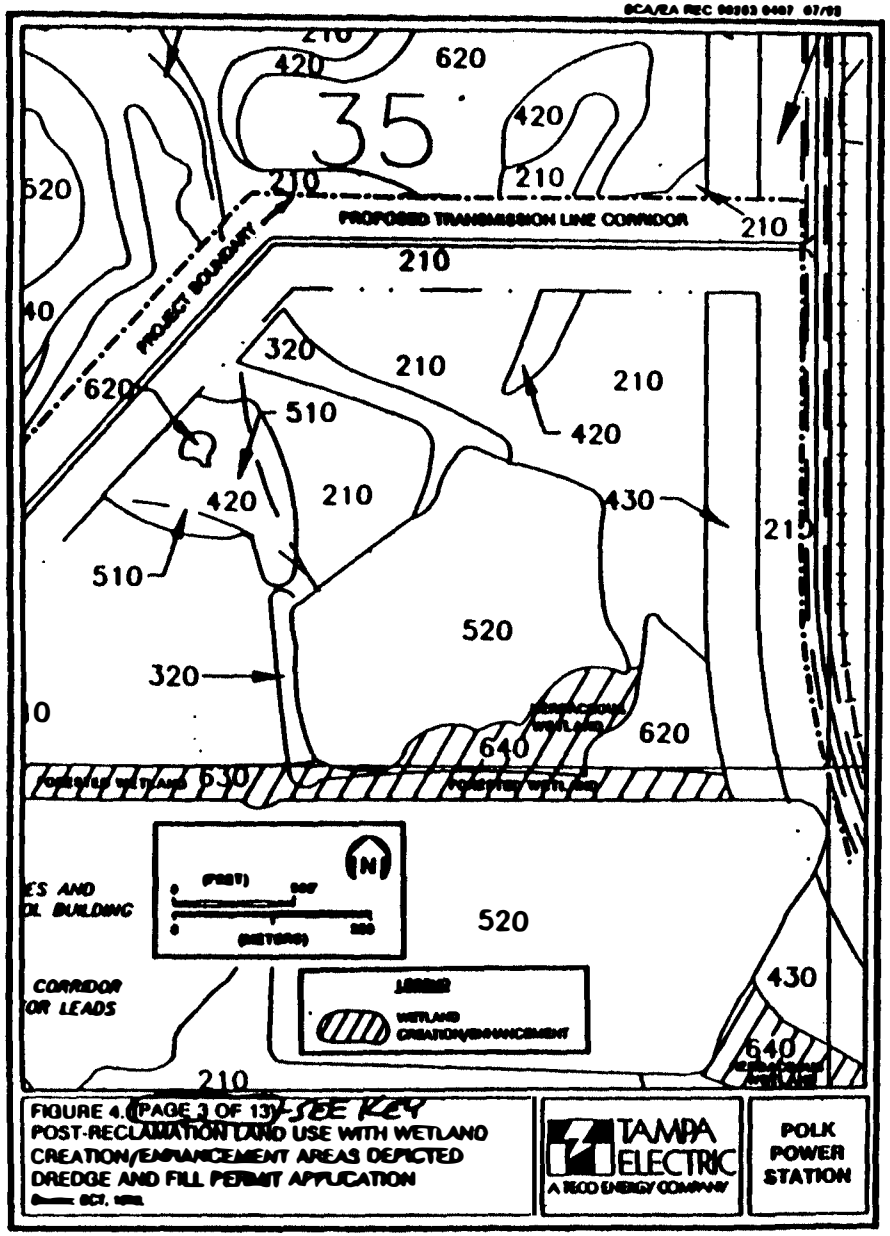

FIGURE 4 (PAGE 3 OF 13) - SEE KEY
POST-RECLAMATION LAND USE WITH WETLAND CREATION/ENHANCEMENT AREAS DEPICTED
DREDGE AND FILL PERMIT APPLICATION
OCT. 1992

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

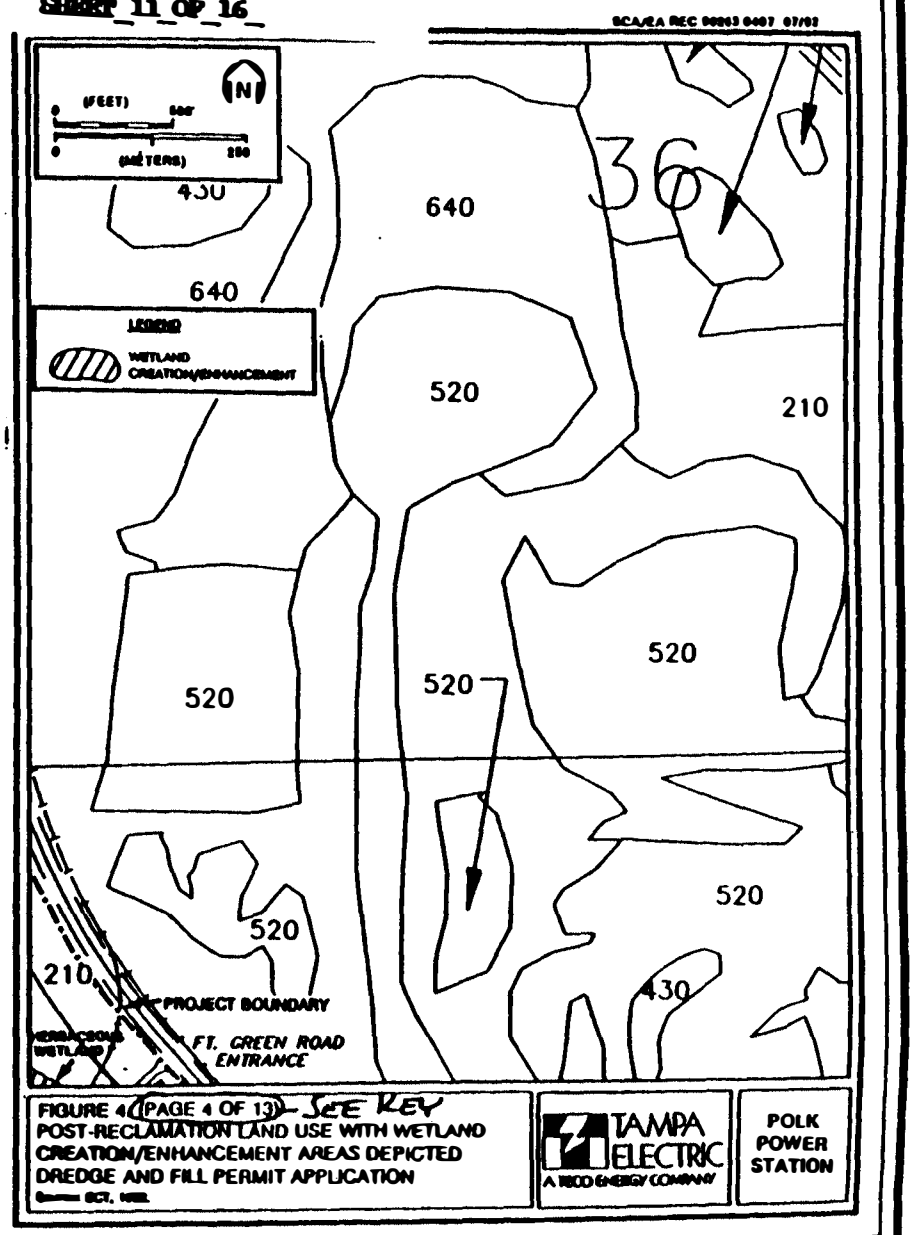

FIGURE 4 (PAGE 4 OF 13) - SEE KEY
POST-RECLAMATION LAND USE WITH WETLAND CREATION/ENHANCEMENT AREAS DEPICTED
DREDGE AND FILL PERMIT APPLICATION
OCT. 1992

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

COR APPL# 199201345(IP-MN)
DATE: 9/9/92
SHEET 12 OF 16

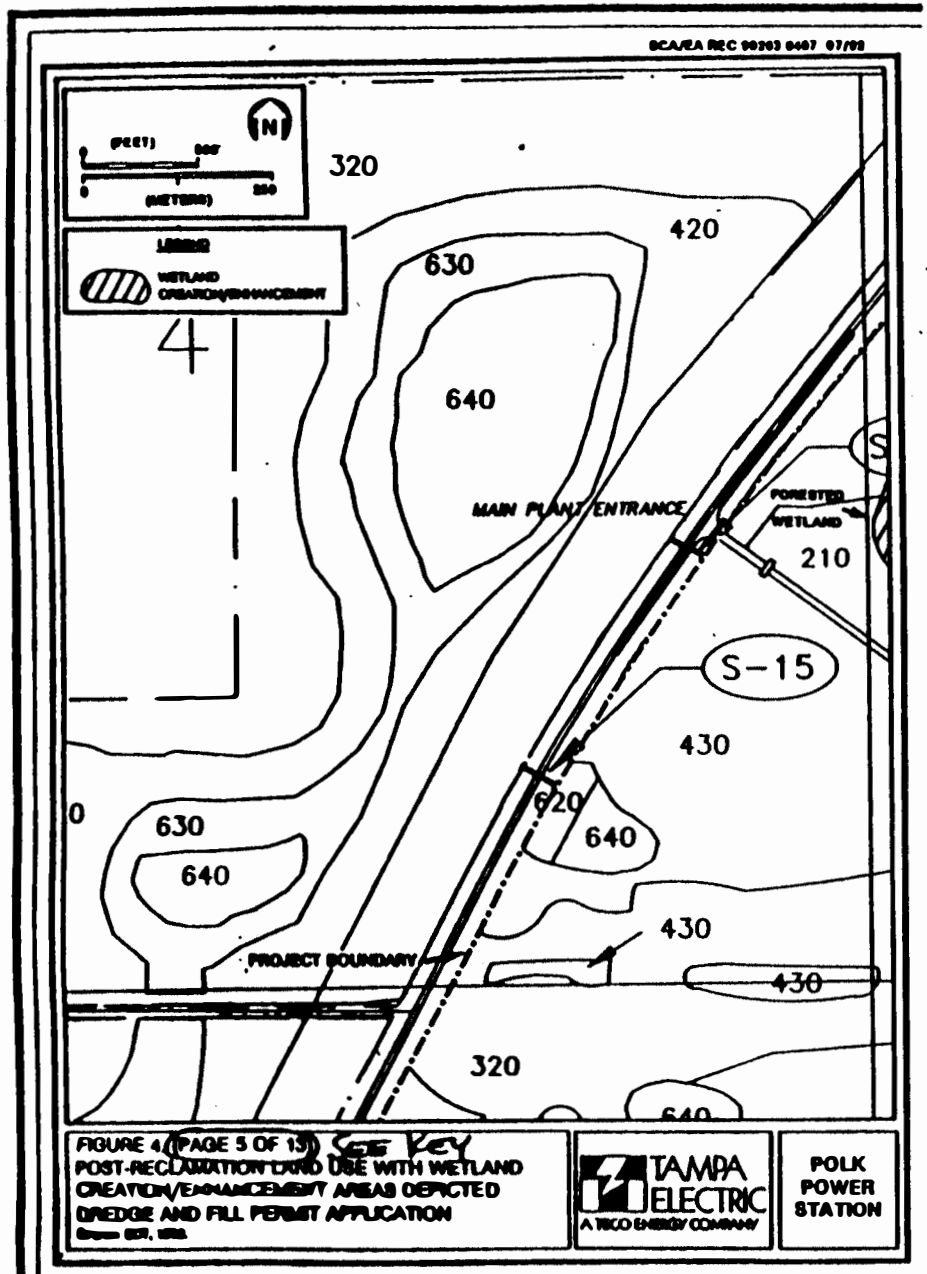

FIGURE 4 (PAGE 5 OF 13) SEE KEY
POST-RECLAMATION LAND USE WITH WETLAND CREATION/ENHANCEMENT AREAS DEPICTED
DREDGE AND FILL PERMIT APPLICATION

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

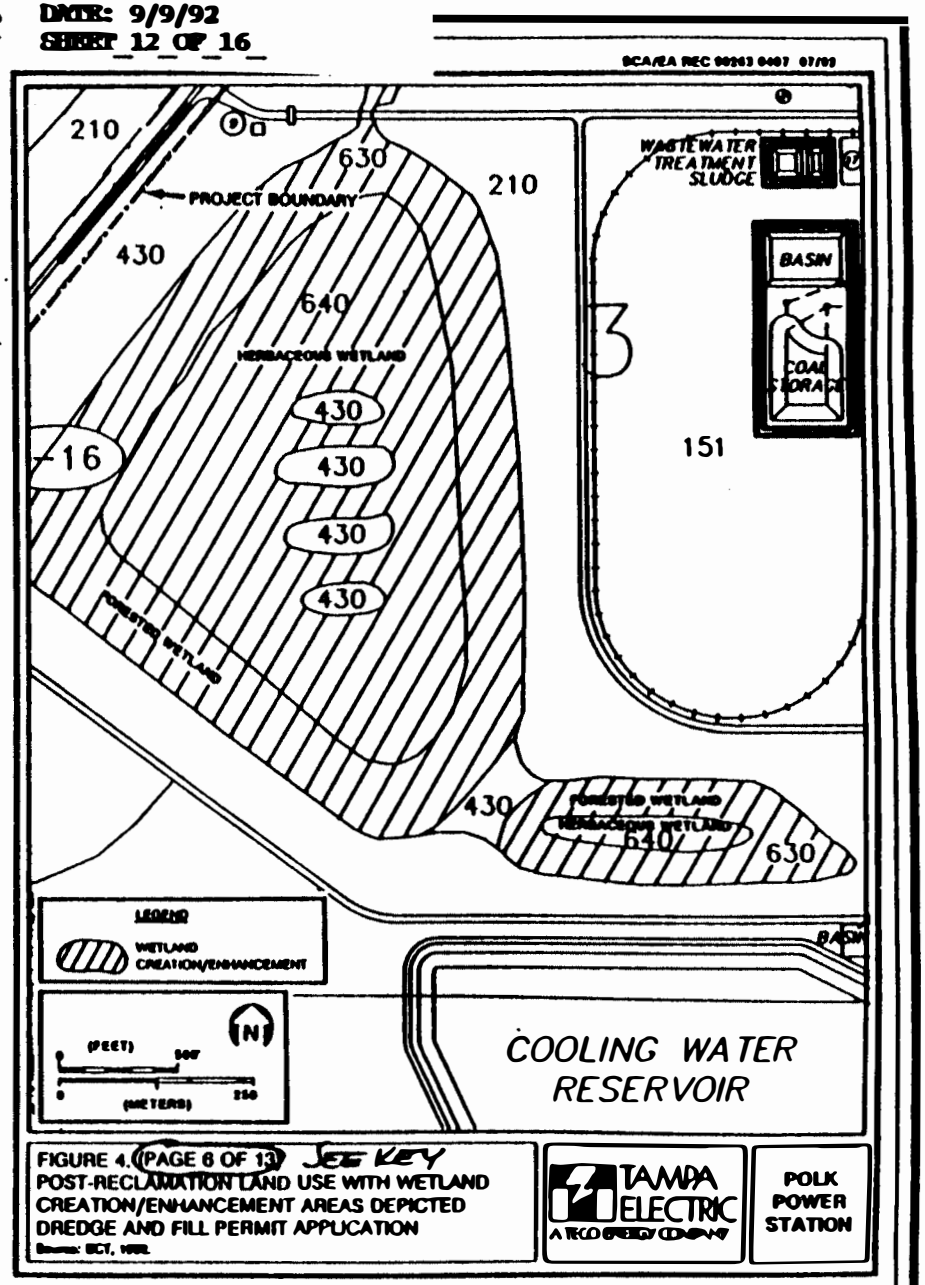

FIGURE 4 (PAGE 6 OF 13) SEE KEY
POST-RECLAMATION LAND USE WITH WETLAND CREATION/ENHANCEMENT AREAS DEPICTED
DREDGE AND FILL PERMIT APPLICATION

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

COE APPL# 199201345(IP-RS)
DATE: 9/9/92
SHEET 13 OF 16

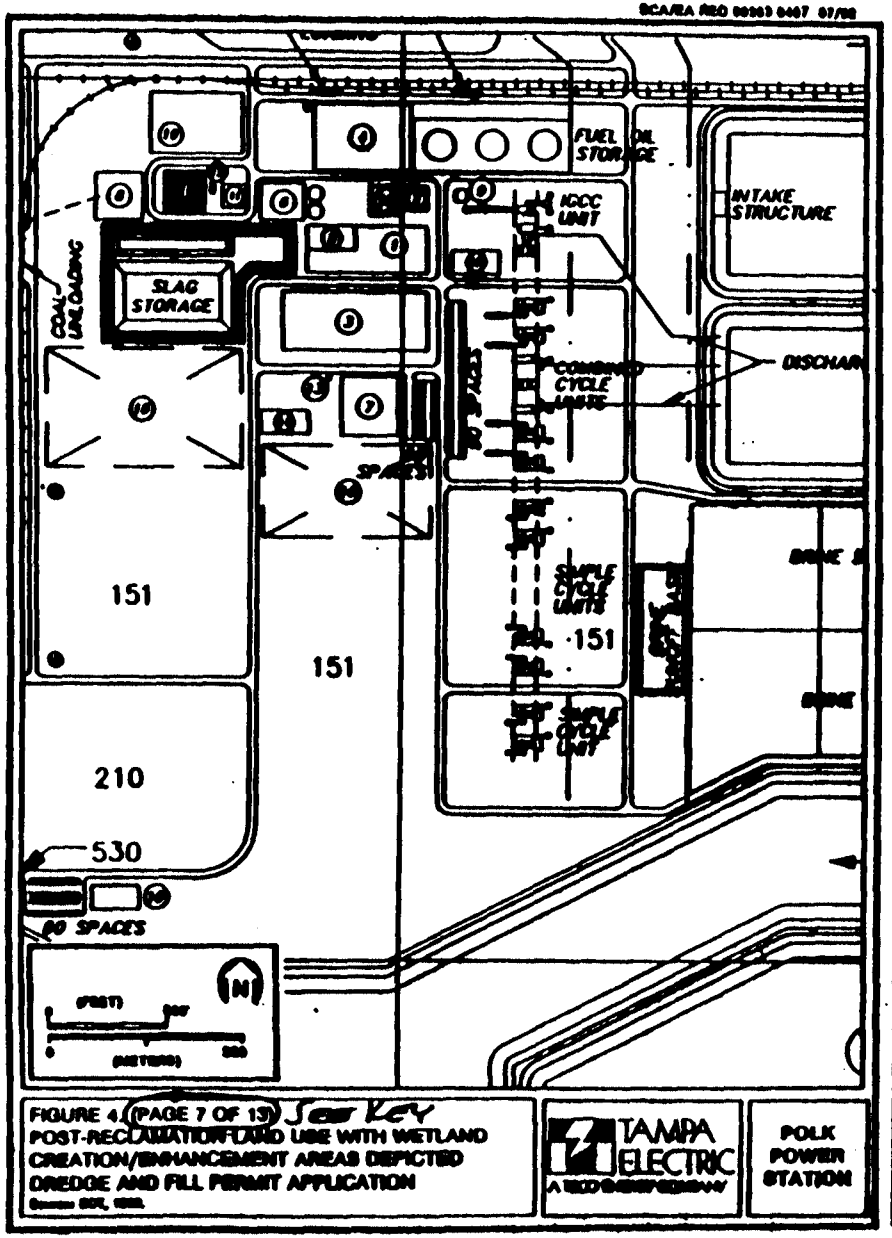

FIGURE 4. (PAGE 7 OF 13) See Key
POST-RECLAMATION LAND USE WITH WETLAND CREATION/ENHANCEMENT AREAS DEPICTED
DREDGE AND FILL PERMIT APPLICATION

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

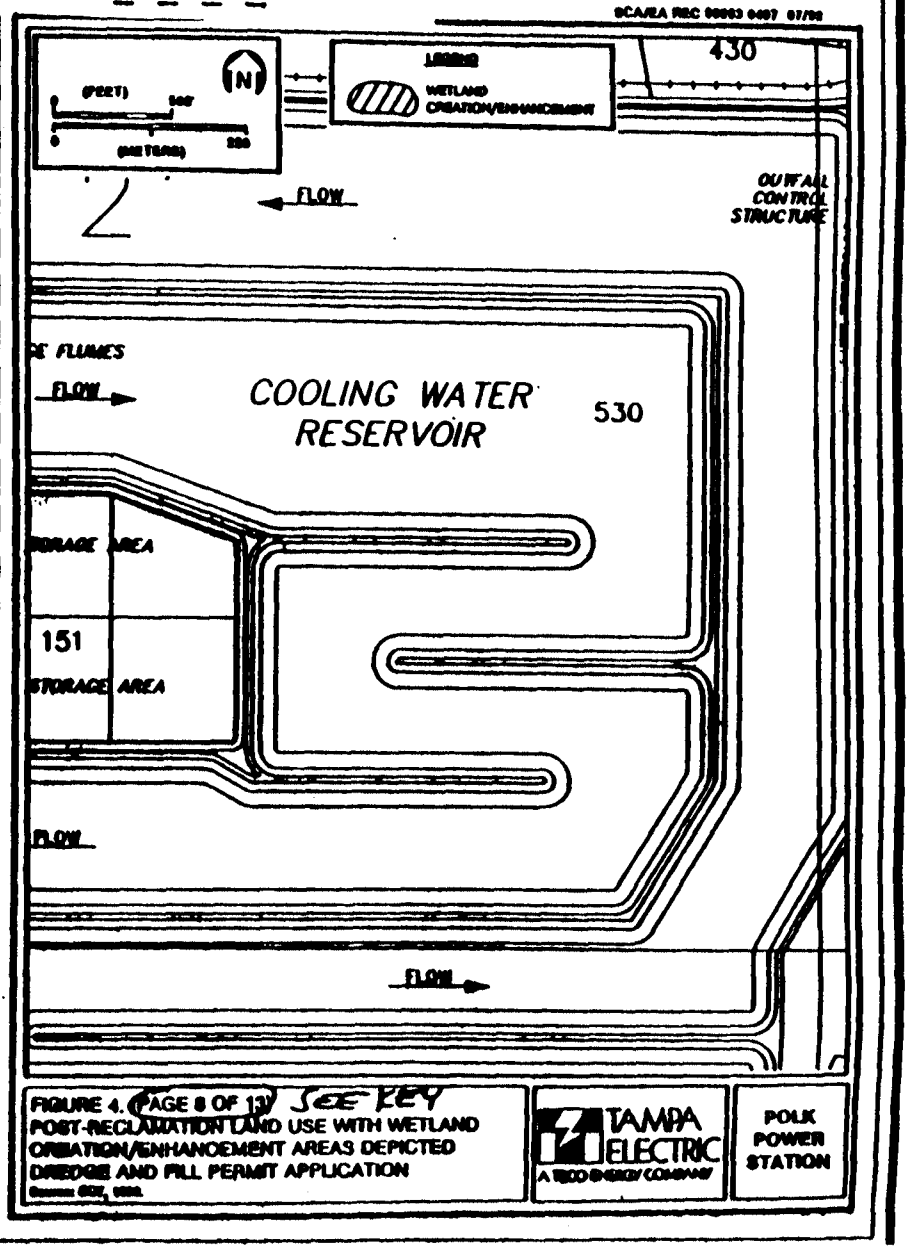

FIGURE 4. (PAGE 8 OF 13) See Key
POST-RECLAMATION LAND USE WITH WETLAND CREATION/ENHANCEMENT AREAS DEPICTED
DREDGE AND FILL PERMIT APPLICATION

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

COE APPL# 199201345(IP-MN)
DATE: 9/9/92
SHEET 14 OF 16

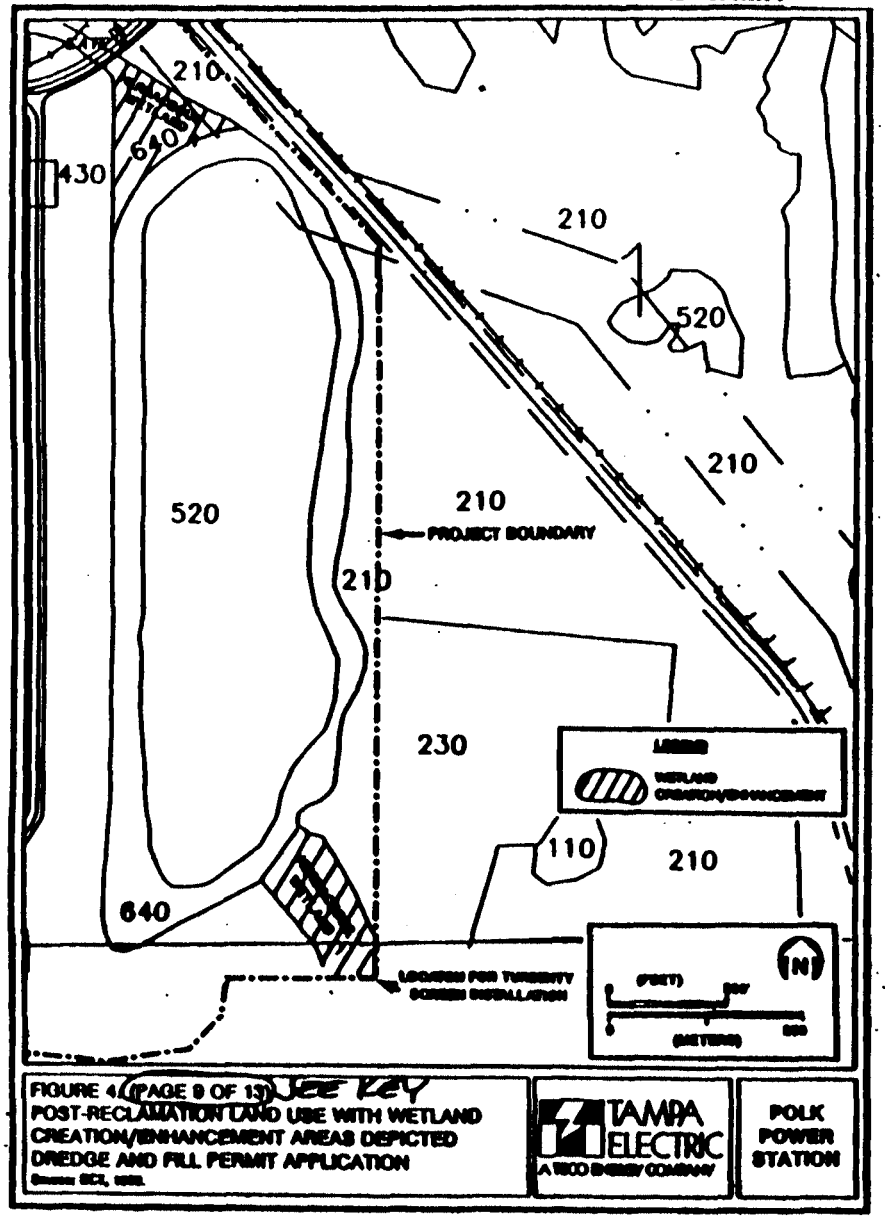

FIGURE 4 (PAGE 9 OF 13) SEE KEY
POST-RECLAMATION LAND USE WITH WETLAND CREATION/ENHANCEMENT AREAS DEPICTED
DREDGE AND FILL PERMIT APPLICATION

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

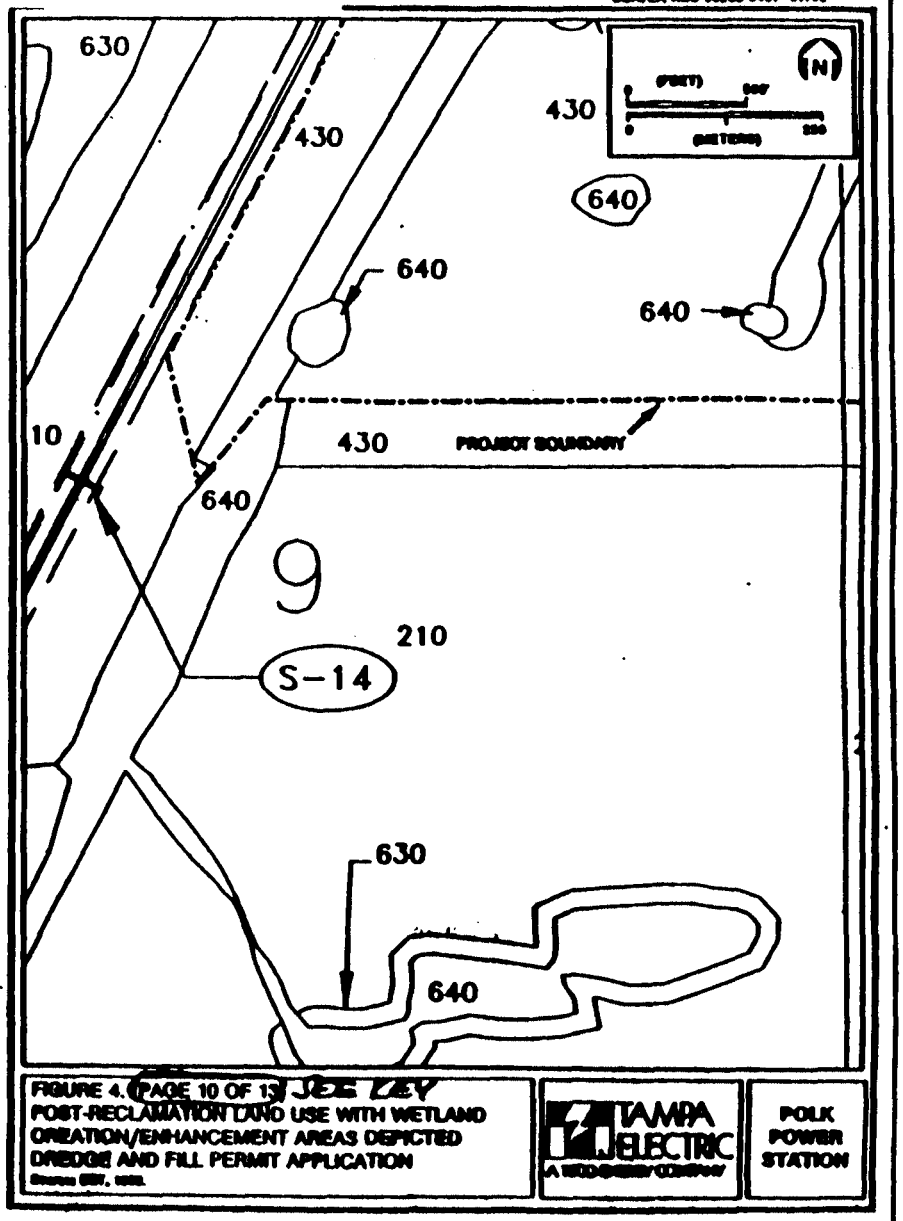

FIGURE 4 (PAGE 10 OF 13) SEE KEY
POST-RECLAMATION LAND USE WITH WETLAND CREATION/ENHANCEMENT AREAS DEPICTED
DREDGE AND FILL PERMIT APPLICATION

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

COE APP.# 199201345(IP-SM)
DATE: 9/9/92
SHEET 15 OF 16

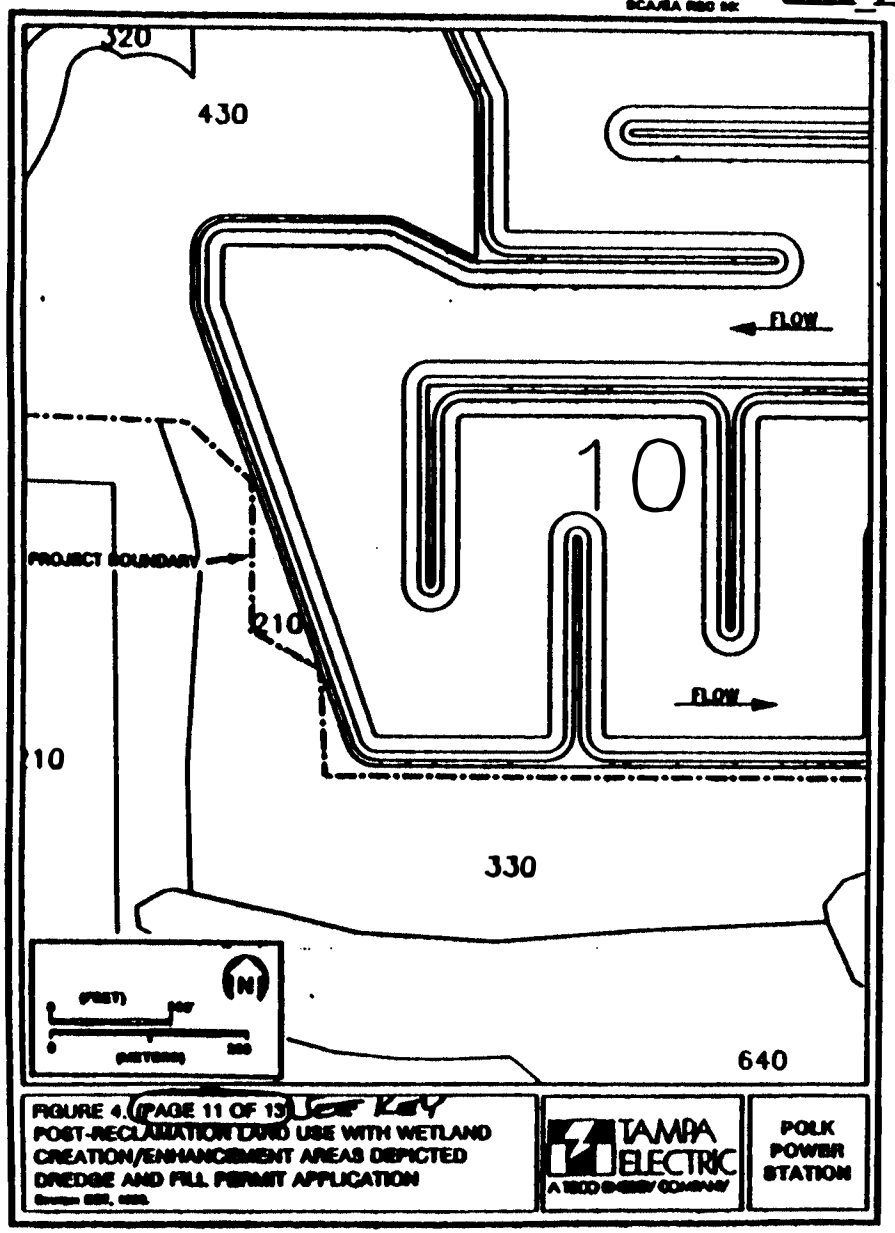

FIGURE 4. (PAGE 11 OF 13) SEE KEY
POST-RECLAMATION LAND USE WITH WETLAND CREATION/ENHANCEMENT AREAS DEPICTED
DREDGE AND FILL PERMIT APPLICATION

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

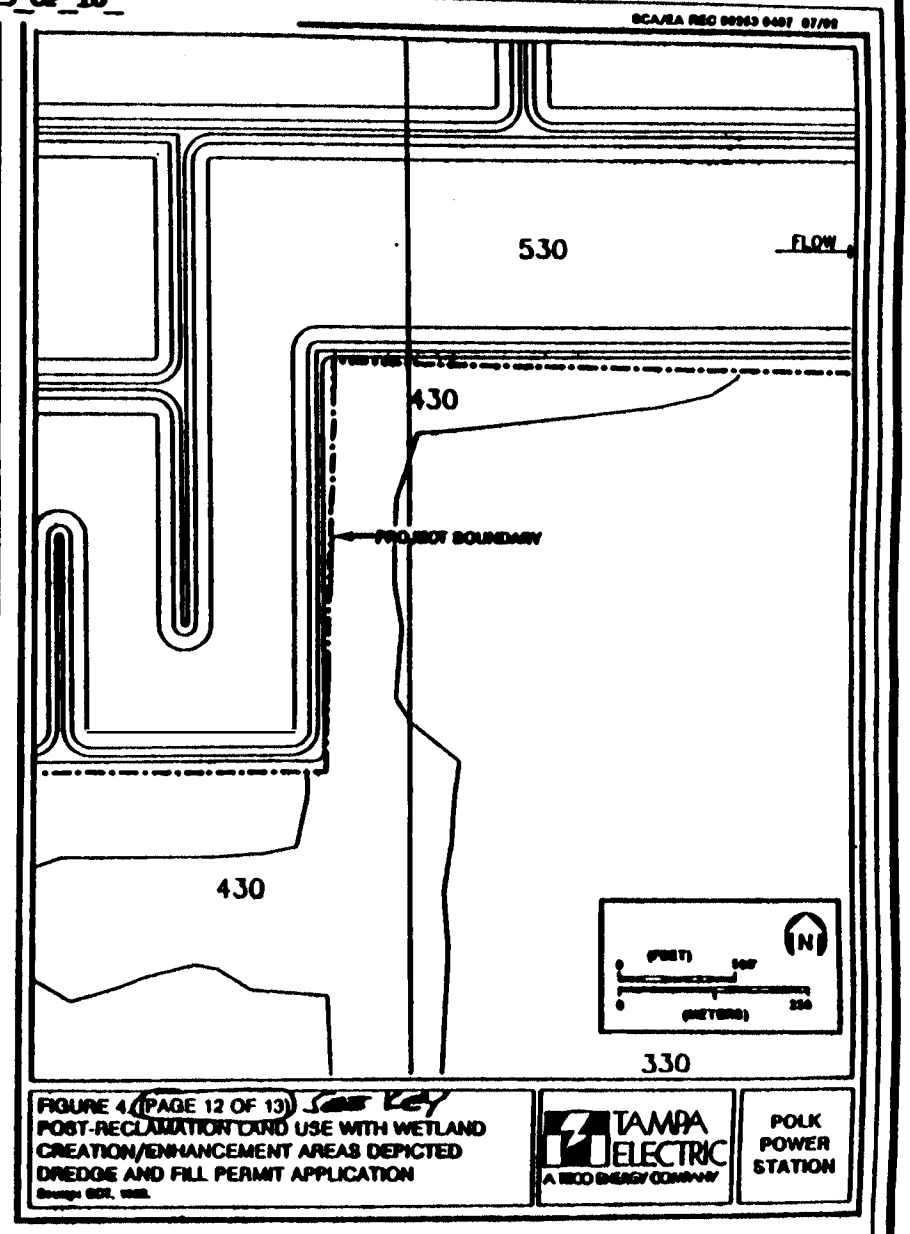

FIGURE 4. (PAGE 12 OF 13) SEE KEY
POST-RECLAMATION LAND USE WITH WETLAND CREATION/ENHANCEMENT AREAS DEPICTED
DREDGE AND FILL PERMIT APPLICATION

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

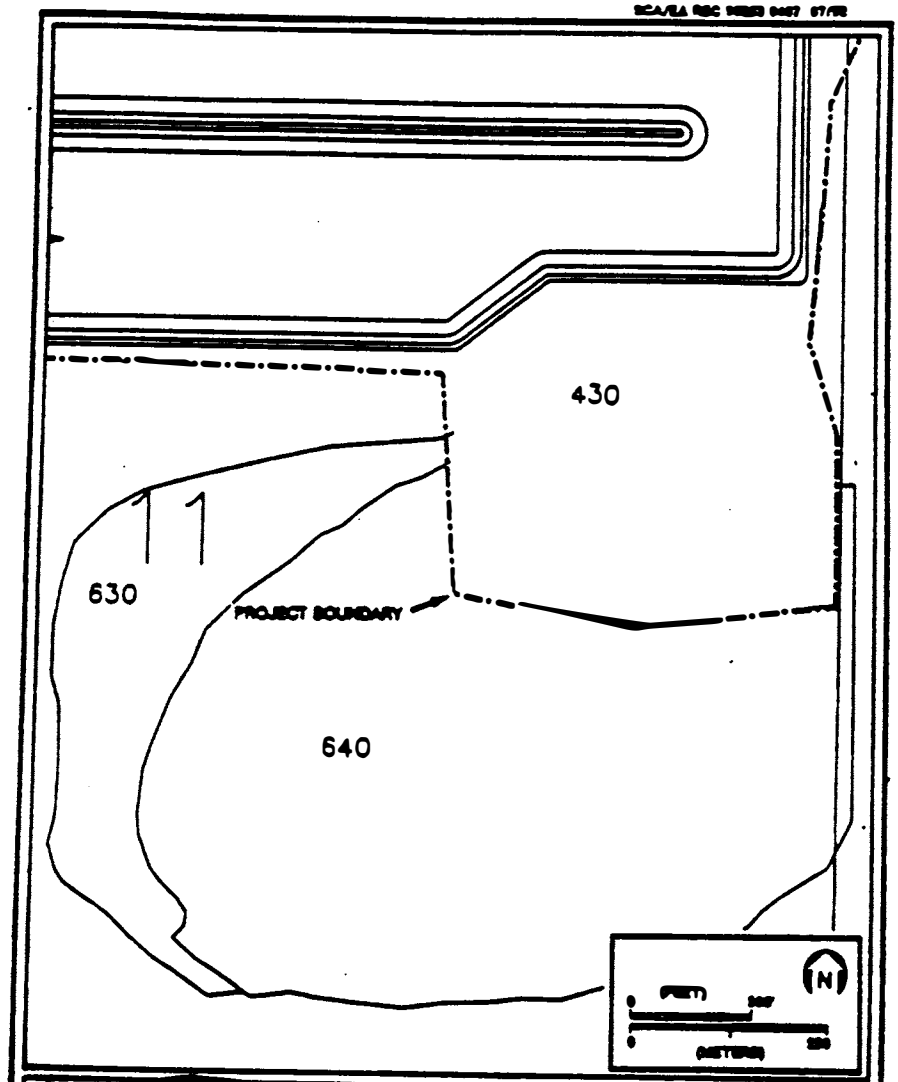

FIGURE 4.0 PAGE 13 OF 13 Sheet Key
POST-RECLAMATION LAND USE WITH WETLAND CREATION/ENHANCEMENT AREAS DEPICTED
DREDGE AND FILL PERMIT APPLICATION

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

COE APP.# 199201345(IP-SH)
DATE: 9/9/92
SHEET 16 OF 16

Florida Department of Environmental Regulation
Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

DER Form # 17-312.900(1)
Form Title Joint Application for Works in the Waters of Florida
Expiration Date October 30, 1991
DER Application No. _____ (Filled in by DER)

Joint Application for Works in the Waters of Florida

Department of the Army (Corps)/Florida Department of Environmental Regulation (DER)/ Department of Natural Resources (DNR)/Delegated Water Management District (Delegated WMD)

Type or Print Legibly

Corps Application Number (official use only)	DER Application Number (official use only)

1. Applicant's Name and Address

Name: Tampa Electric Company
(Last Name, First name (if individual); Corporate Name; Name of Govt. Agency)
Street: Post Office Box 111
City: Tampa State: Florida Zip: 33601-0111
Telephone: (813) 228-4111 (Day) ( ) (Night)

2. Name, Address, Zip Code, Telephone Number and Title of Applicant's Authorized Agent

Name: A. Spencer Autry, Director of Environmental
(Last Name, First Name)
Corporate Name; Name of Govt. Agency: Tampa Electric Company
Street: Post Office Box 111
City: Tampa State: Florida Zip: 33601-0111
Telephone: (813) 228-4111 (Day) ( ) (Night)

3. Name of Waterway at Work Site: Little Payne Creek

4. Street, Road or Other Location of Work: State Road 37, County Road 630, Fort Green Road (see Figure 1)
Incorporated City or Town: near Bradley Junction
Section 34 and 35 Township 31 South Range 23 East
Section 1,2,3,4,9,10,11, and 12 Township 32 South Range 23 East
Section _____ Township _____ Range _____
County(ies): Polk
Coordinates in Center of Project: **Federal Projects Only:** _____ x _____ y
Latitude 27 • 43 • 30 " Longitude 81 • 59 • 0 "
Lot N/A Block _____ Subd _____ Plat Bk _____ Pg _____
Directions to Locate Site: Approximately 12 miles south of Highway 60 in Mulberry, on the east side of State Road 37 (approximately 4 miles south of Bradley Junction, see Figure 1)

5. Names, Addresses, and Zip Codes of Adjacent Property Owners Whose Property Also Adjoins the Water (Excluding Applicant). Show Numbers or Names of These Owners on Plan Views. If More Than Six (6) Owners Adjoin the Project, You May Be Required to Publish a Public Notice for the DER.

1. Agrico Chemical Company
Post Office Box 1110
Mulberry, Florida 33689

2. American Cyanamid Company
Post Office Box 5290
Lakeland, Florida 33807

3. Guy A. Lamb
723 Northeast 7th Street
Fort Meade, Florida 33841

4. Seminole Fertilizer, Inc.
Post Office Box 471
Bartow, Florida 33830

5. _____

6. _____

DER Form # 17-312.900(1)
Form Title Joint Application for Works in the Waters of Florida
Effective Date October 30, 1991
DER Application No. _____ (Assigned by DER)

6. Proposed Use (Check one or more as applicable) Private Single Family ☐ Multi Family ☐
Public ☐ Commercial ☒ New Work ☐ Alteration of Existing Works ☐ Maintenance ☐ Other (Explain) _____

7. Desired Permit Duration (see Fee Schedule)
5 Yr ☒ 10 Yr ☐ Other (Specify) _____

8. General Permit or Exemption Requested
DER General Permit FAC Rule 17-312. _____ DER Exemption FAC Rule 17-312. _____ Section 403. _____ F.S.

9. Total Extent of Work in Jurisdictional Open Waters or Wetlands: (Use additional sheets and provide complete breakdown of each category if more space is needed.

a. Within Corps Jurisdiction:
Fill: 11,025,471 Sq. Ft. 253.11 Acres 3,550,075 Cu. Yds.
Excavation: N/A Sq. Ft. N/A Acres N/A Cu. Yds.

b. Within DER Jurisdiction:
Fill: N/A Sq. Ft. _____ Acres _____ Cu. Yds.
Excavation: N/A Sq. Ft. _____ Acres _____ Cu. Yds.
Excavation Waterward of MHW N/A cu. yds. (Information needed for DNR)

c. DER Jurisdictional Area Severed (Area Landward of Fill Structures which will be Severed):
N/A Sq. Ft. _____ Acres

d. DER Jurisdictional Area Created (New Excavation from Uplands, Exclusive of Mitigation):
N/A Sq. Ft. _____ Acres

e. Docks, Piers, and Over Water Structures:
Total Number of Slips N/A Total Number of Mooring Pilings _____
Length _____ Width _____ Height above MHW _____
Length _____ Width _____ Height above MHW _____
Number of Finger Piers _____ Length _____ Width _____ Height _____
Number of Finger Piers _____ Length _____ Width _____ Height _____
Total area of structure over waters & wetlands _____ sq. ft.
Use of structure _____

Will the docking facility provide:	No	Yes	Number
Liveaboard Slips	☐	☐	
Fueling Facilities	☐	☐	
Sewage Pump-out Facilities	☐	☐	
Other Supplies or Services Required for Boating (Excluding refreshments, bait and tackle)	☐	☐	

f. Seawall length N/A ft. Seawall material _____
Riprap revetment length _____ ft. Slope _____ H: _____ V Toe width _____ ft.
Riprap at toe of seawall length _____ ft. Slope _____ H: _____ V Toe width _____ ft.
Size of riprap _____
Type of riprap or seawall material _____

g. Other (See Item 10)

DER Form # 17-312.900(1)
Form Title Joint Application for Works in the Waters of Florida
Effective Date October 30, 1991
DER Application No. (Filled in by DER)

10. Description of Work (be specific; use additional sheets as necessary).

See Attachment A, Response to Item 10.

11. Turbidity, Erosion, and Sedimentation Controls Proposed:

Existing mine cuts to be dewatered prior to commencement of grading activities. A silt screen will be erected upstream of the point of offsite discharge (see Figure 5, Sheet 9 of 13, and Attachment A, Response to Item 10).

12. Date Activity is Proposed to Commence January 1994 ; to be Completed January 1997

Total Time Required to Construct _____

13. Previous Applications for this Project have been:

	DER No.	Corps No.
A. Denied (date) _____		
B. Issued (date) April 20, 1990	531620259	89IPC-20202 06/29/90
		20223 08/30/89
C. Other (please explain) _____		

Differentiate between existing work and proposed work on the drawings.

14. Certification. Application is hereby made for a permit or permits to authorize the activities described herein.

A. I Certify That: (Please check appropriate space)

1. I am the record owner ☐ ; lessee ☐ , or the record easement holder ☐ of the property on which the proposed project is to be undertaken, as described in the attached legal document.

2. I am not ☒ the record owner, lessee, or record easement holder of the property on which the proposed project is to be undertaken, as described in the attached legal document, but I will have, before undertaking the proposed work, the requisite property interest. (Please explain what the interest will be and how it will be acquired.)

Attach legal description of property or copy of deed to the property on which project is to occur (must be provided)

(See Attachment B)

B. I understand I may have to provide any additional information/data that may be necessary to provide reasonable assurance or evidence that the proposed project will comply with the applicable State Water Quality Standards or other environmental standards both before construction and after the project is completed.

C. In addition, I agree to provide entry to the project site for inspectors with proper identification or documents as required by law from the environmental agencies for the purpose of inspecting the site. Further, I agree to provide entry to the project site for such inspectors to monitor permitted work, if a permit is granted.

D. This is a Joint Application and is not a Joint Permit. I hereby acknowledge the obligation and responsibility for obtaining all of the required state, federal or local permits before commencement of construction. I also understand that before commencement of this proposed project, I must be granted separate permits or authorizations from the U.S. Corps of Engineers, the U.S. Coast Guard, the Department of Environmental Regulation, the Delegated Water Management District (where applicable), and the Department of Natural Resources, as necessary.

DER Form No. 17-312.900(1)
Form Title Joint Application for Permits in the Waters of Florida
Effective Date October 30, 1991
DER Application No. _____ (Filled in by DER)

E. I am familiar with the information contained in this application, and that to the best of my knowledge and belief, such information is true, complete and accurate. I further certify that I possess the authority to undertake the proposed activities or am acting as the duly authorized agent of the applicant. I understand that knowingly making any false statement or representation in this application is a violation of Section 403.161, F.S. and Chapter 837, F.S.

A. Spencer Autry		July 24, 1992
Typed/Printed Name of Applicant or Agent	Signature of Applicant or Agent	Date

Director, Environmental
(Corporate Title if applicable)

AN AGENT MAY SIGN ABOVE IF APPLICANT COMPLETES THE FOLLOWING:

I hereby designate and authorize the agent listed above to act on my behalf as my agent in the processing of this permit application and to furnish on request, supplemental information in support of the application.

Charles R. Black		July 24, 1992
Typed/Printed Name of Applicant	Signature of Applicant	Date

Vice President, Project Management
(Corporate Title if applicable)

15. For your information: Section 370.034, Florida Statutes, requires that all dredge and fill equipment owned, used, leased, rented or operated in the state shall be registered with the Department of Natural Resources. Before selecting your contractor or equipment you may wish to determine if this requirement has been met. For further information, contact the Chief of the Bureau of Saltwater Licenses and Permits, Department of Natural Resources, 3900 Commonwealth Boulevard, Tallahassee, Florida 32399. Telephone No. (904) 487-3122. **This is not a requirement for a permit from the Department of Environmental Regulation.**

18 U.S.C. Section 1001 provides that, Whoever, in any manner within the jurisdiction of any department or agency of The United States knowingly and willfully falsifies, conceals, or covers up by any trick, scheme, or device a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statement or entry, shall be fined not more than $10,000 or imprisoned not more than five years, or both.

16. Please submit this completed form, with attached drawings and the complete DER processing fee (see Fee Schedule in Rule 17-4.050, F.A.C., copy attached) to the appropriate DER or Delegated WMD office with jurisdiction over the project site.

TAMPA ELECTRIC
A TECO ENERGY COMPANY

To Whom It May Concern:

Tampa Electric Company intends to acquire all lands designated in this application for the Polk Power Station and its associated facilities prior to the commencement of construction. This land will be used for construction of these facilities as described in the application.

Charles R. Black
Vice President
Project Management

/wp78

TAMPA ELECTRIC COMPANY
P.O. Box 111 Tampa, Florida 33601-0111 (813) 223-0888

TAMPA ELECTRIC
A TECO ENERGY COMPANY

To Whom It May Concern:

Please be advised that A. Spencer Autry, Director of Environmental, is the authorized representative of Tampa Electric Company concerning matters with which this permit application deals.

Sincerely,

Charles R. Black
Vice President
Project Management

/Permit2

EPA Comments on USACOE
Public Notice

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

MAY 11 1994

REF: 4WM/WOWB/MW

Colonel Terrence C. Salt
District Engineer
U.S. Army Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232-0019

Attention: Mike Nowicki

Subject: Tampa Electric Company
199201345(IP-MN)

Dear Colonel Salt:

This is in response to the above referenced public notice dated October 7, 1992, concerning a proposal to fill a total of 253.11 acres of wetlands for the construction of a new power generating facility. The subject activity is located in wetlands associated with Little Payne Creek, in Sections 1-4 and 9-12, T32S-R23E, Polk County, Florida.

The Environmental Protection Agency (EPA) after reviewing the public notice and the draft Environmental Impact Statement (EIS) offers these comments. In a letter dated November 6, 1992, EPA requested the Corps of Engineers to hold the applicant's Section 404 permit request in abeyance until the ongoing EIS was complete. EPA has reviewed the final draft EIS and feels that the applicant has complied with the Section 404(b)(1) guidelines as to site selection and wetland minimization. We also concur with the applicant's proposed wetland mitigation plan as it complies with the Florida Department of Environmental Protection's mitigation guidelines.

Therefore, EPA has no objection to the issuance of the Section 404 permit. Thank you for the opportunity to review this matter and should you have any questions concerning our comments, please contact Mike Wylie of the Wetlands Regulatory staff at 404/347-4015.

Sincerely yours,

W. Ray Cunningham

W. Ray Cunningham, Director
Water Management Division

Update of Tampa Electric Company Application

TAMPA ELECTRIC
A TECO ENERGY COMPANY

May 9, 1994

Mr. John Hall
Chief, Regulatory Division
U.S. Army Corps of Engineers
Post Office Box 4970
Jacksonville, FL 32232

FEDERAL EXPRESS
Airbill # 8334849316

Re: Tampa Electric Company
Polk Power Station
Permit Application No. 199201345 (IP-MN)

Dear Mr. Hall:

As you know, Tampa Electric Company is in the process of obtaining necessary authorizations for construction and operation of an integrated coal gasification combined cycle generating facility to be located at the site of phosphate mining operations in Polk County, Florida. Early in the process Tampa Electric Company met with representatives of the United States Army Corps of Engineers and those representatives made a determination of areas that the Corps would assert jurisdiction over for purposes of the Clean Water Act. A permit application was filed with the Corps for areas proposed to be impacted by the discharge of dredged or fill material, as required by Section 404 of the Clean Water Act. As we understand it, the application is undergoing review as a part of the overall project review involved with the Environmental Impact Statement (EIS) process.

Since the application was initially filed with the Corps, there have been some changes to the facility layout. In addition, Tampa Electric Company has now acquired ownership of the site and there is a need to update the list of adjacent property owners. The enclosed documents update the application with this additional information.

The update to the application does not affect the areas that will be impacted, or the mitigation proposed for the site. The changes result from the refinement of the design of the facility. We request that this material be made a part of the pending application for a Section 404 authorization.

We will be happy to meet with you and discuss any of these items if you believe it would be useful. In the meantime, please let us know if further information is required.

We look forward to continuing to work cooperatively with the Corps toward a resolution of the permitting process.

Sincerely,

A. Spencer Autry
Director
Environmental

td\LL671

Enclosure

cc: Mr. Chris Hoberg, U.S.EPA,
Region IV (w/enc)

Florida Department of Environmental Regulation
Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

DER Form # 17-312.900(1)
Form Title Joint Ap. for Works in the Waters of Florida
Effective Date October 30, 1991
DER Application No. _____ (Filled in by DER)

Joint Application for Works in the Waters of Florida

Department of the Army (Corps)/Florida Department of Environmental Regulation (DER)/ Department of Natural Resources (DNR)/Delegated Water Management District (Delegated WMD)

Type or Print Legibly

Corps Application Number (official use only)	DER Application Number (official use only)

1. Applicant's Name and Address

Name Tampa Electric Company
Last Name, First name (if individual); Corporate Name; Name of Govt. Agency
Street Post Office Box 111
City Tampa State Florida Zip 33601-0111
Telephone (813) 228-4111 (Day) ( ) _____ (Night)

2. Name, Address, Zip Code, Telephone Number and Title of Applicant's Authorized Agent

Name A. Spencer Autry, Director Of Environmental
Last Name, First Name
Corporate Name; Name of Govt. Agency Tampa Electric Company
Street Post Office Box 111
City Tampa State Florida Zip 33601-0111
Telephone (813) 228-4111 (Day) ( ) _____ (Night)

3. Name of Waterway at Work Site: Little Payne Creek

4. Street, Road or Other Location of Work State Road 37, County Road 630, Fort Green Road (see Figure 1)
Incorporated City or Town near Bradley Junction
Section 34 and 35 Township 31 South Range 23 East
Section 1,2,3,4,9,10,11, and 12 Township 32 South Range 23 East
Section _____ Township _____ Range _____
County(ies) Polk

Coordinates in Center of Project: Federal Projects Only: _____ x _____ y
Latitude 27 ° 43 ' 30 " Longitude 81 ° 59 ' 0 "

Lot N/A Block _____ Subd _____ Plat Bk _____ Pg _____

Directions to Locate Site: Approximately 12 miles south of Highway 60 in Mulberry, on the east side of State Road 37 (approximately 4 miles south of Bradley Junction, see Figure 1)

5. Names, Addresses, and Zip Codes of Adjacent Property Owners Whose Property Also Adjoins the Water (Excluding Applicant). Show Numbers or Names of These Owners on Plan Views. If More Than Six (6) Owners Adjoin the Project, You May Be Required to Publish a Public Notice for the DER.

1. IMC-Agrico Co.
Post Office Box 2000
Mulberry, FL 33860
2. _____
3. _____
4. _____
5. _____
6. _____

Northwest District 160 Governmental Center
Northeast District Suite 8200, 7825 Baymeadows Way
Central District 3319 Maguire Blvd. Suite 232
Southwest District 4520 Oak Fair Blvd
South District 2269 Bay St.
Southeast District 1900 S. Congress Ave., Suite A

DER Form # 17-312.900(1)
Form Title Joint Application for Works in the Waters of Florida
Effective Date October 30, 1991
DER Application No. _____ (Filled in by DER)

6. Proposed Use (Check one or more as applicable) Private Single Family ☐ Multi Family ☐
Public ☐ Commercial ☒ New Work ☐ Alteration of Existing Works ☐ Maintenance ☐ Other (Explain) _____

7. Desired Permit Duration (see Fee Schedule)
5 Yr ☒ 10 Yr ☐ Other (Specify) _____

8. General Permit or Exemption Requested
DER General Permit FAC Rule 17-312. _____ DER Exemption FAC Rule 17-312. _____ Section 403. _____ F.S.

9. Total Extent of Work in Jurisdictional Open Waters or Wetlands: (Use additional sheets and provide complete breakdown of each category if more space is needed.

a. Within Corps Jurisdiction:
Fill: 11,025,471 Sq. Ft. 253.11 Acres 3,550,075 Cu. Yds.
Excavation: N/A Sq. Ft. N/A Acres N/A Cu. Yds.

b. Within DER Jurisdiction:
Fill: N/A Sq. Ft. _____ Acres _____ Cu. Yds.
Excavation: N/A Sq. Ft. _____ Acres _____ Cu. Yds.
Excavation Waterward of MHW N/A cu. yds. (Information needed for DNR)

c. DER Jurisdictional Area Severed (Area Landward of Fill Structures which will be Severed):
N/A Sq. Ft. _____ Acres

d. DER Jurisdictional Area Created (New Excavation from Uplands, Exclusive of Mitigation):
N/A Sq. Ft. _____ Acres

e. Docks, Piers, and Over Water Structures:
Total Number of Slips N/A Total Number of Mooring Pilings _____
Length _____ Width _____ Height above MHW _____
Length _____ Width _____ Height above MHW _____
Number of Finger Piers _____ Length _____ Width _____ Height _____
Number of Finger Piers _____ Length _____ Width _____ Height _____
Total area of structure over waters & wetlands _____ sq. ft.
Use of structure _____

Will the docking facility provide:	No	Yes	Number
Liveaboard Slips	☐	☐	_____
Fueling Facilities	☐	☐	_____
Sewage Pump-out Facilities	☐	☐	_____
Other Supplies or Services Required for Boating (Excluding refreshments, bait and tackle)	☐	☐	_____

f. Seawall length N/A ft. Seawall material _____
Riprap revetment length _____ ft. Slope _____ H: _____ V Toe width _____ ft.
Riprap at toe of seawall length _____ ft. Slope _____ H: _____ V. Toe width _____ ft.
Size of riprap _____
Type of riprap or seawall material _____

g. Other (See Item 10).

DER Form # 17-312.900(1)
Form Title Joint Application for Works in the Waters of Florida
Effective Date October 30, 1991
DER Application No. _____ (Filled in by DER)

10. Description of Work (be specific; use additional sheets as necessary).

See Attachment A, Response to Item 10.

11. Turbidity, Erosion, and Sedimentation Controls Proposed:

Existing mine cuts to be dewatered prior to commencement of grading activities. A silt screen will be erected upstream of the point of offsite discharge (see Figure 5, Sheet 9 of 13, and Attachment A, Response to Item 10).

12. Date Activity is Proposed to Commence May 1994 ; to be Completed January 1997

Total Time Required to Construct _____

13. Previous Applications for this Project have been:

	DER No.	Corps No.
A. Denied (date) _____		
B. Issued (date) April 20, 1990	531620259	89IPC-20202 06/29/90
		20223 08/30/89
C. Other (please explain) _____		

Differentiate between existing work and proposed work on the drawings.

14. Certification. Application is hereby made for a permit or permits to authorize the activities described herein.

A. I Certify That: (Please check appropriate space)

1. I am the record owner [X]; lessee [ ], or the record easement holder [ ] of the property on which the proposed project is to be undertaken, as described in the attached legal document.

2. I am not [ ] the record owner, lessee, or record easement holder of the property on which the proposed project is to be undertaken, as described in the attached legal document, but I will have, before undertaking the proposed work, the requisite property interest. (Please explain what the interest will be and how it will be acquired.)

Attach legal description of property or copy of deed to the property on which project is to occur (must be provided)
(See Attachment B)

B. I understand I may have to provide any additional information/data that may be necessary to provide reasonable assurance or evidence that the proposed project will comply with the applicable State Water Quality Standards or other environmental standards both before construction and after the project is completed.

C. In addition, I agree to provide entry to the project site for inspectors with proper identification or documents as required by law from the environmental agencies for the purpose of inspecting the site. Further, I agree to provide entry to the project site for such inspectors to monitor permitted work, if a permit is granted.

D. This is a Joint Application and is **not** a Joint Permit. I hereby acknowledge the obligation and responsibility for obtaining all of the required state, federal or local permits **before** commencement of construction. I also understand that before commencement of this proposed project, I must be granted separate permits or authorizations from the U.S. Corps of Engineers, the U.S. Coast Guard, the Department of Environmental Regulation, the Delegated Water Management District (where applicable), and the Department of Natural Resources, as necessary.

DER Form # 17-312.900(1)
Form Title Joint Application for Works in the Waters of Florida
Effective Date October 30, 1991
DER Application No. _____ (Filled in by DER)

E. I am familiar with the information contained in this application, and that to the best of my knowledge and belief, such information is true, complete and accurate. I further certify that I possess the authority to undertake the proposed activities or am acting as the duly authorized agent of the applicant. I understand that knowingly making any false statement or representation in this application is a violation of Section 403.161, F.S. and Chapter 837, F.S.

A. Spencer Autry — Typed/Printed Name of Applicant or Agent
Signature of Applicant or Agent — 5/9/94 Date

Director, Environmental
(Corporate Title if applicable)

AN AGENT MAY SIGN ABOVE IF APPLICANT COMPLETES THE FOLLOWING:

I hereby designate and authorize the agent listed above to act on my behalf as my agent in the processing of this permit application and to furnish on request, supplemental information in support of the application.

Charles R. Black — Typed/Printed Name of Applicant
Signature of Applicant — 5-6-94 Date

Vice President, Project Management
(Corporate Title if applicable)

15. **For your information:** Section 370.034, Florida Statutes, requires that all dredge and fill equipment owned, used, leased, rented or operated in the state shall be registered with the Department of Natural Resources. Before selecting your contractor or equipment you may wish to determine if this requirement has been met. For further information, contact the Chief of the Bureau of Saltwater Licenses and Permits, Department of Natural Resources, 3900 Commonwealth Boulevard, Tallahassee, Florida 32399. Telephone No. (904) 487-3122. **This is not a requirement for a permit from the Department of Environmental Regulation.**

18 U.S.C. Section 1001 provides that, Whoever, in any manner within the jurisdiction of any department or agency of The United States knowingly and willfully falsifies, conceals, or covers up by any trick, scheme, or device a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statement or entry, shall be fined not more than $10,000 or imprisoned not more than five years, or both.

16. Please submit this completed form, with attached drawings and the complete DER processing fee (see Fee Schedule in Rule 17-4.050, F.A.C., copy attached) to the appropriate DER or Delegated WMD office with jurisdiction over the project site.

TAMPA ELECTRIC
A TECO ENERGY COMPANY

To Whom It May Concern:

Please be advised that A. Spencer Autry, Director of Environmental, is the authorized representative of Tampa Electric Company concerning matters with which this permit application deals.

Sincerely,

Charles R. Black
Vice President
Project Management

/Permit2

ATTACHMENT A
RESPONSE TO ITEM 10

With this application Tampa Electric Company seeks permission to place fill within and recontour heavily disturbed wetlands and open water areas which have formed subsequent to phosphate mining activities on the proposed Polk Power Station property (see Figures 1, 2, 3, 4, and 5).

Existing, unreclaimed mine cuts on the property will be incorporated into a cooling reservoir, a stormwater retention pond and wetland enhancement areas (see Figures 2, 3, 4, and 5). Areas proposed for fill placement are either currently unvegetated or are narrow littoral zones vegetated with a dominance of invasive cattail (Typha sp.). Approximately 211.78 acres of this wetland type will be filled for the construction of a series of containment berms for the cooling reservoir, transmission line, and the power plant (see Table 1).

Elsewhere within the Polk Power Station site, isolated disturbed wetlands, which have either formed subsequent to clearing and earthmoving activities or are relict systems, will be displaced for the construction of a functional and practical power plant. These freshwater wetlands are also typically dominated by nuisance species of vegetation including groundsel bush (Baccharis halmifolia), primrose willow (Ludwigia peruviana), Carolina willow (Salix caroliniana) and cattail. More desirable species found within these wetlands included red maple (Acer rubrum), laurel oak (Quercus laurifolia), water oak (Quercus nigra), dahoon holly (Ilex cassine), buttonbush (Cephalanthus occidentalis), sand cordgrass (Spartina bakeri), pickerel-weed (Pontederia cordata), softrush (Juncus effusus), arrowhead (Sagittaria lancifolia), Virginia chain fern (Woodwardia virginica), redroot (Lacnanthes caroliniana) and goldenrod (Solidago fistulosa). Approximately 41.33 acres of this habitat will be displaced for the construction of the plant site.

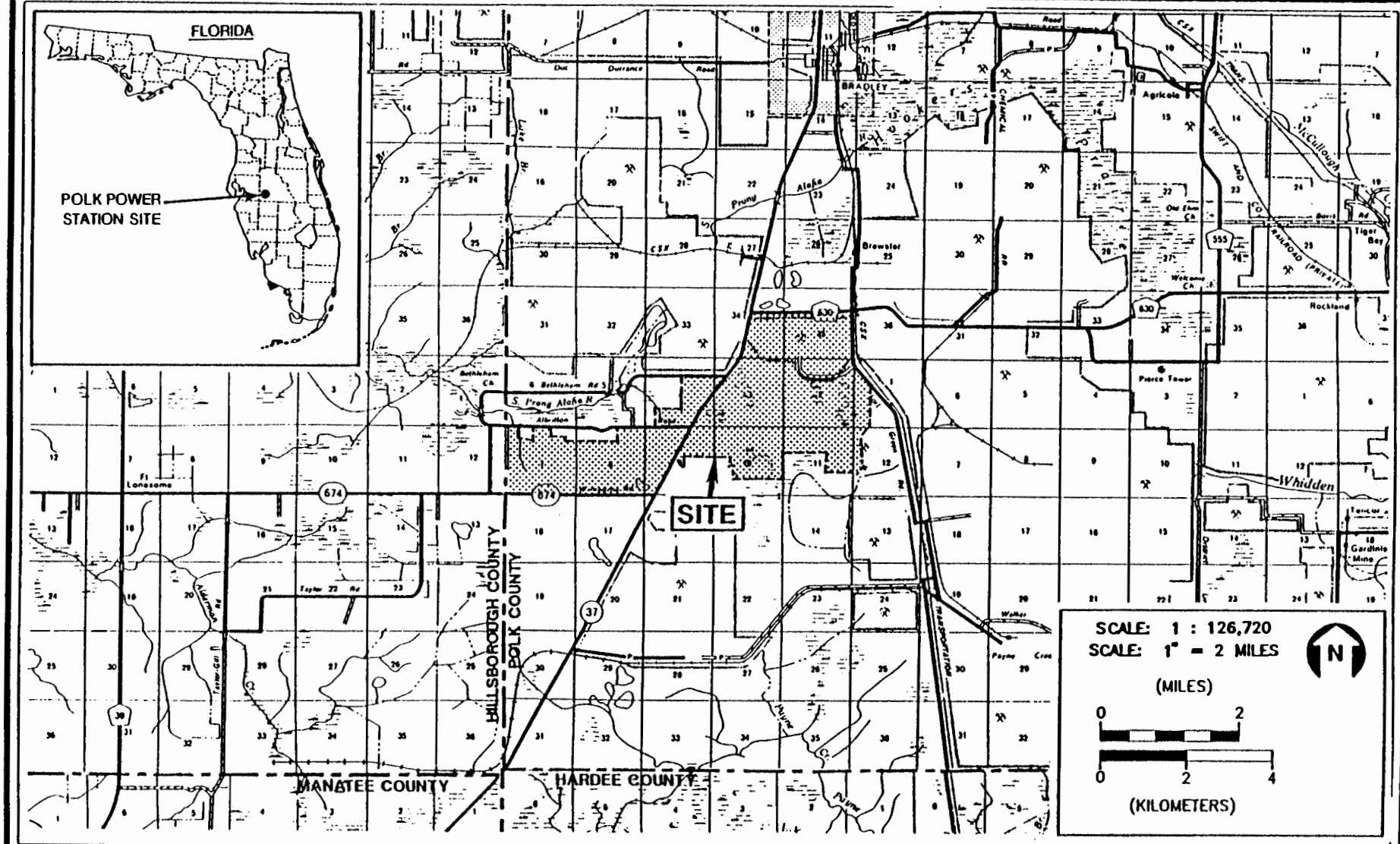

FIGURE 1.
SITE LOCATION MAP
DREDGE AND FILL PERMIT APPLICATION

Sources: FDOT Maps., Hillsborough Co., Polk Co., Manatee Co., Hardee Co.; ECT, 1992.

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

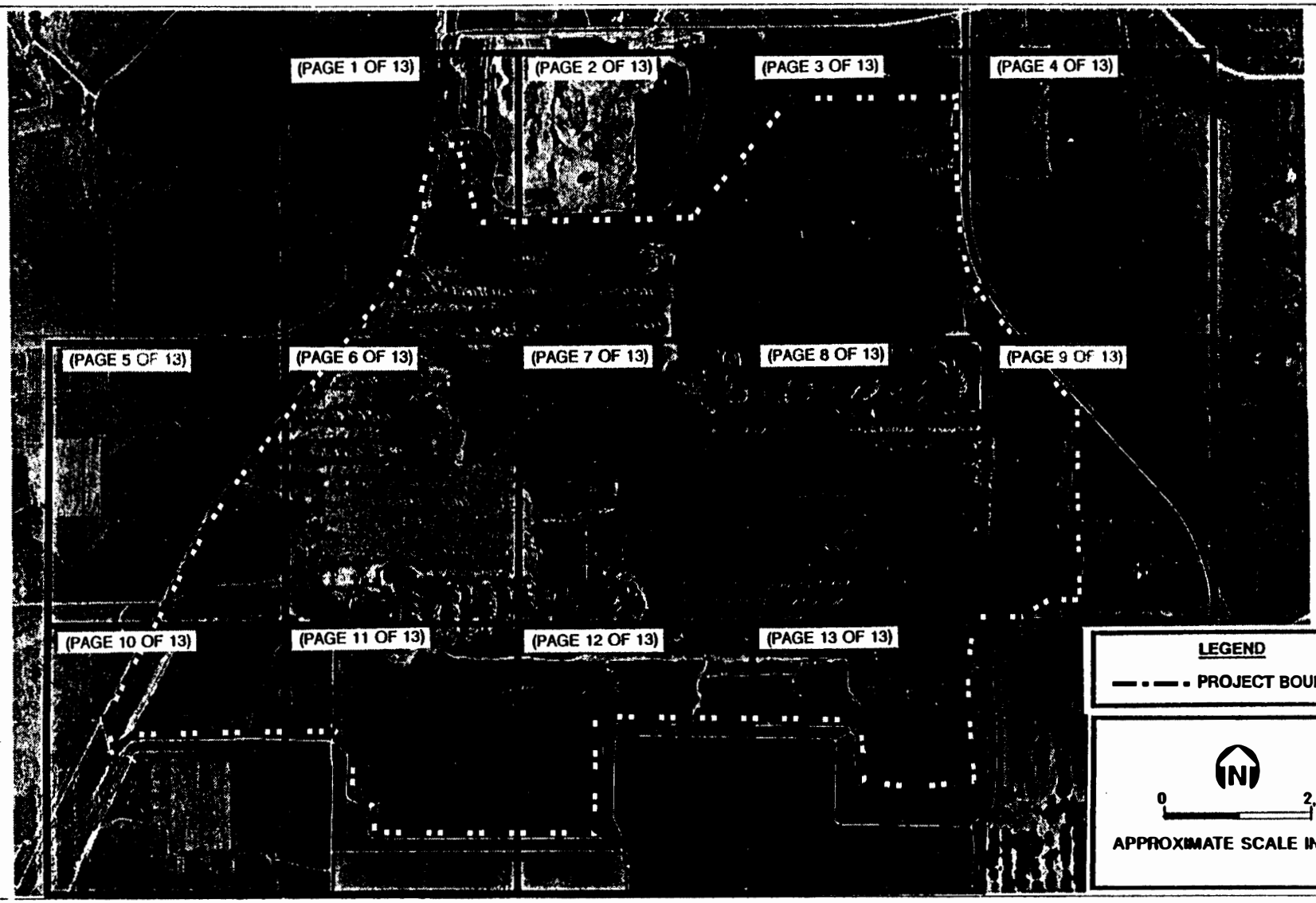

FIGURE 2.
KEY MAP FOR AERIAL PHOTOGRAPHS, POST-RECLAMATION TOPOGRAPHY AND POST-RECLAMATION VEGETATION
DREDGE AND FILL PERMIT APPLICATION
Sources: I.F. Rooks & Assoc. Inc.; ECT, 1992.

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

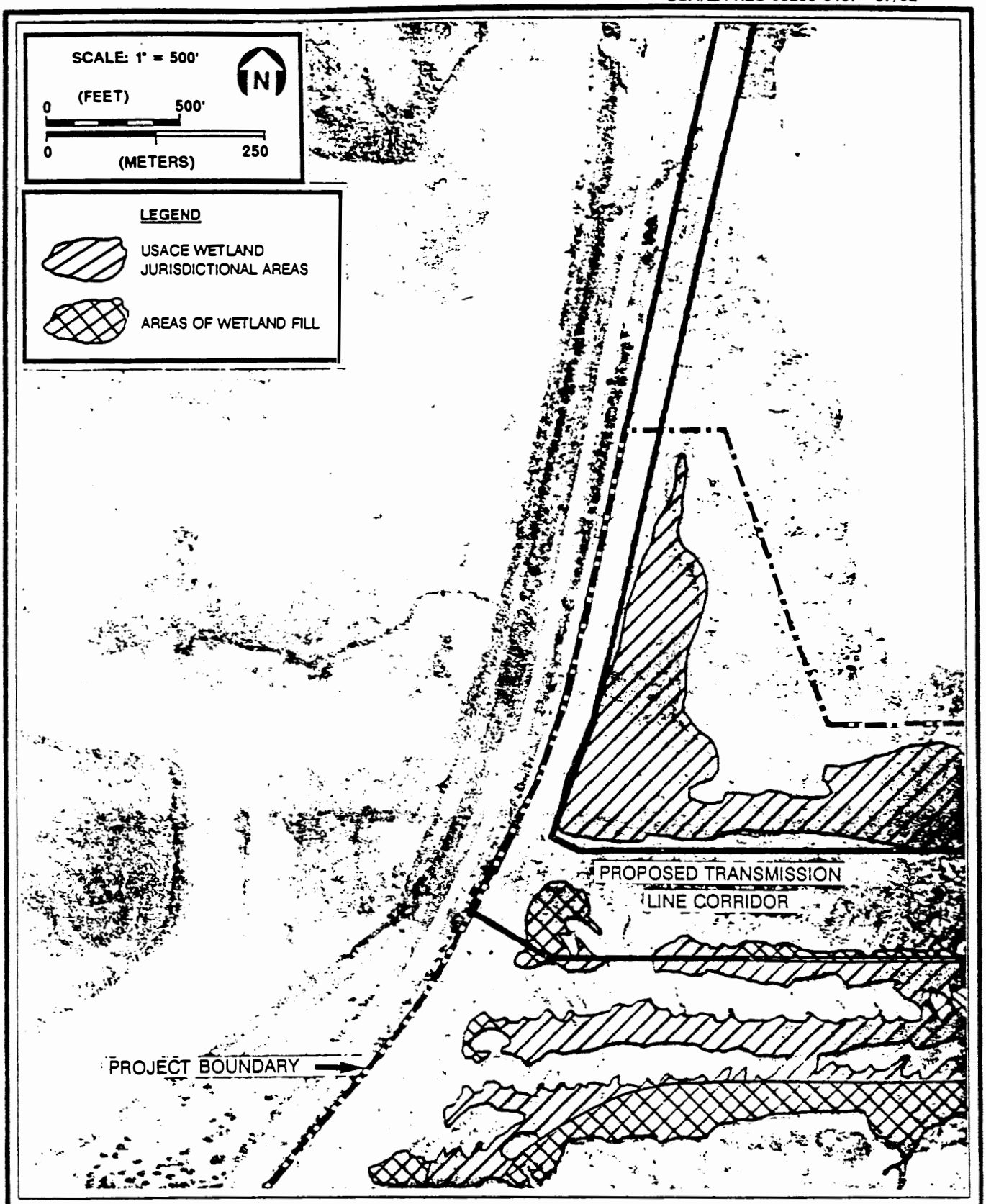

FIGURE 3.
AERIAL PHOTOGRAPHY WITH USACE WETLAND DELINEATIONS (PAGE 1 OF 13)
DREDGE AND FILL PERMIT APPLICATION
Sources: I.F. Rooks & Assoc. Inc.; ECT, 1992.

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

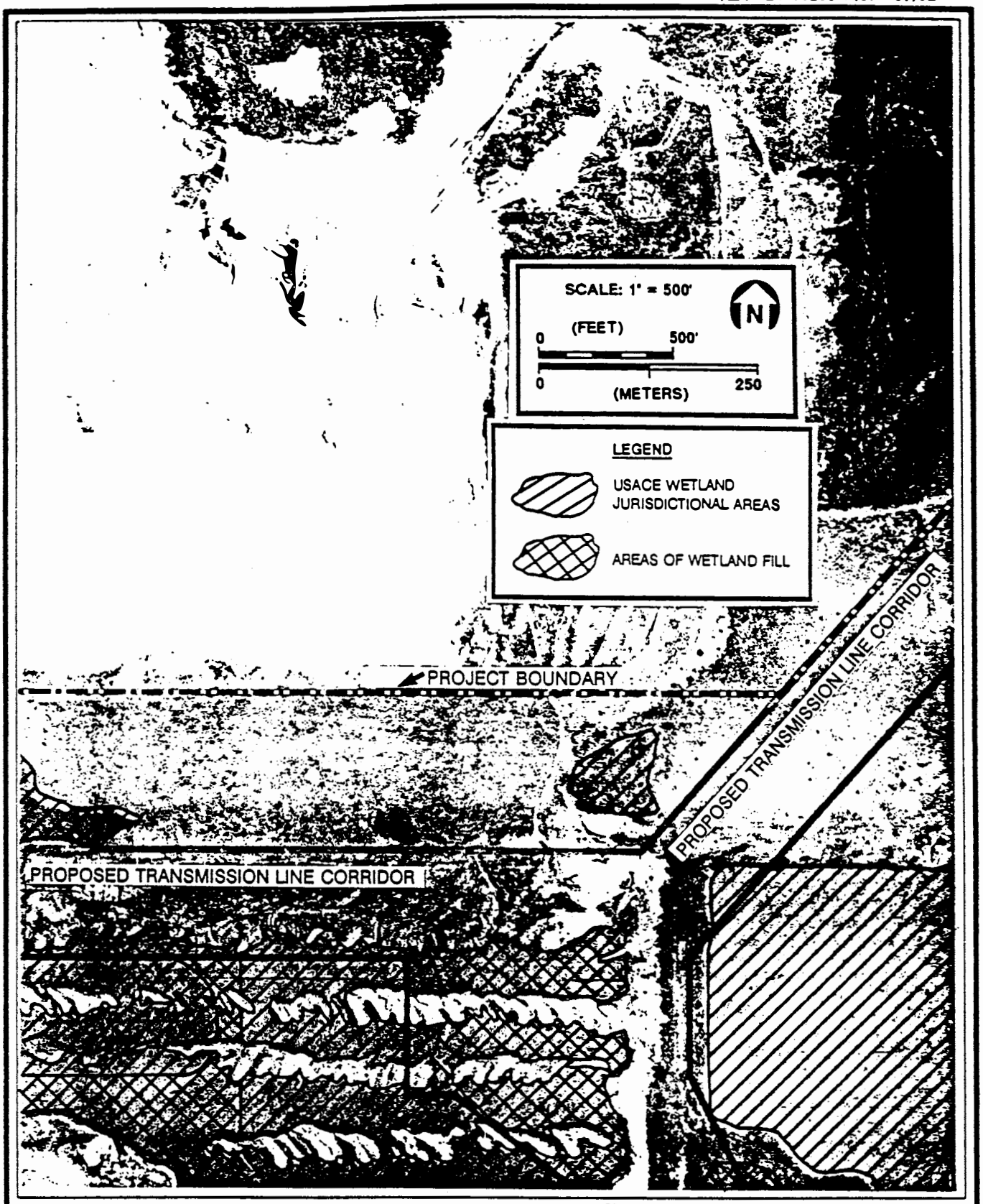

FIGURE 3.
AERIAL PHOTOGRAPHY WITH USACE WETLAND DELINEATIONS (PAGE 2 OF 13)
DREDGE AND FILL PERMIT APPLICATION
Sources: I.F. Rooks & Assoc. Inc.; ECT, 1992.

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

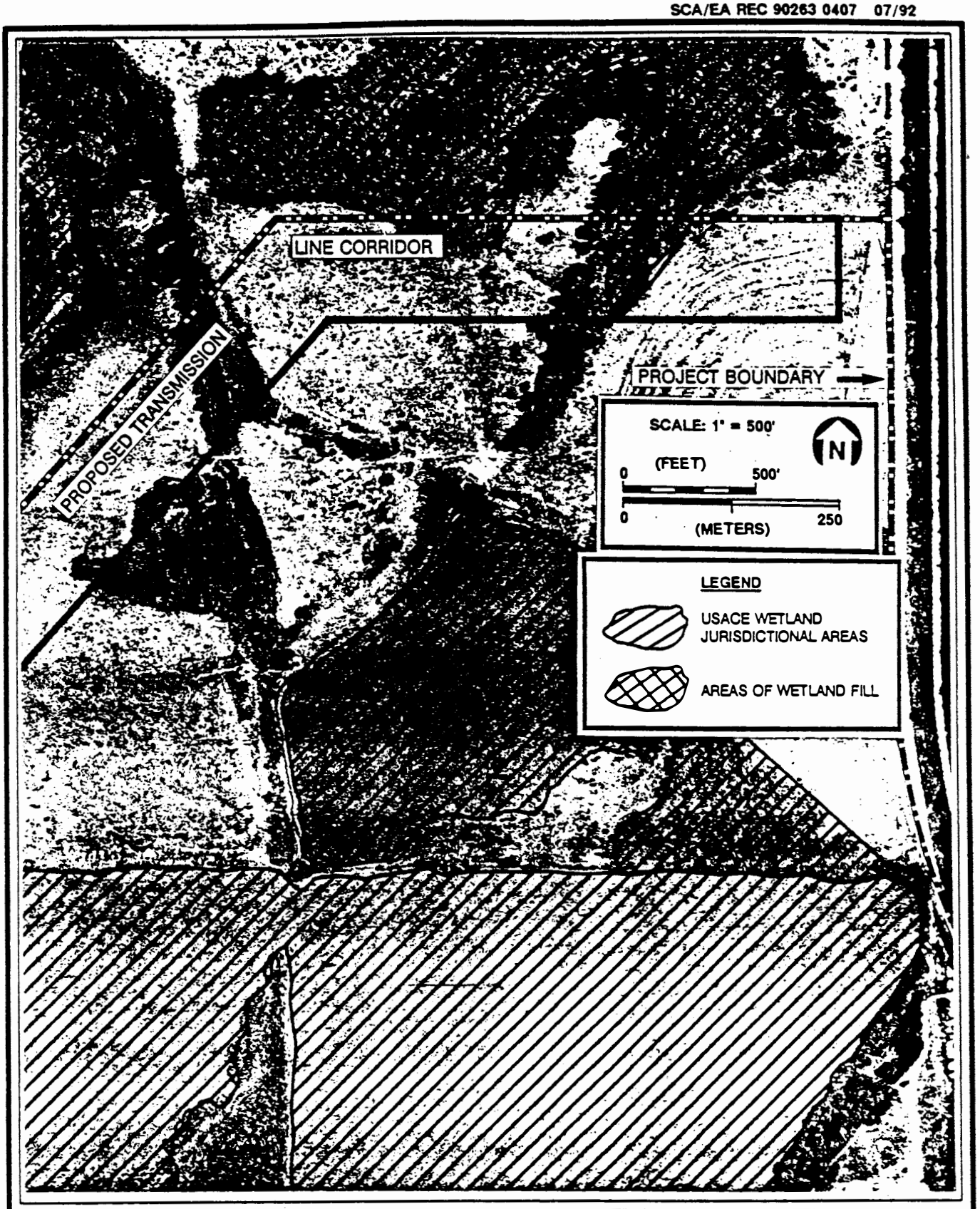

FIGURE 3.
AERIAL PHOTOGRAPHY WITH USACE WETLAND DELINEATIONS (PAGE 3 OF 13)
DREDGE AND FILL PERMIT APPLICATION
Sources: I.F. Rooks & Assoc. Inc.; ECT, 1992.

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

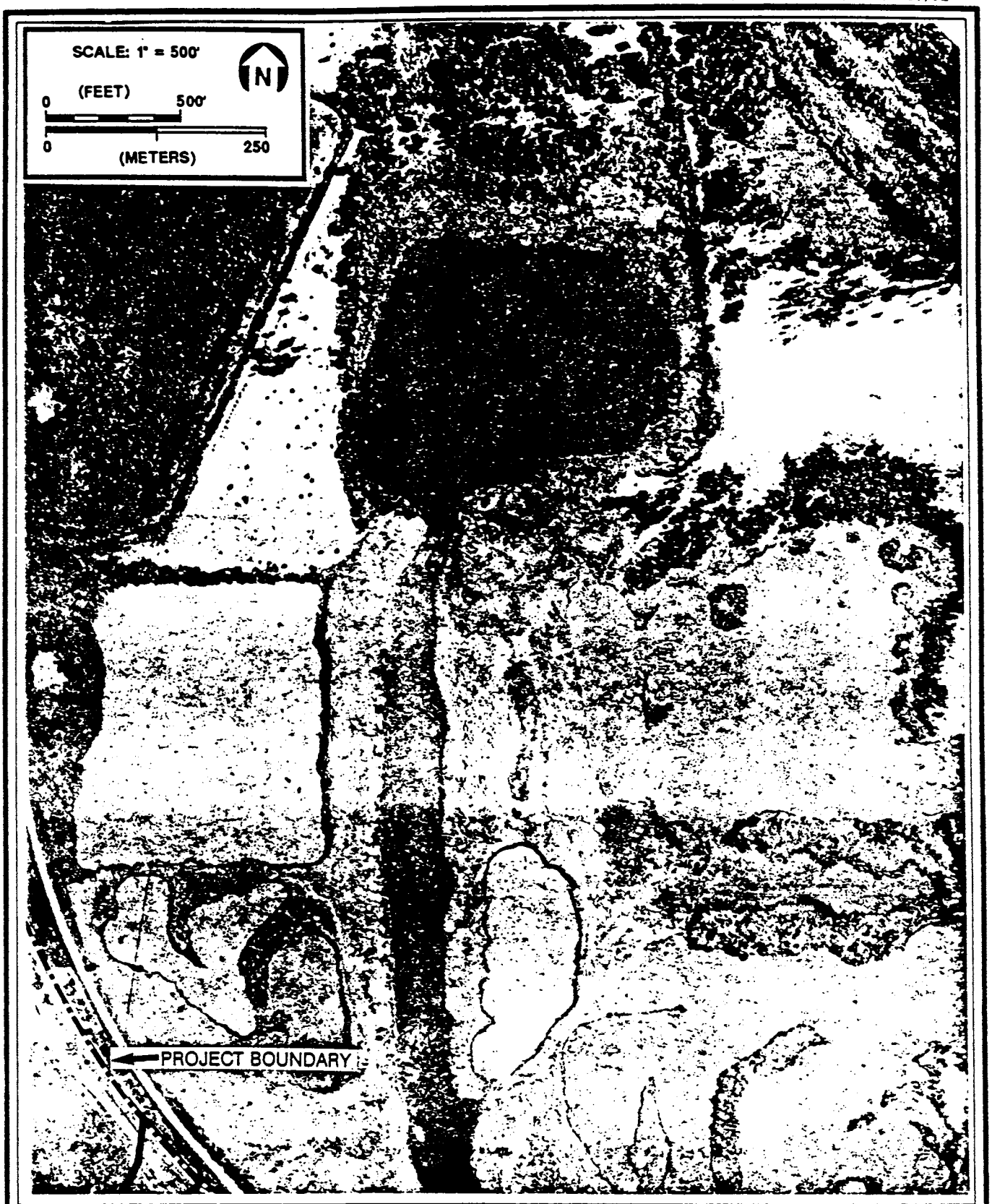

FIGURE 3.
AERIAL PHOTOGRAPHY WITH USACE WETLAND DELINEATIONS (PAGE 4 OF 13)
DREDGE AND FILL PERMIT APPLICATION
Sources: I.F. Rooks & Assoc. Inc.; ECT, 1992.

TAMPA ELECTRIC
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POLK POWER STATION

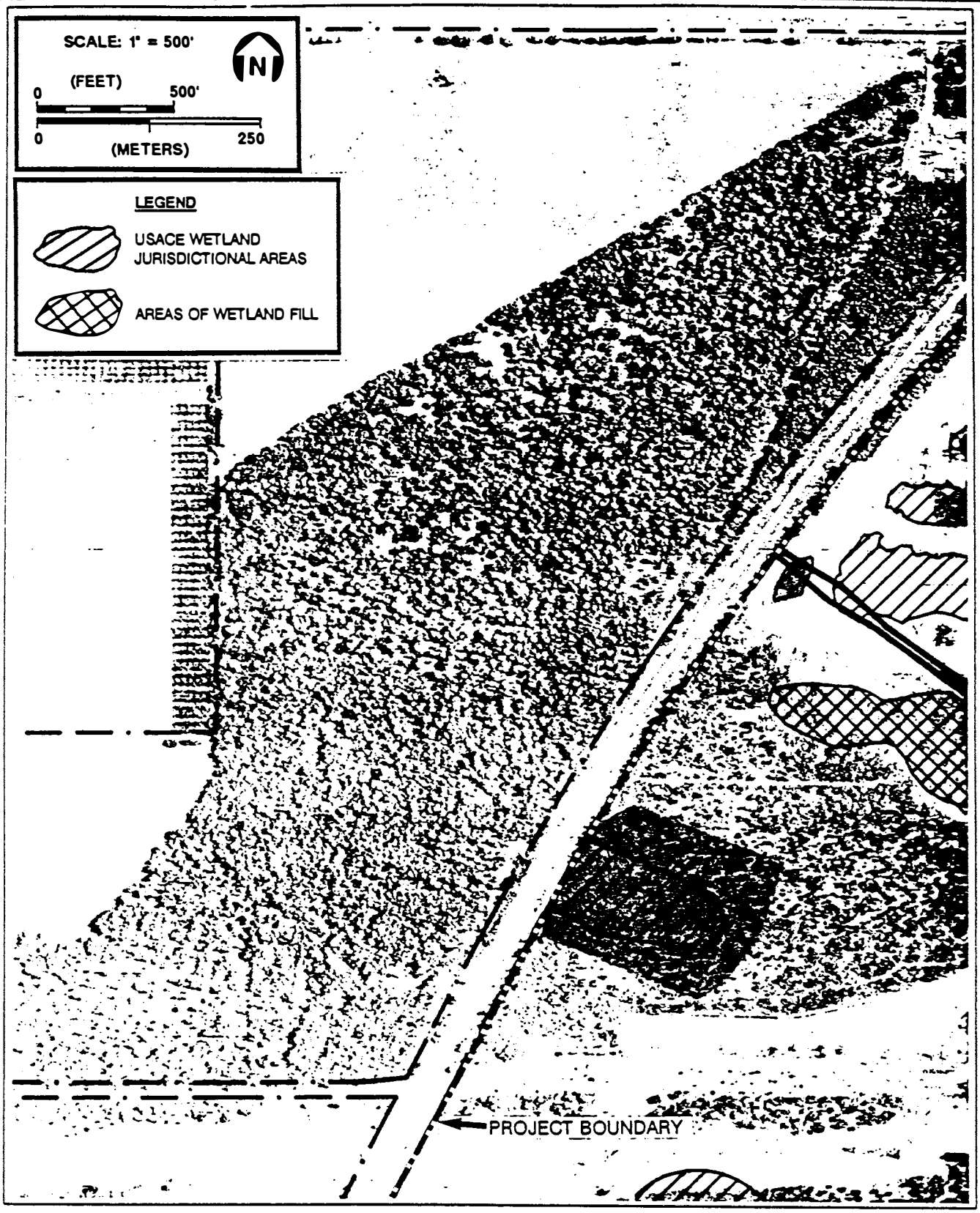

FIGURE 3.
AERIAL PHOTOGRAPHY WITH USACE WETLAND DELINEATIONS (PAGE 5 OF 13)
DREDGE AND FILL PERMIT APPLICATION
Sources: I.F. Rooks & Assoc. Inc.; ECT, 1992.

TAMPA ELECTRIC
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POLK POWER STATION

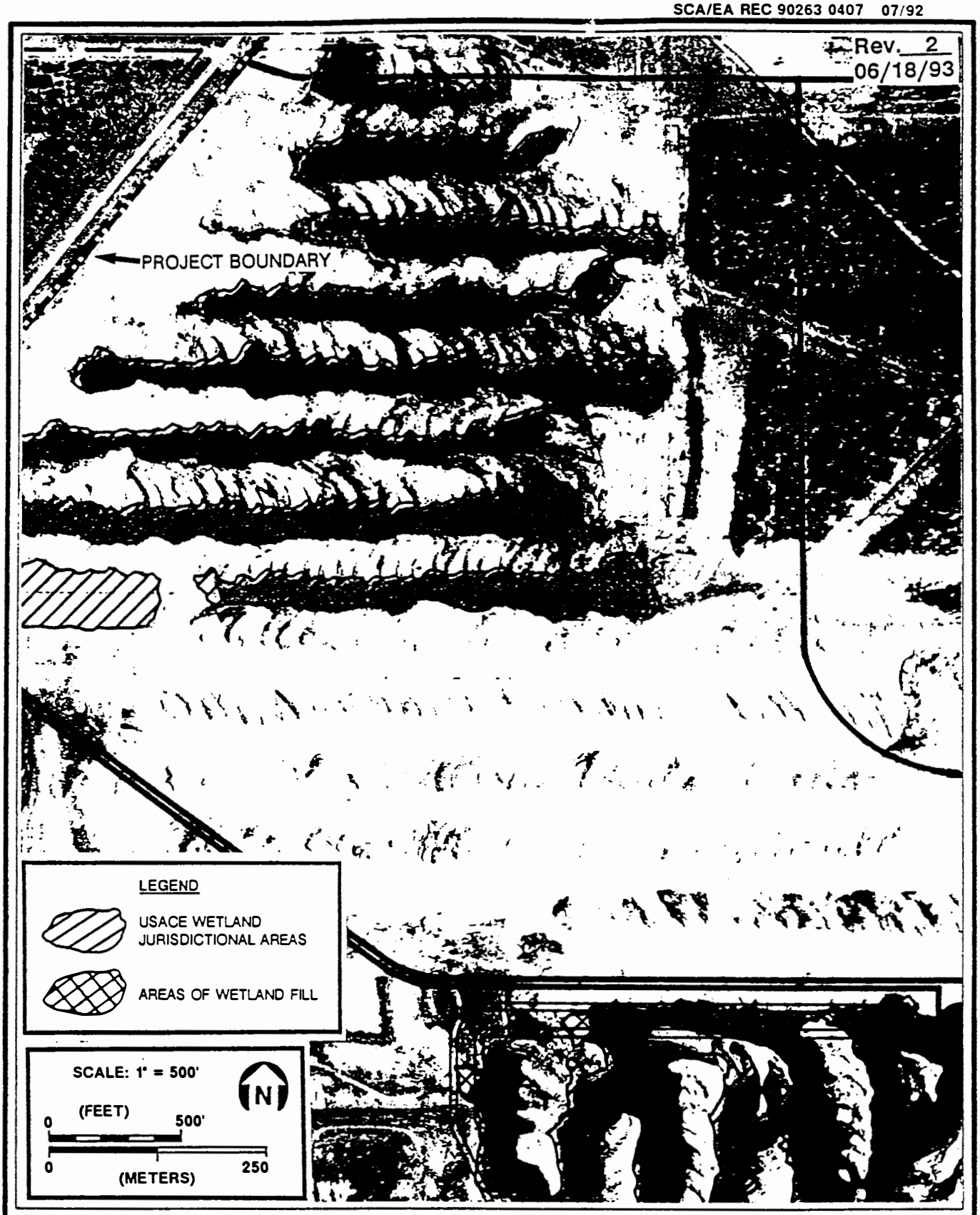

FIGURE 3.
AERIAL PHOTOGRAPHY WITH USACE WETLAND DELINEATIONS (PAGE 6 OF 13)
DREDGE AND FILL PERMIT APPLICATION
Sources: I.F. Rooks & Assoc. Inc.; ECT, 1992.

TAMPA ELECTRIC
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POLK POWER STATION

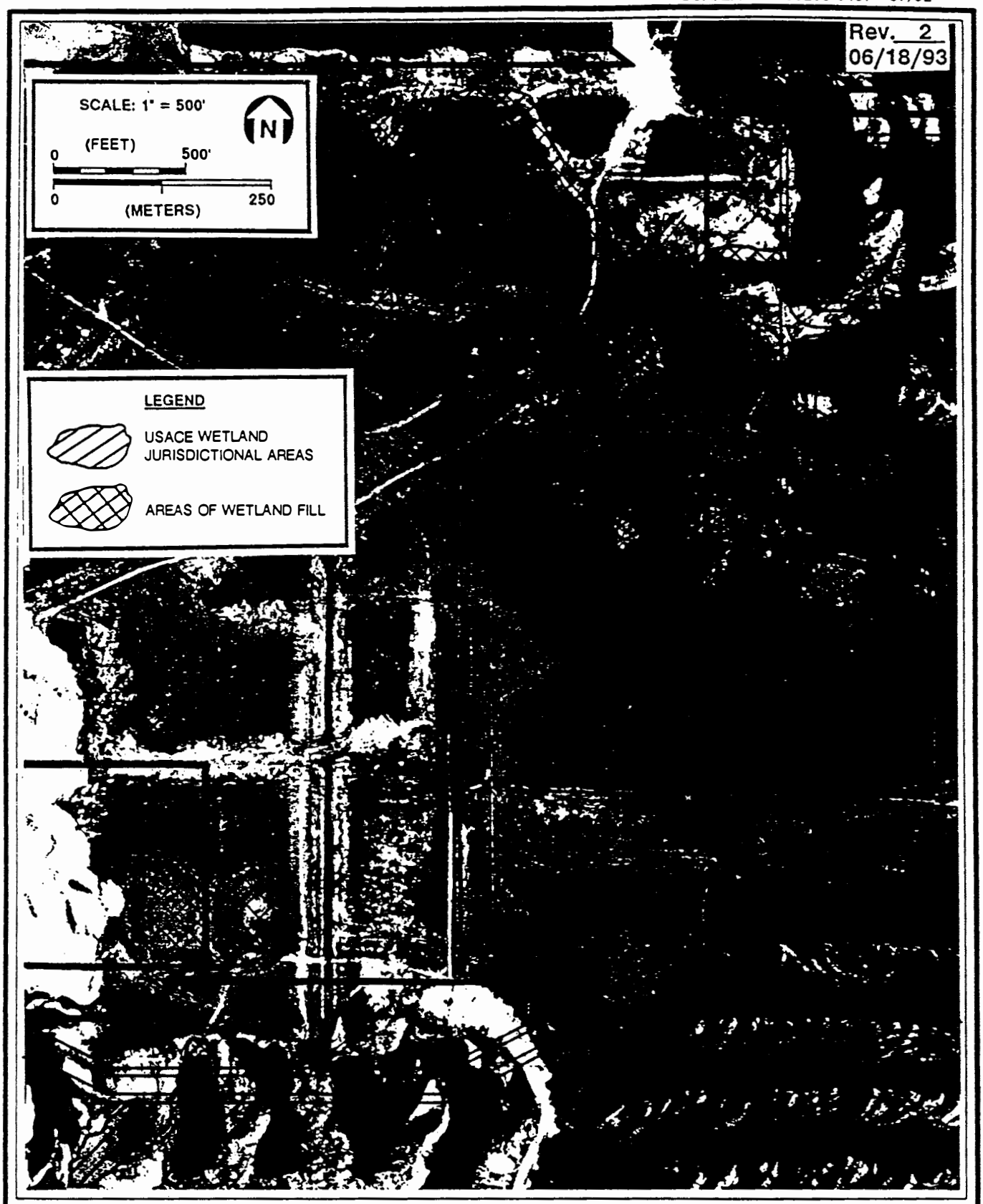

FIGURE 3.
AERIAL PHOTOGRAPHY WITH USACE WETLAND DELINEATIONS (PAGE 7 OF 13)
DREDGE AND FILL PERMIT APPLICATION
Sources: I.F. Rooks & Assoc. Inc.; ECT, 1992.

TAMPA ELECTRIC
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POLK POWER STATION

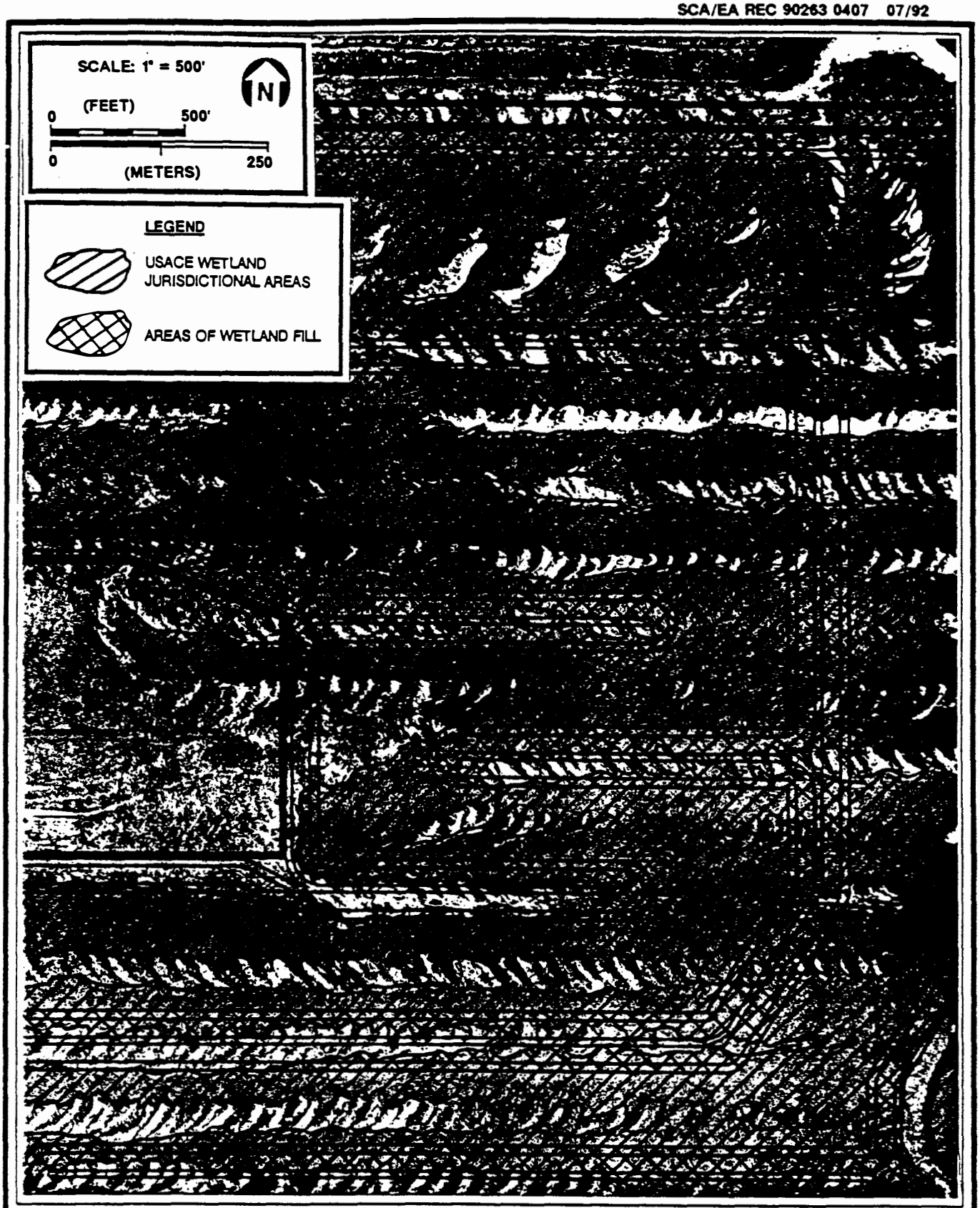

FIGURE 3.
AERIAL PHOTOGRAPHY WITH USACE WETLAND DELINEATIONS (PAGE 8 OF 13)
DREDGE AND FILL PERMIT APPLICATION
Sources: I.F. Rooks & Assoc. Inc.; ECT, 1992.

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POLK POWER STATION

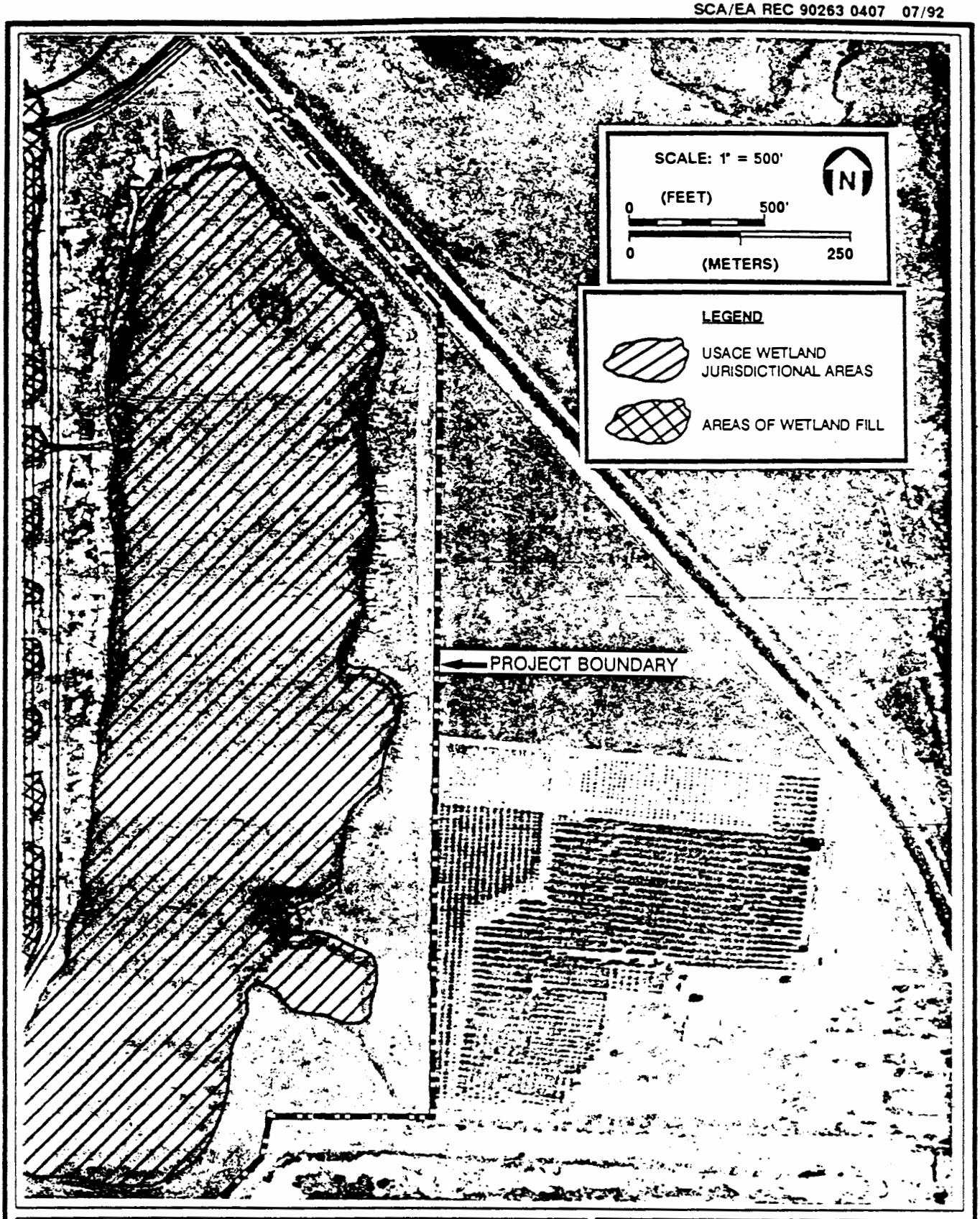

FIGURE 3.
AERIAL PHOTOGRAPHY WITH USACE WETLAND DELINEATIONS (PAGE 9 OF 13)
DREDGE AND FILL PERMIT APPLICATION
Sources: I.F. Rooks & Assoc. Inc.; ECT, 1992.

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POLK POWER STATION

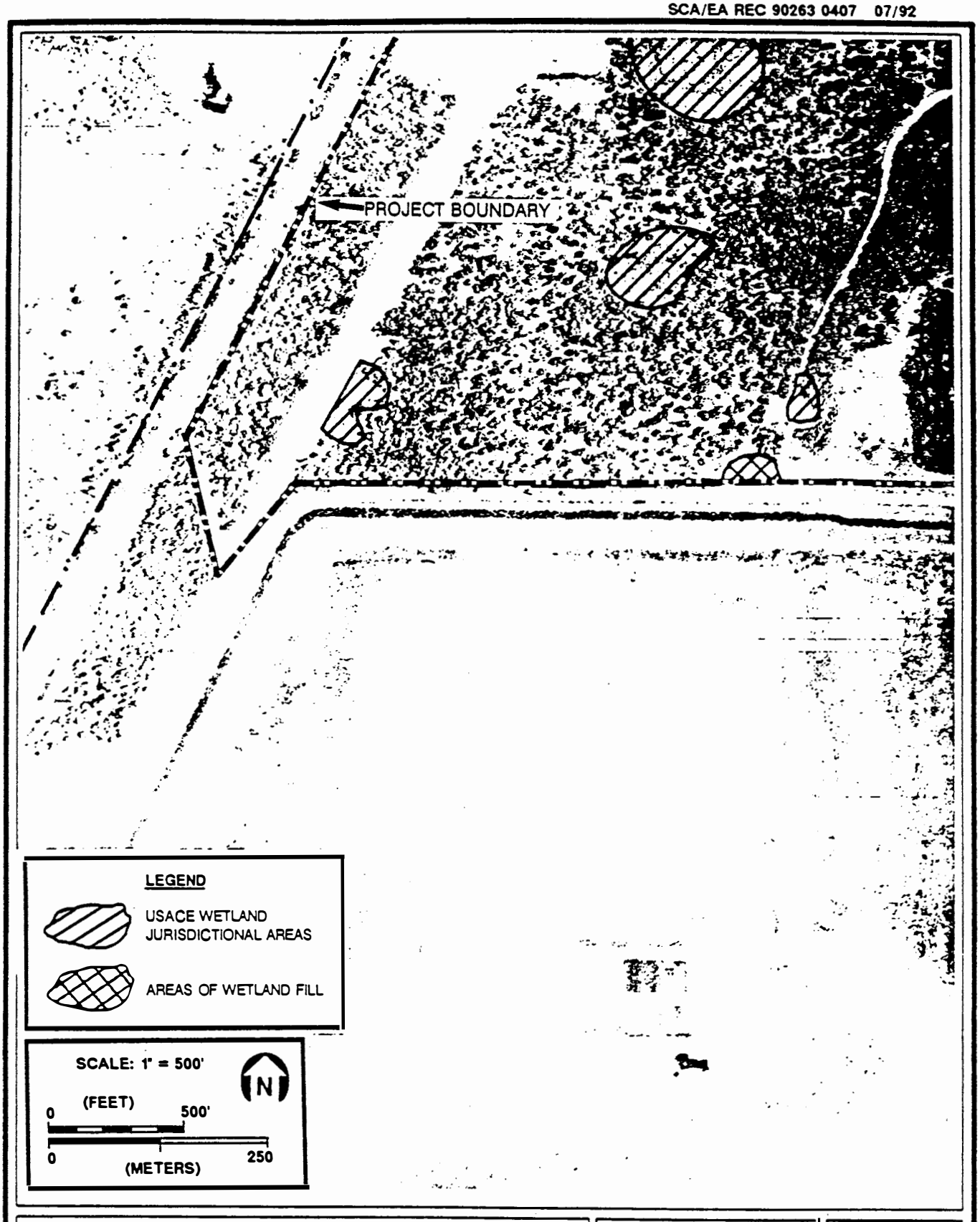

FIGURE 3.
AERIAL PHOTOGRAPHY WITH USACE WETLAND DELINEATIONS (PAGE 10 OF 13)
DREDGE AND FILL PERMIT APPLICATION
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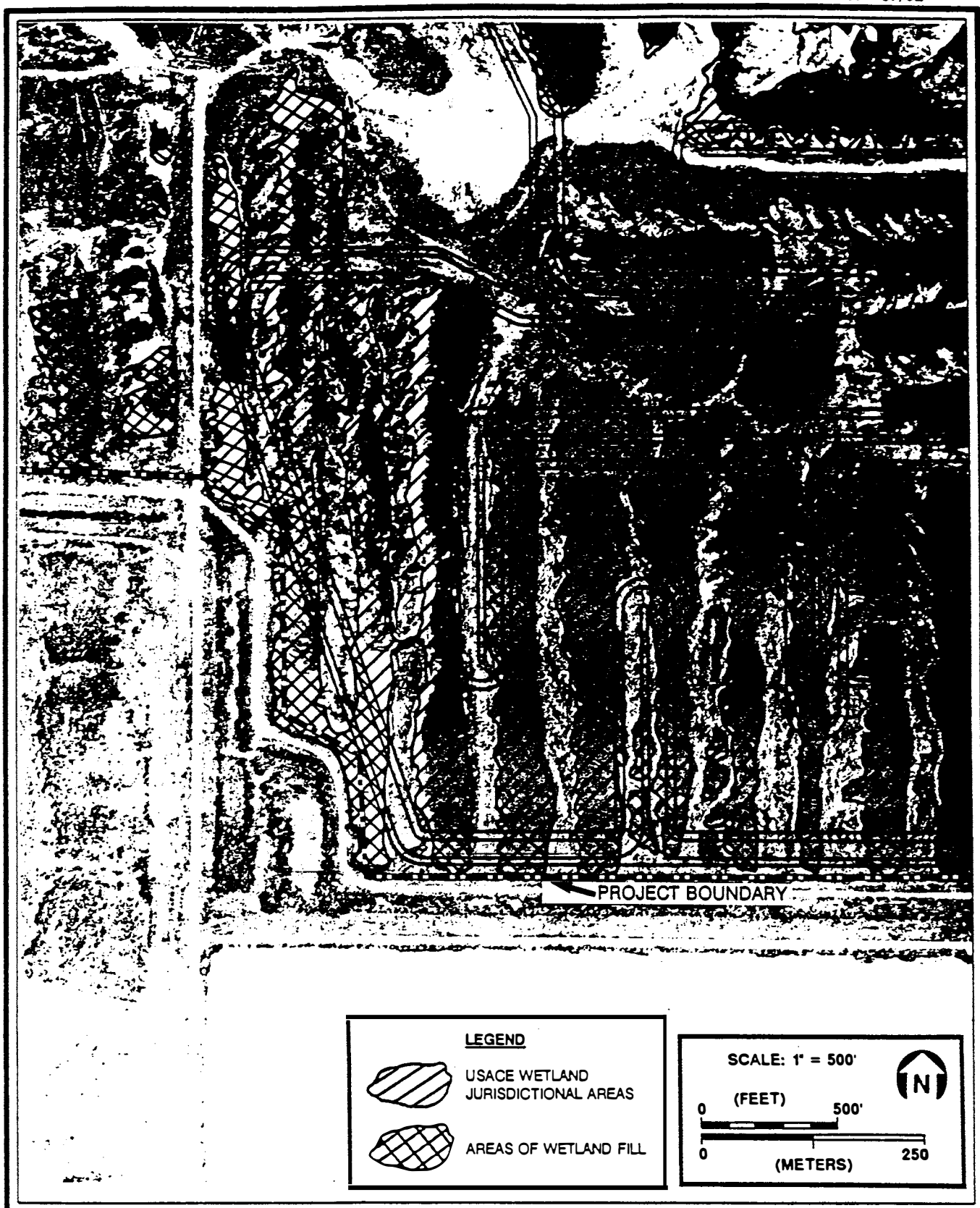

FIGURE 3.
AERIAL PHOTOGRAPHY WITH USACE WETLAND DELINEATIONS (PAGE 11 OF 13)
DREDGE AND FILL PERMIT APPLICATION
Sources: I.F. Rooks & Assoc. Inc.; ECT, 1992.

TAMPA ELECTRIC
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POLK POWER STATION

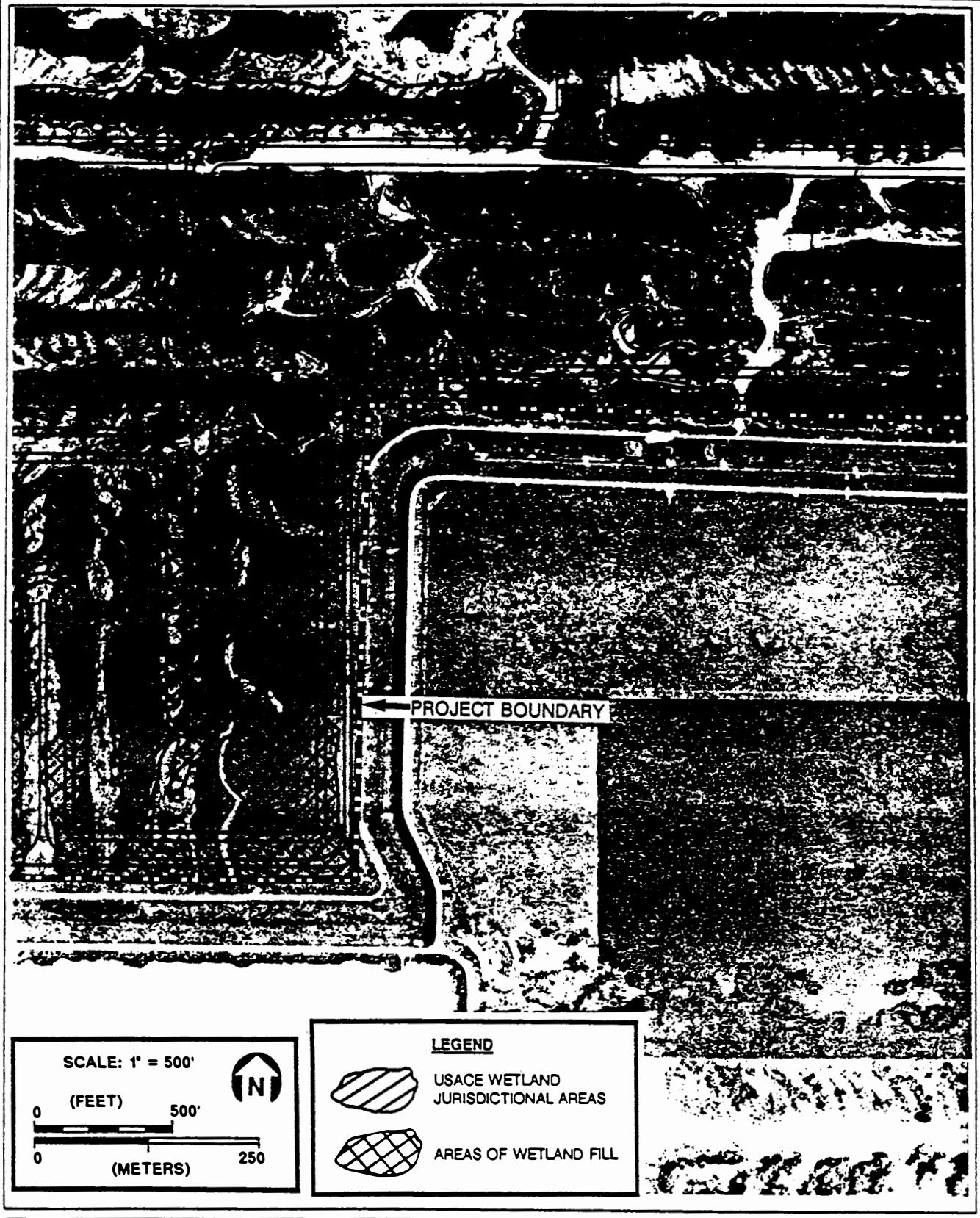

FIGURE 3.
AERIAL PHOTOGRAPHY WITH USACE WETLAND DELINEATIONS (PAGE 12 OF 13)
DREDGE AND FILL PERMIT APPLICATION
Sources: I.F. Rooks & Assoc. Inc.; ECT, 1992.

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POLK POWER STATION

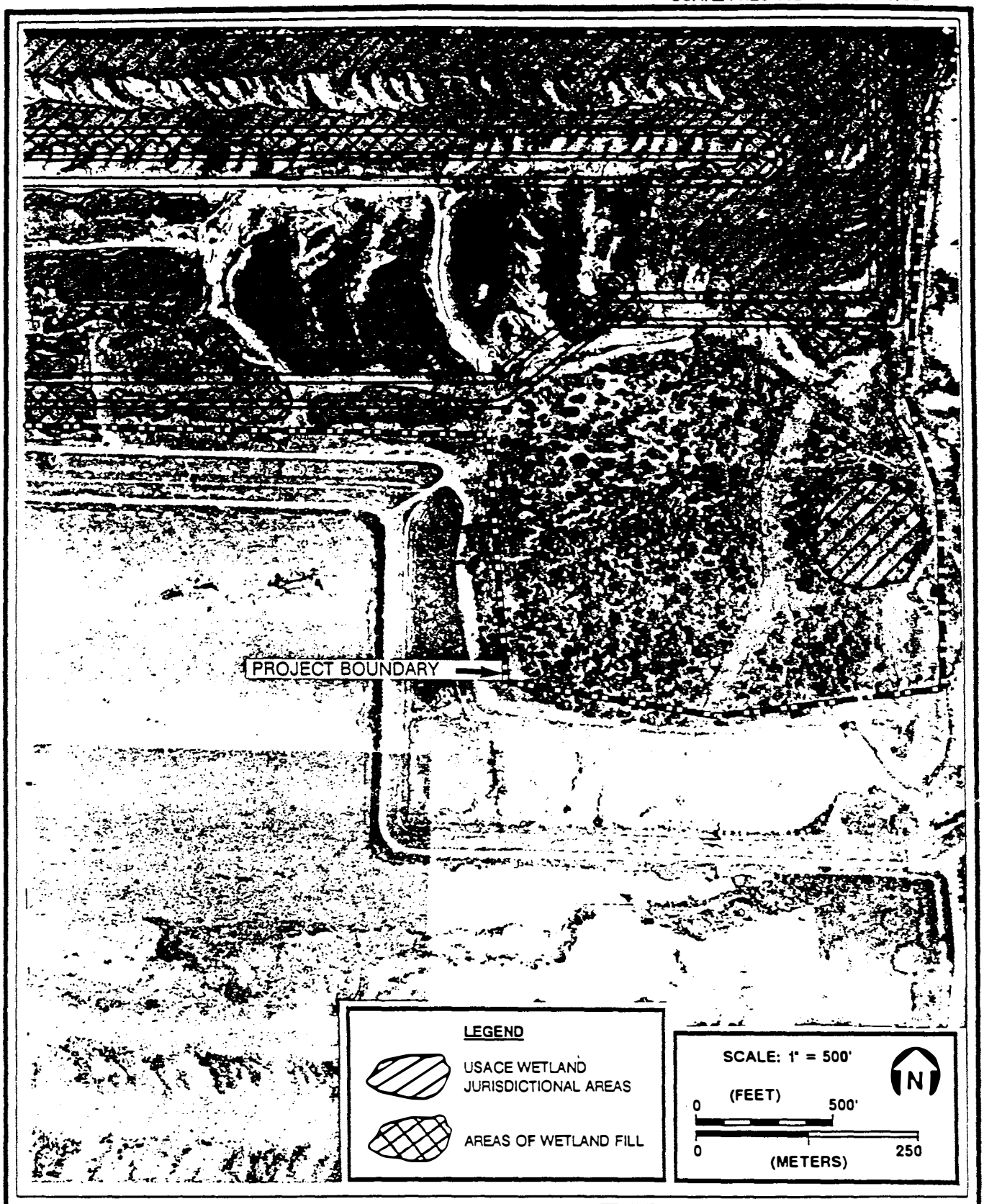

FIGURE 3.
AERIAL PHOTOGRAPHY WITH USACE WETLAND DELINEATIONS (PAGE 13 OF 13)
DREDGE AND FILL PERMIT APPLICATION
Sources: I.F. Rooks & Assoc. Inc.; ECT, 1992.

TAMPA ELECTRIC
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POLK POWER STATION

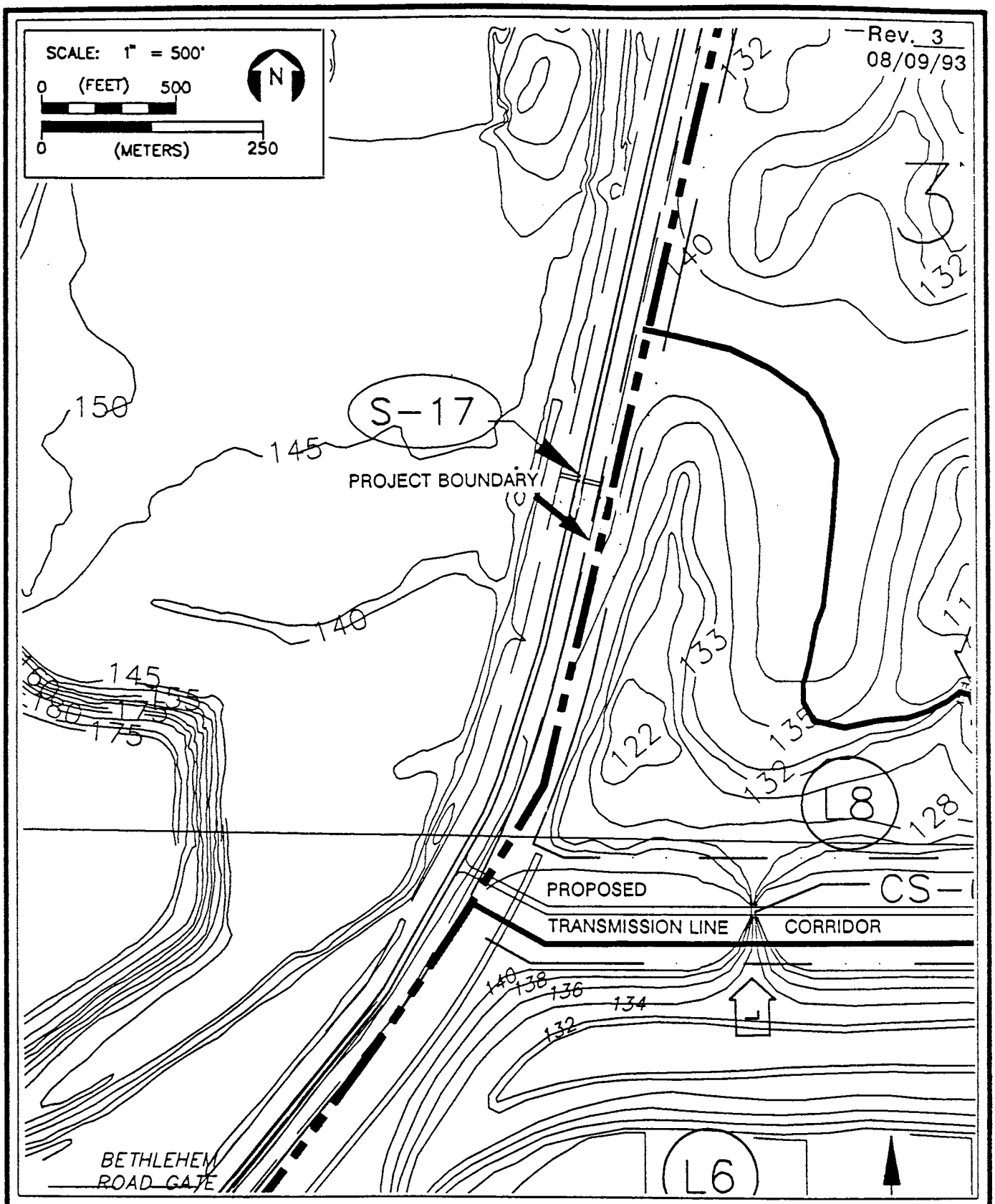

FIGURE 4. (PAGE 1 OF 13)

POSTRECLAMATION TOPOGRAPHY
DREDGE-AND-FILL PERMIT APPLICATION
Source: ECT, 1992.

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

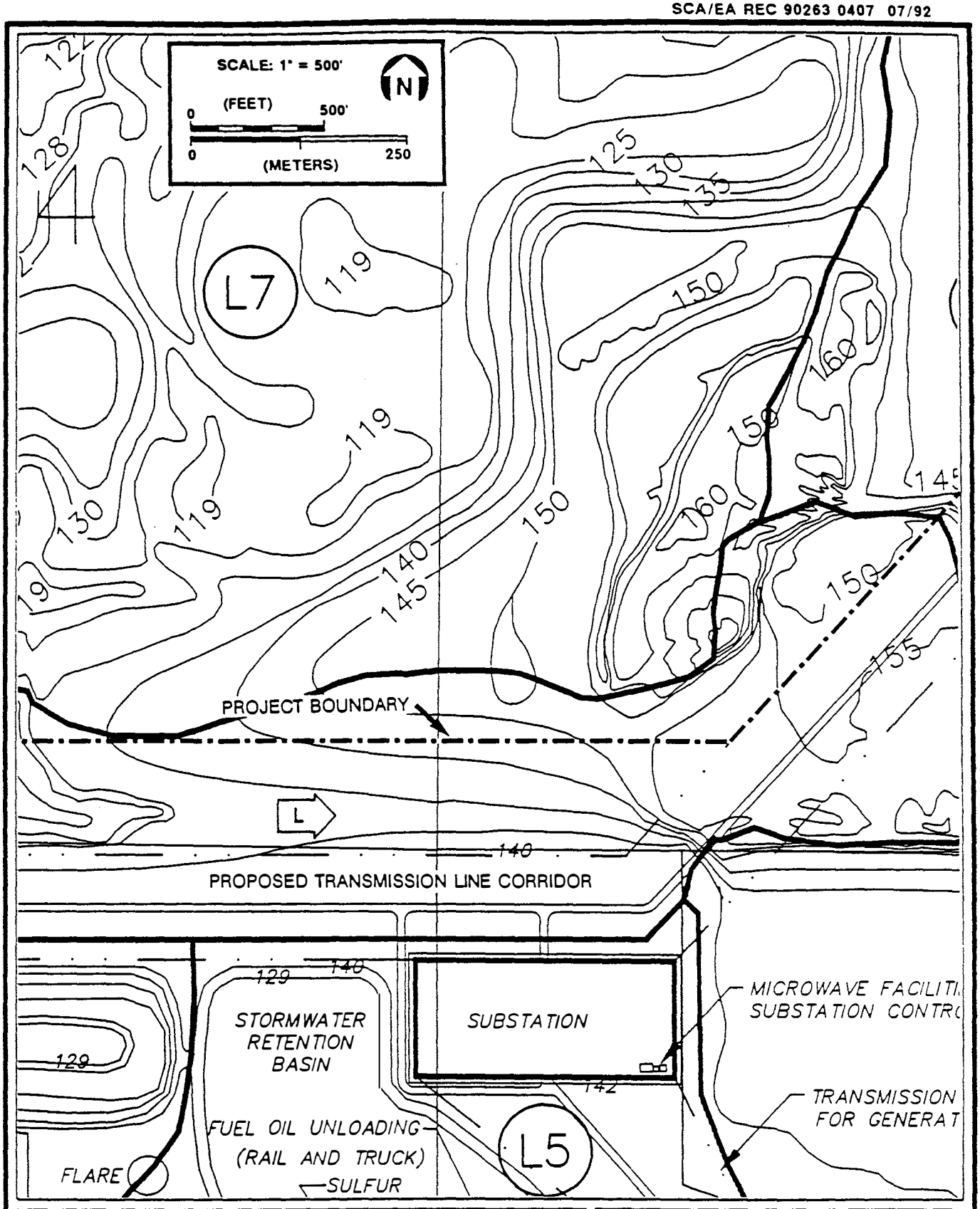

FIGURE 4.
POST-RECLAMATION TOPOGRAPHY (PAGE 2 OF 13)
DREDGE AND FILL PERMIT APPLICATION

Source: ECT, 1992.

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

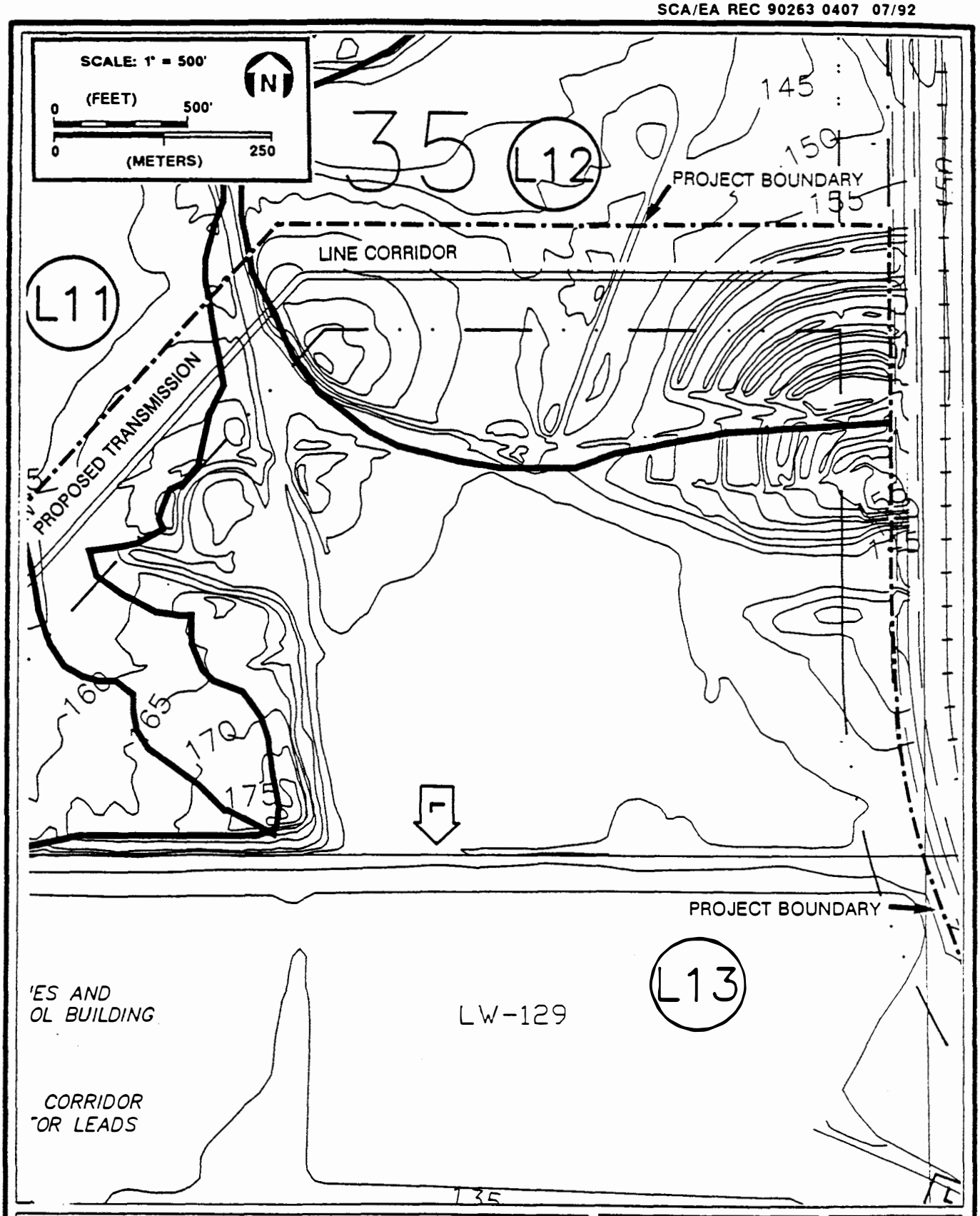

FIGURE 4.
POST-RECLAMATION TOPOGRAPHY (PAGE 3 OF 13)
DREDGE AND FILL PERMIT APPLICATION

Source: ECT, 1992.

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

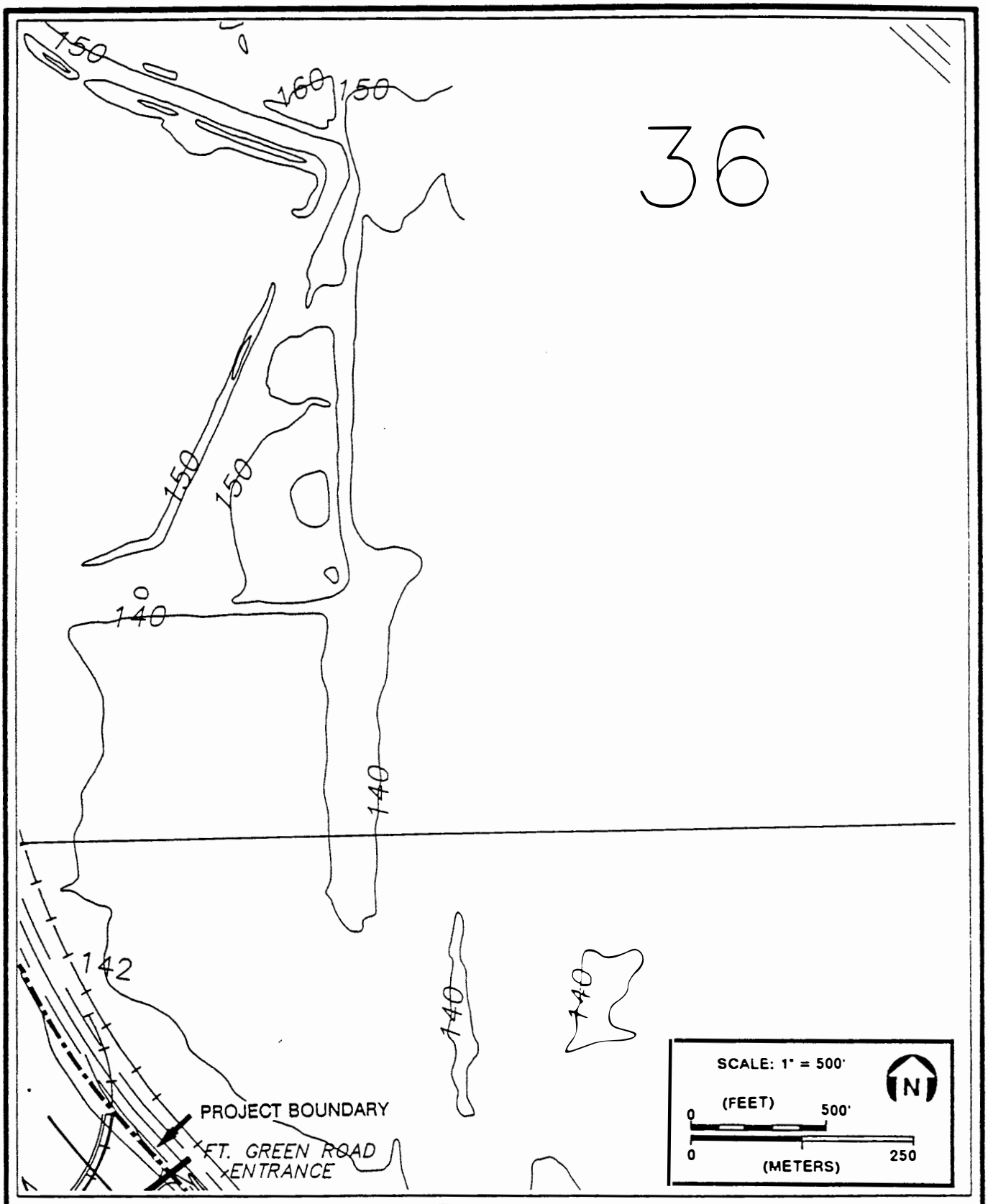

FIGURE 4.
POST-RECLAMATION TOPOGRAPHY (PAGE 4 OF 13)
DREDGE AND FILL PERMIT APPLICATION

Source: ECT, 1992.

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

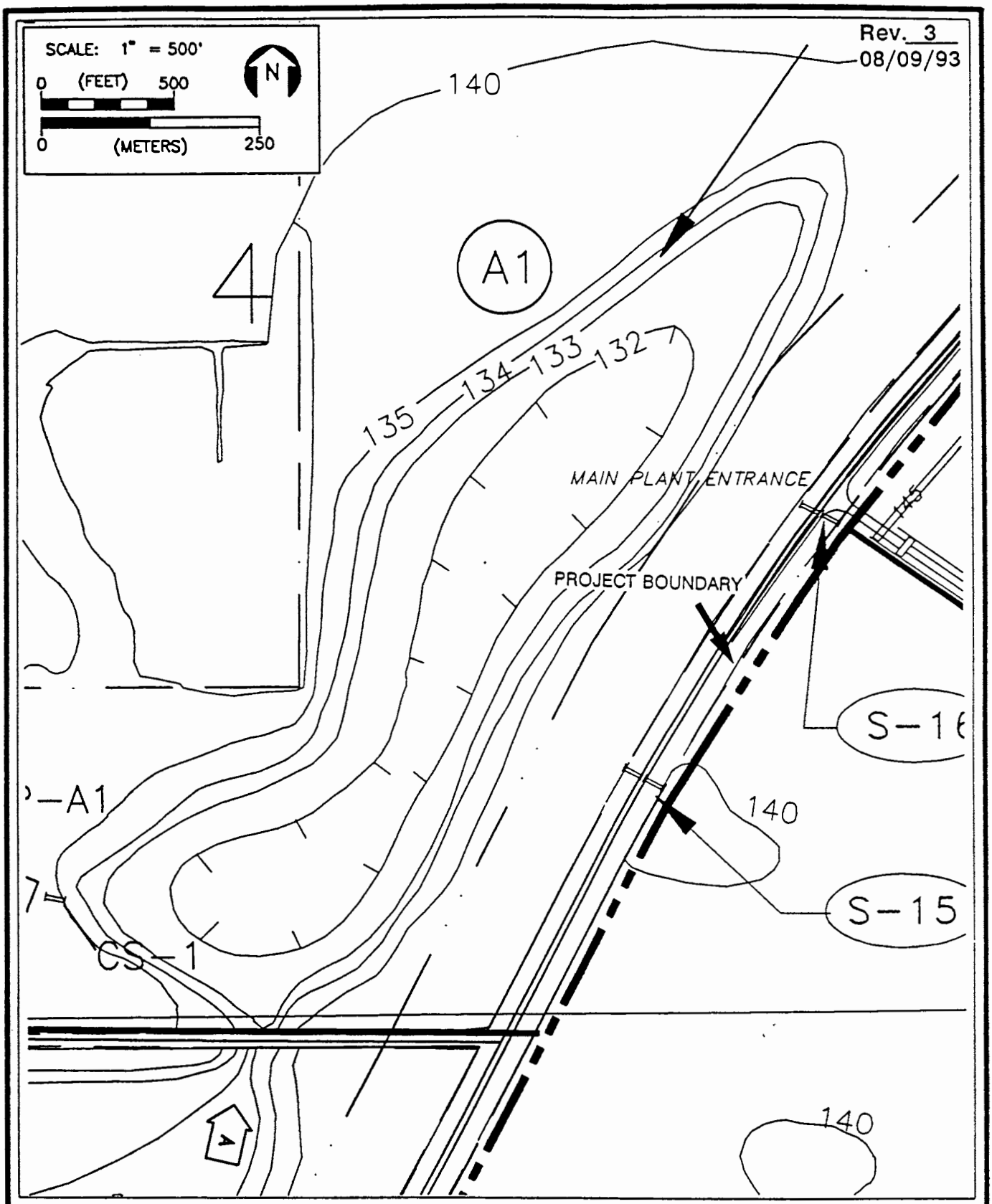

FIGURE 4. (PAGE 5 OF 13)

POSTRECLAMATION TOPOGRAPHY
DREDGE-AND-FILL PERMIT APPLICATION
Source: ECT, 1992.

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

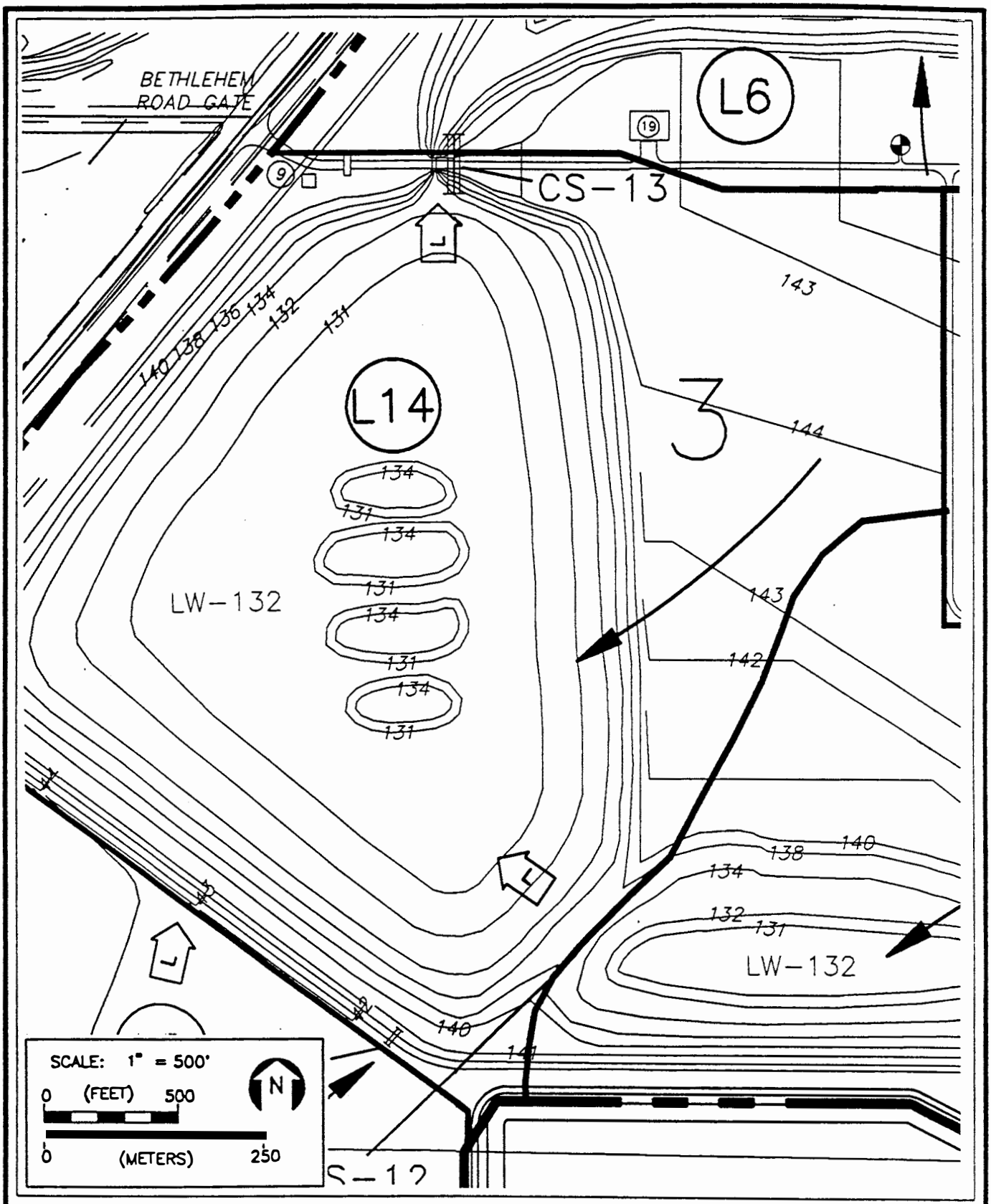

FIGURE 4. (PAGE 6 OF 13)

POSTRECLAMATION TOPOGRAPHY
DREDGE-AND-FILL PERMIT APPLICATION
Source: ECT, 1992.

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

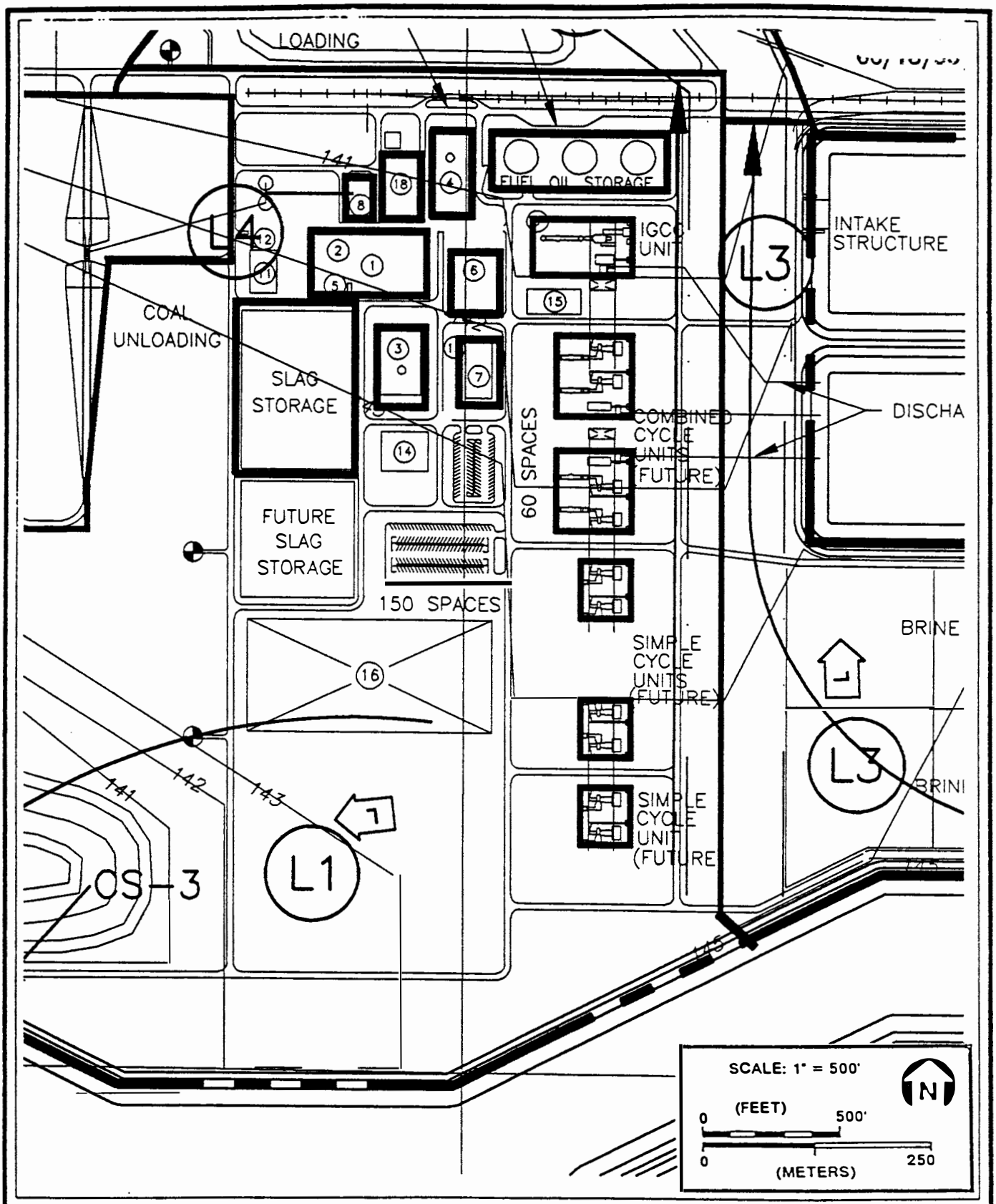

FIGURE 4.
POST-RECLAMATION TOPOGRAPHY (PAGE 7 OF 13)
DREDGE AND FILL PERMIT APPLICATION

Source: ECT, 1992.

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

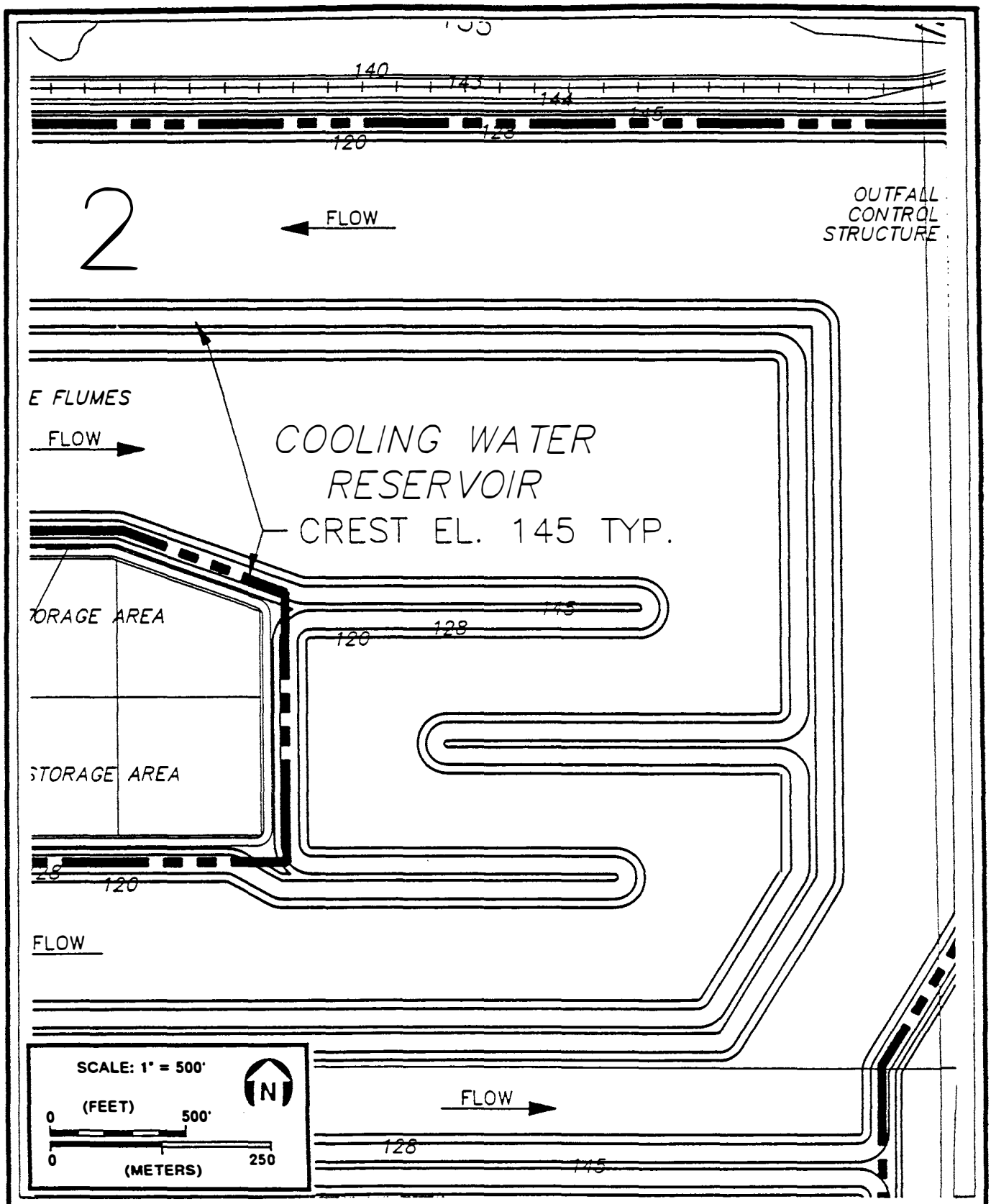

FIGURE 4.
POST-RECLAMATION TOPOGRAPHY (PAGE 8 OF 13)
DREDGE AND FILL PERMIT APPLICATION

Source: ECT, 1992.

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

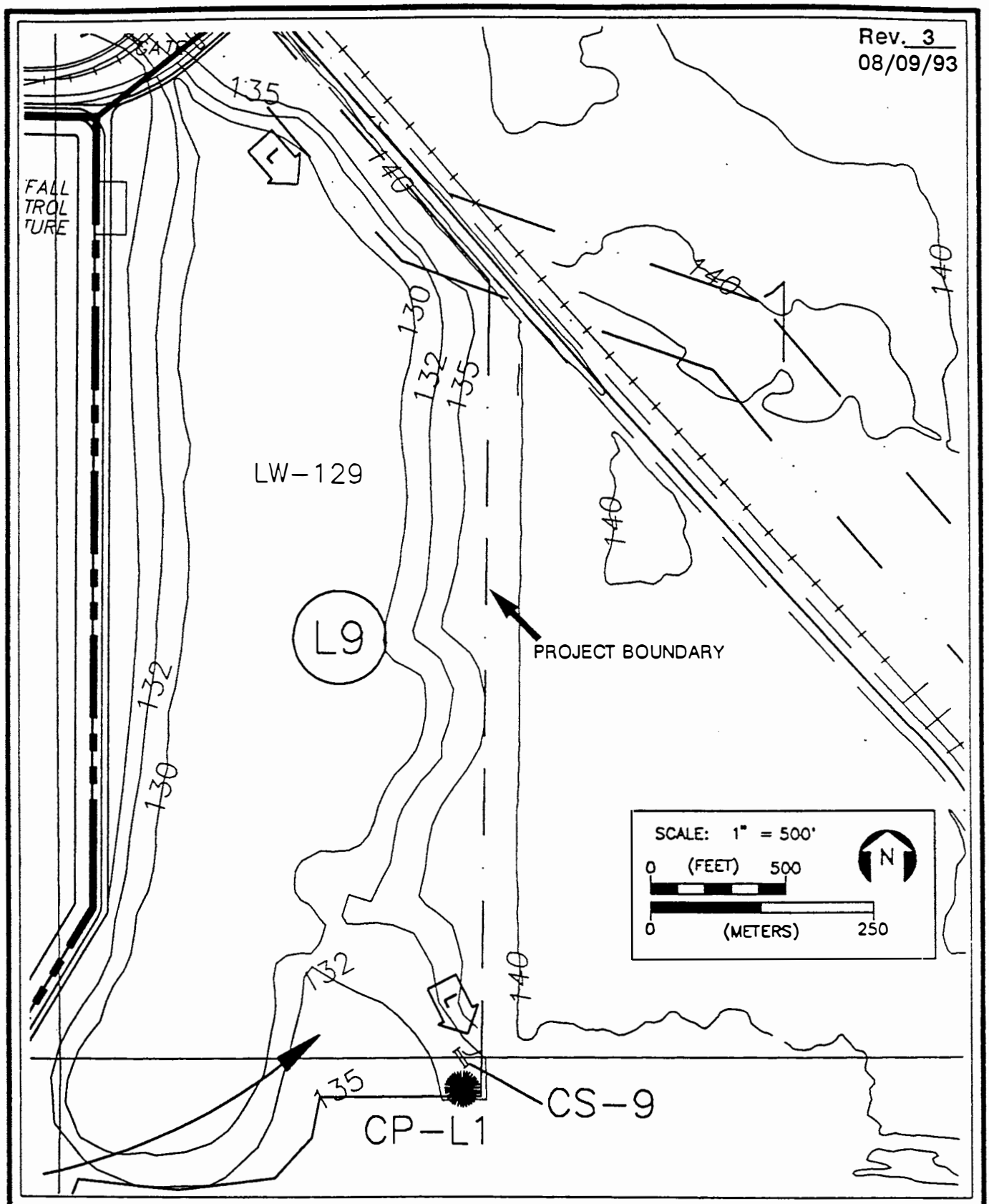

FIGURE 4. (PAGE 9 OF 13)

POSTRECLAMATION TOPOGRAPHY
DREDGE-AND-FILL PERMIT APPLICATION
Source: ECT, 1992.

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

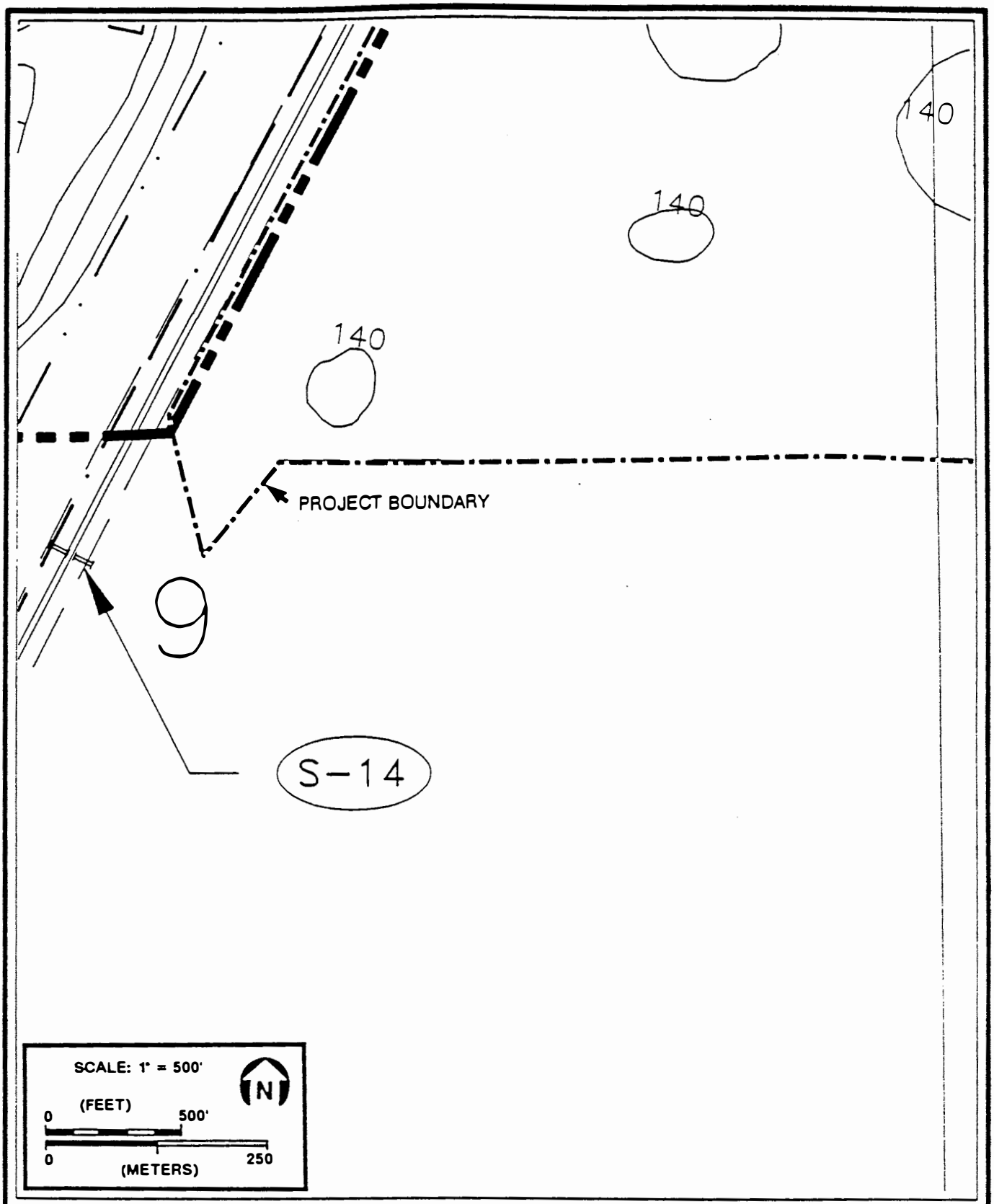

FIGURE 4.
POST-RECLAMATION TOPOGRAPHY (PAGE 10 OF 13)
DREDGE AND FILL PERMIT APPLICATION

Source: ECT, 1992.

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

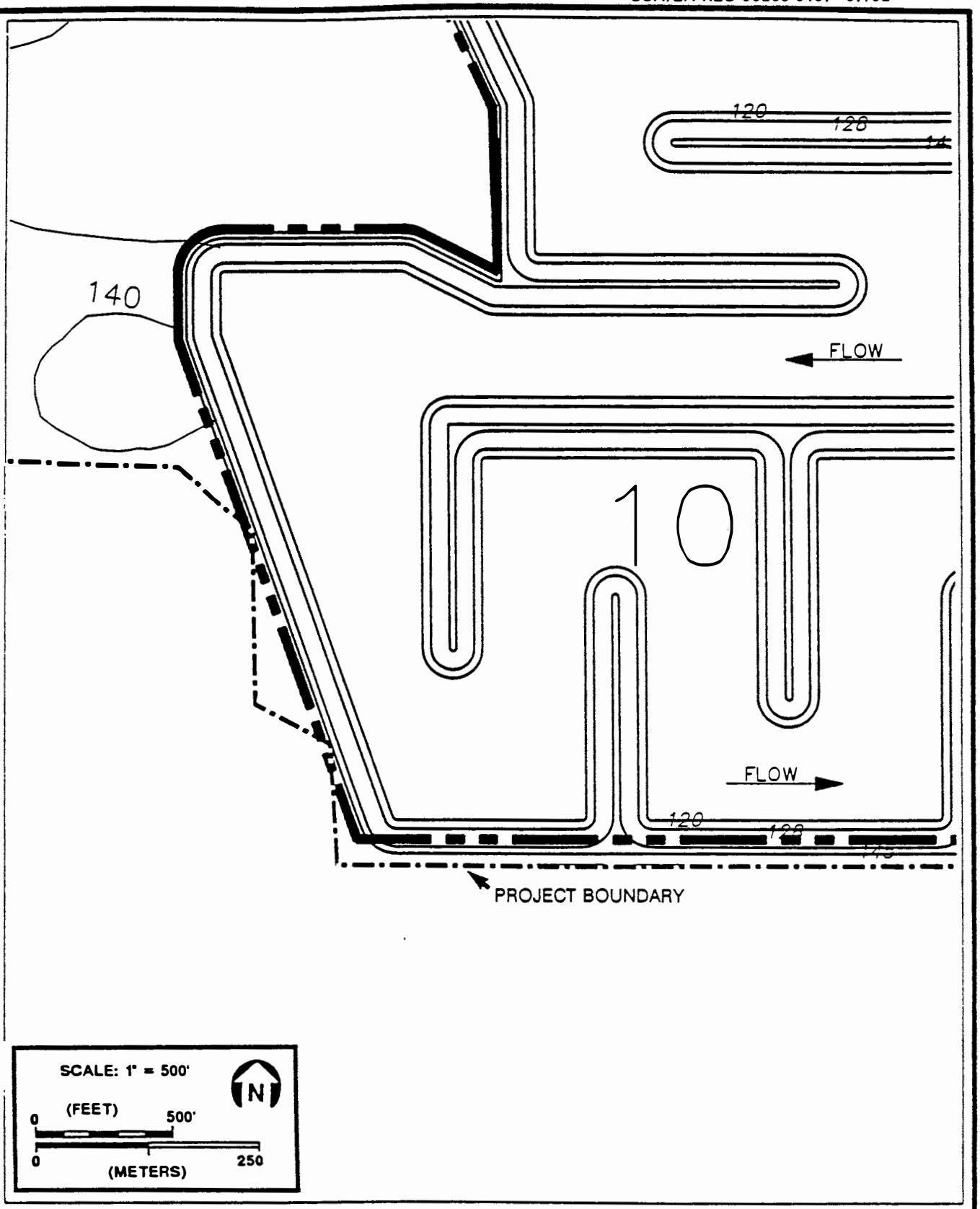

FIGURE 4.
POST-RECLAMATION TOPOGRAPHY (PAGE 11 OF 13)
DREDGE AND FILL PERMIT APPLICATION

Source: ECT, 1992.

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

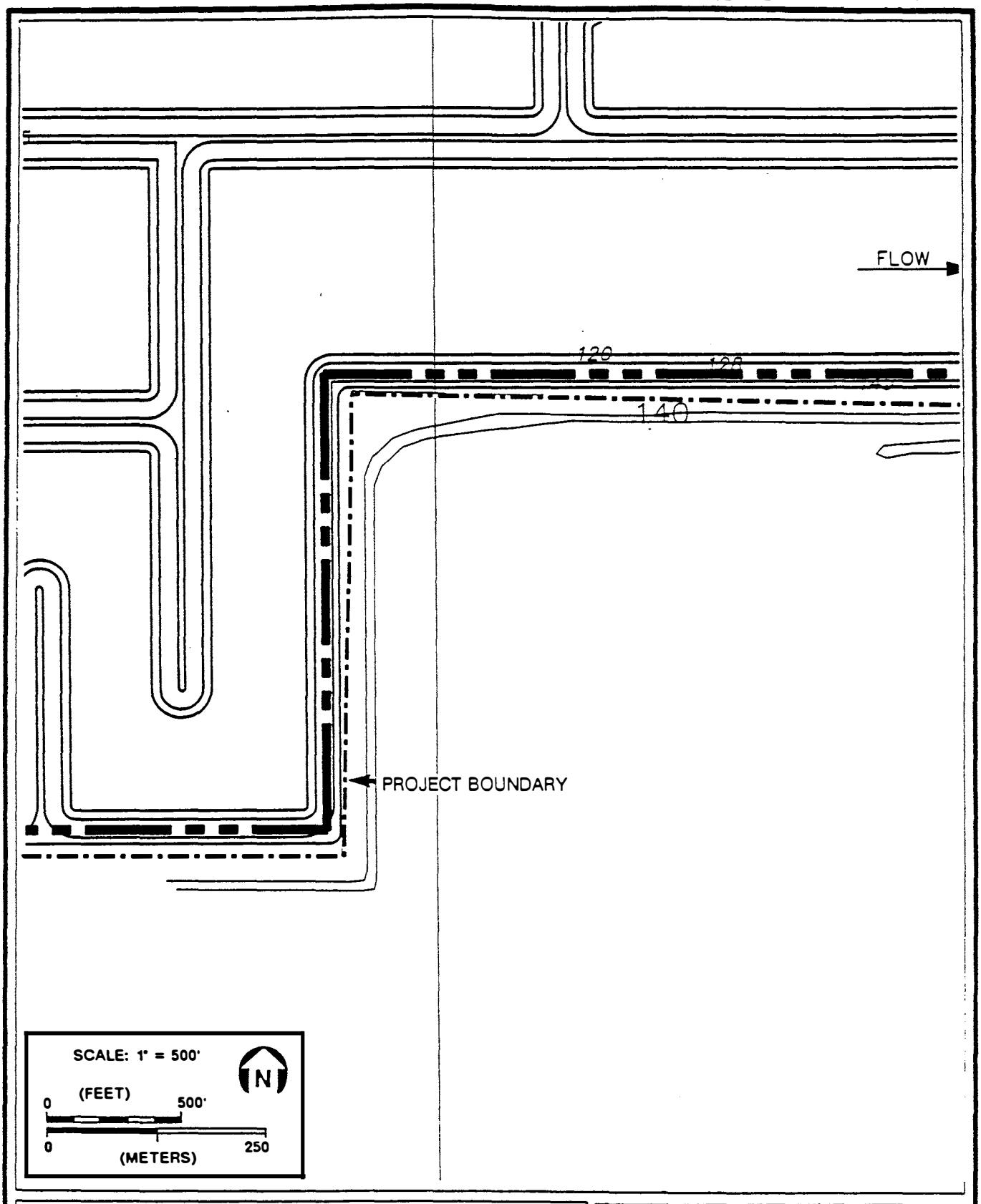

FIGURE 4.
POST-RECLAMATION TOPOGRAPHY (PAGE 12 OF 13)
DREDGE AND FILL PERMIT APPLICATION

Source: ECT, 1992.

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

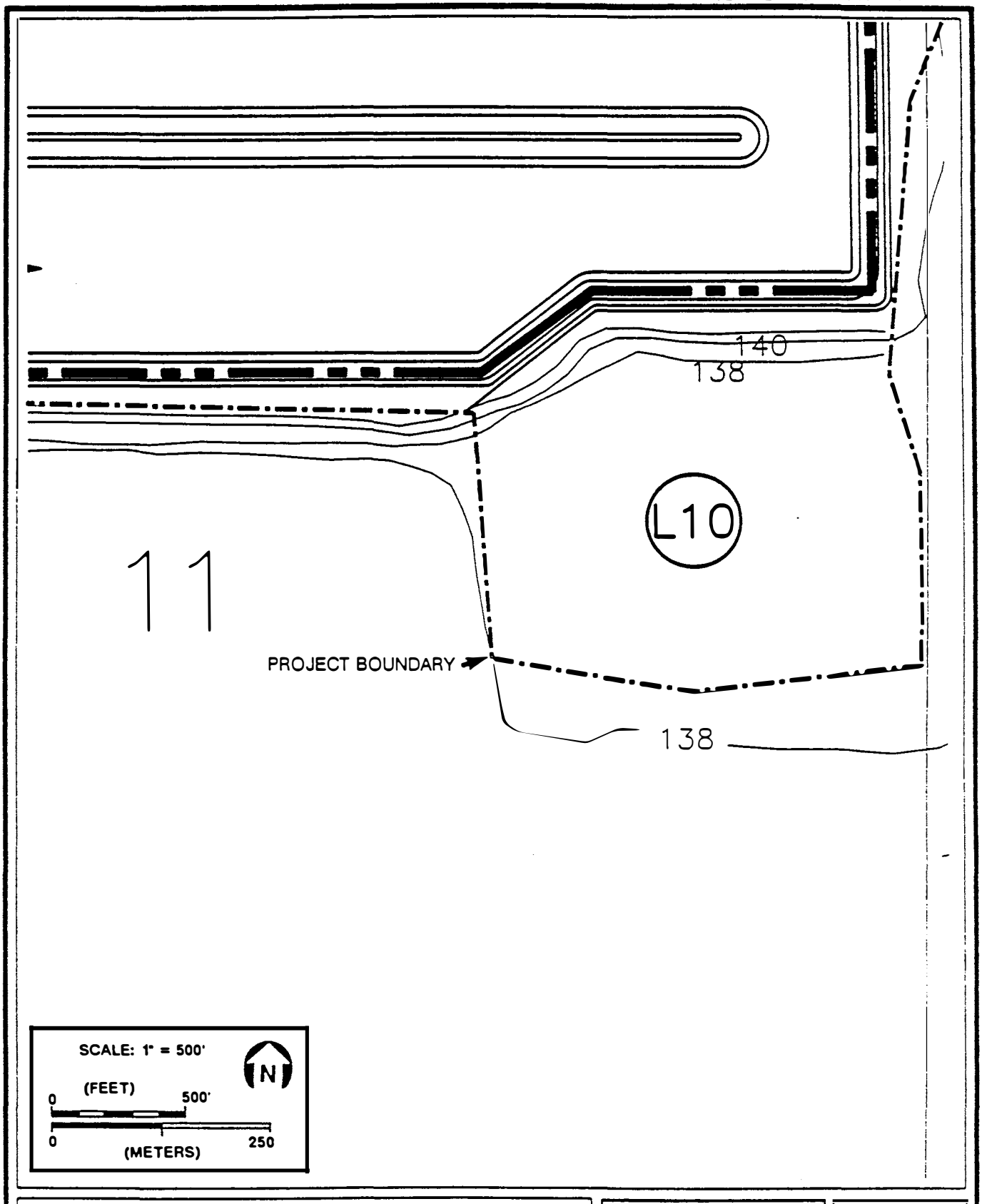

FIGURE 4.
POST-RECLAMATION TOPOGRAPHY (PAGE 13 OF 13)
DREDGE AND FILL PERMIT APPLICATION

Source: ECT, 1992.

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

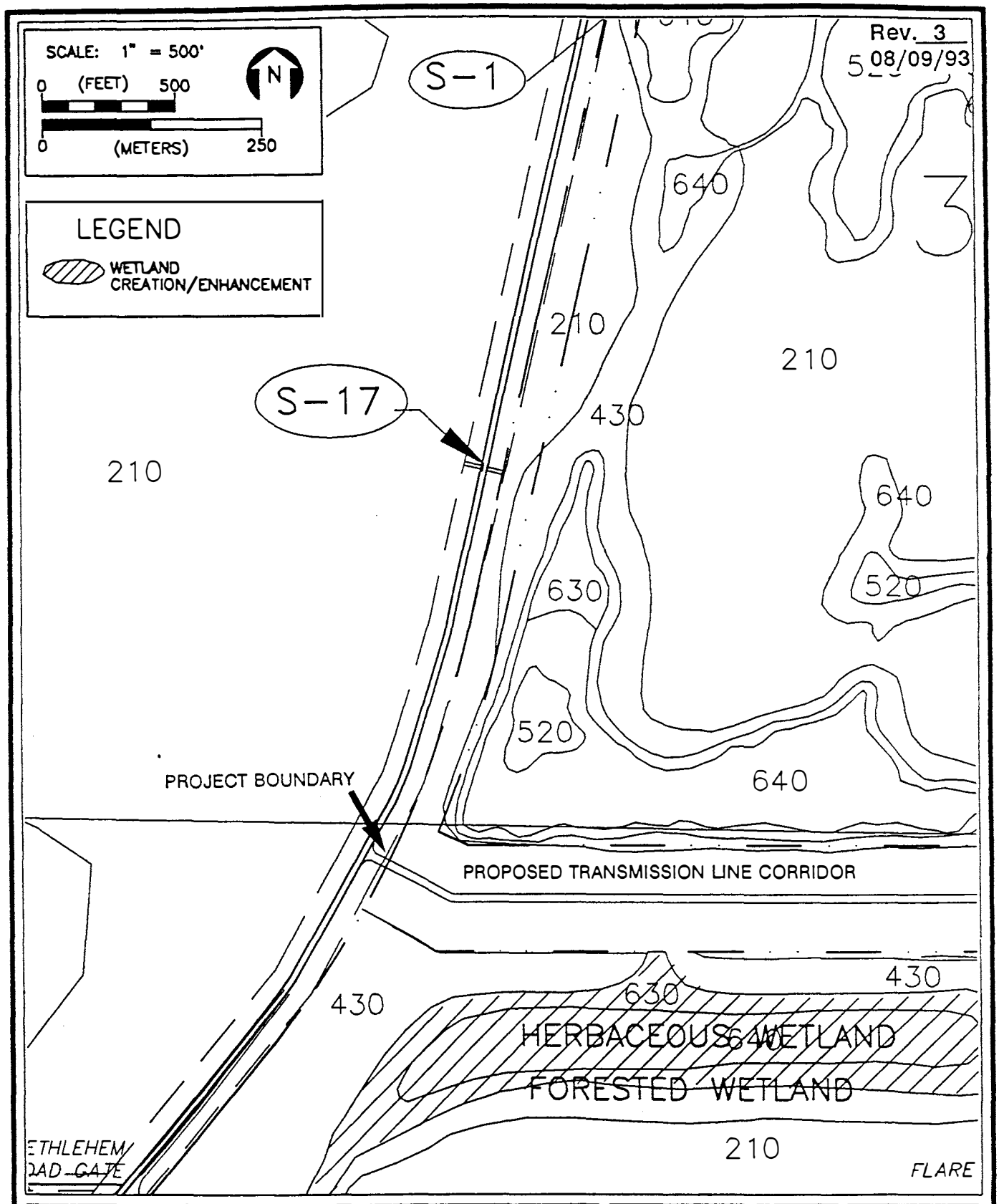

FIGURE 5. (PAGE 1 OF 13)
POSTRECLAMATION LAND USE WITH WETLAND CREATION/ENHANCEMENT AREAS DEPICTED
DREDGE-AND-FILL PERMIT APPLICATION
Source: ECT, 1992.

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

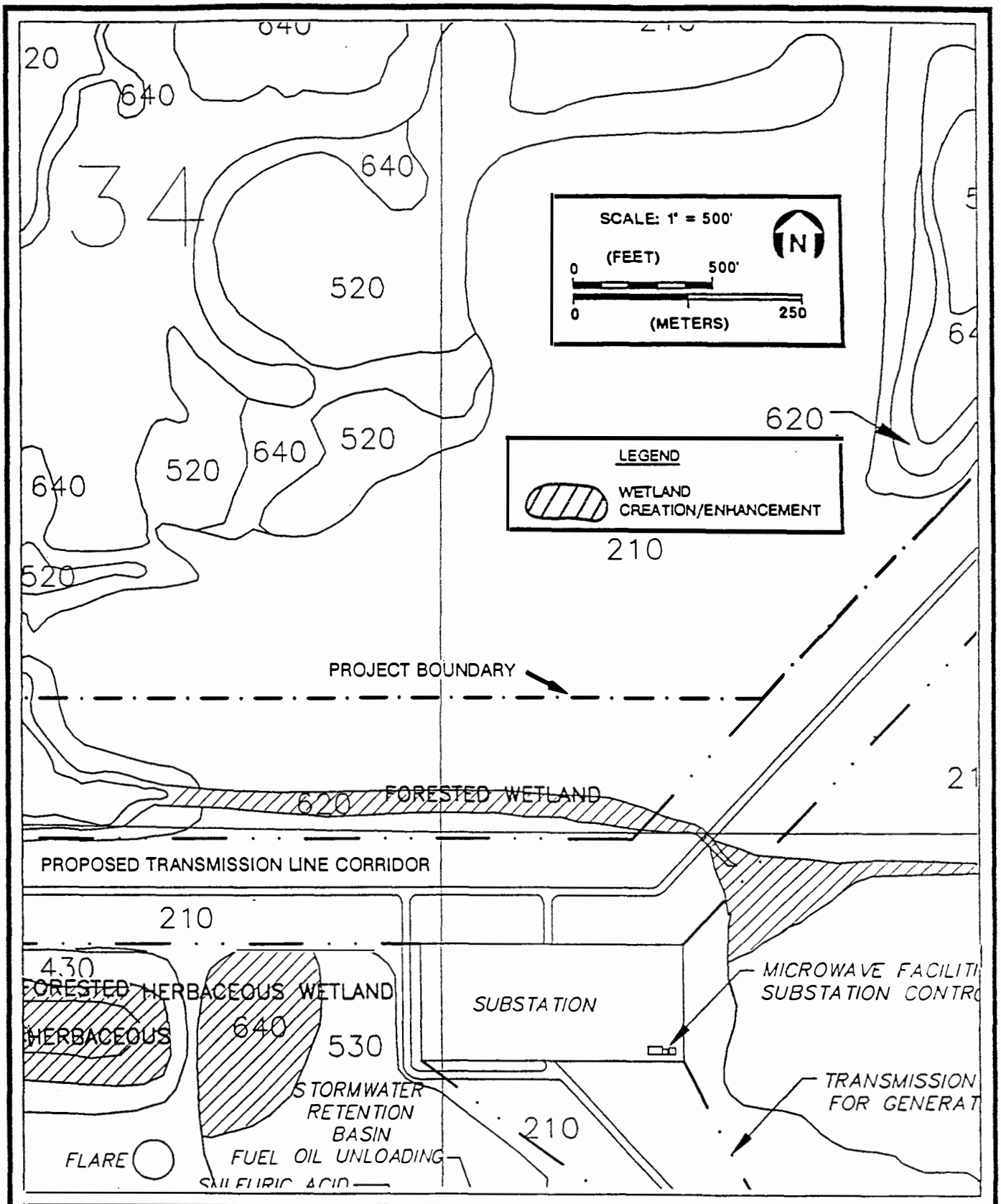

FIGURE 5. (PAGE 2 OF 13)
POST-RECLAMATION LAND USE WITH WETLAND CREATION/ENHANCEMENT AREAS DEPICTED
DREDGE AND FILL PERMIT APPLICATION
Source: ECT, 1992.

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

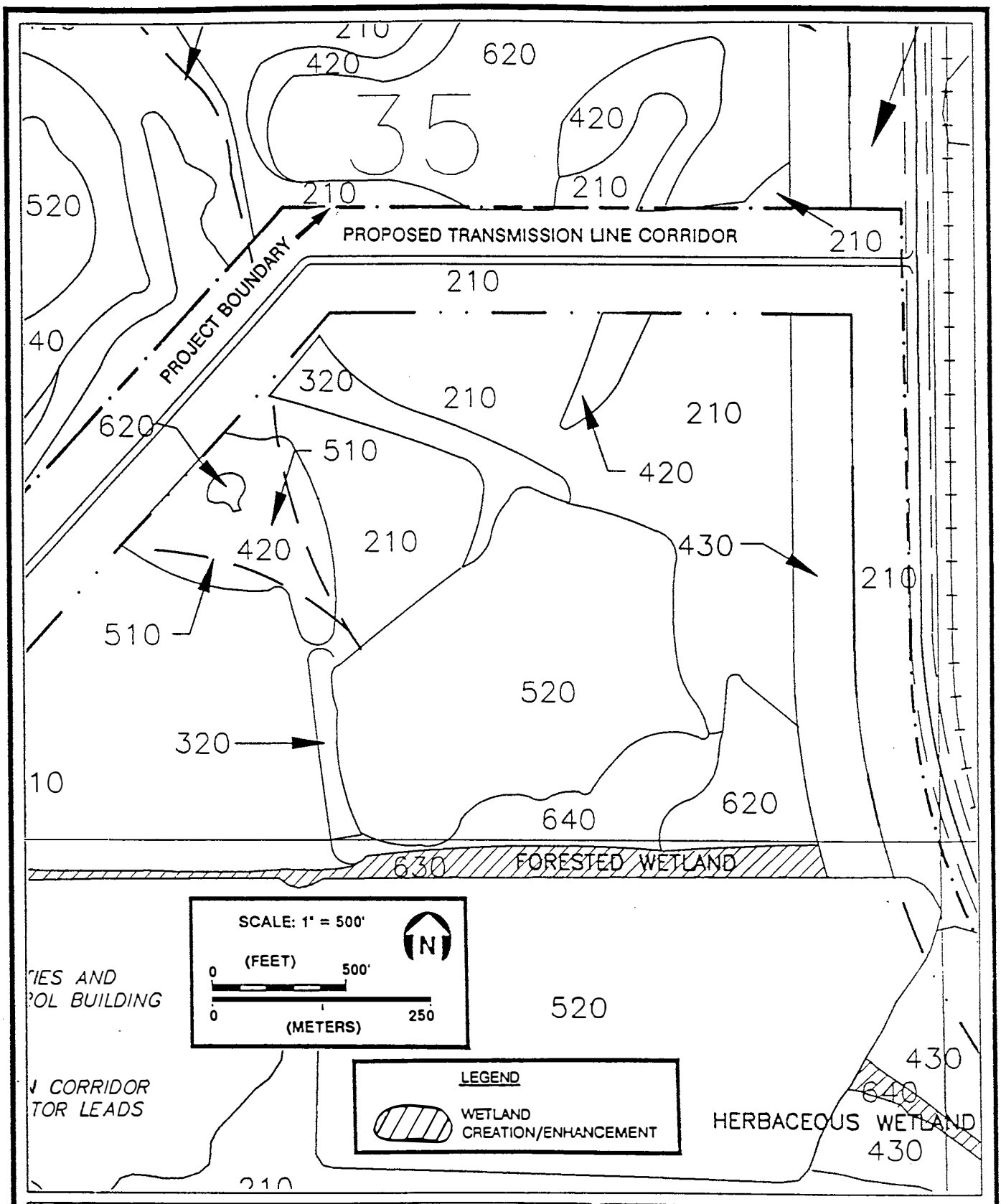

FIGURE 5. (PAGE 3 OF 13)
POST-RECLAMATION LAND USE WITH WETLAND CREATION/ENHANCEMENT AREAS DEPICTED
DREDGE AND FILL PERMIT APPLICATION
Source: ECT, 1992.

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

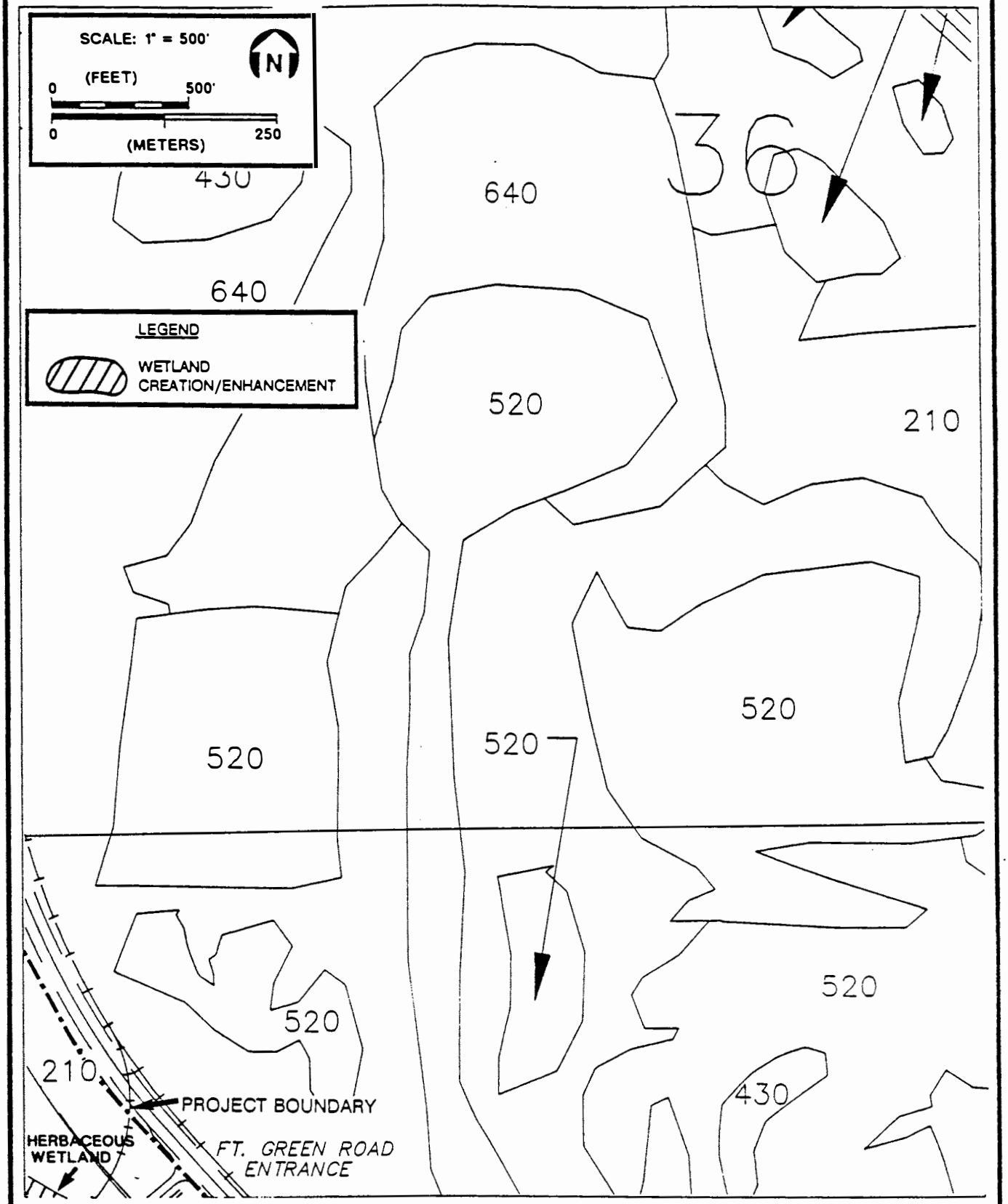

FIGURE 5. (PAGE 4 OF 13)
POST-RECLAMATION LAND USE WITH WETLAND CREATION/ENHANCEMENT AREAS DEPICTED
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TAMPA ELECTRIC
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POLK POWER STATION

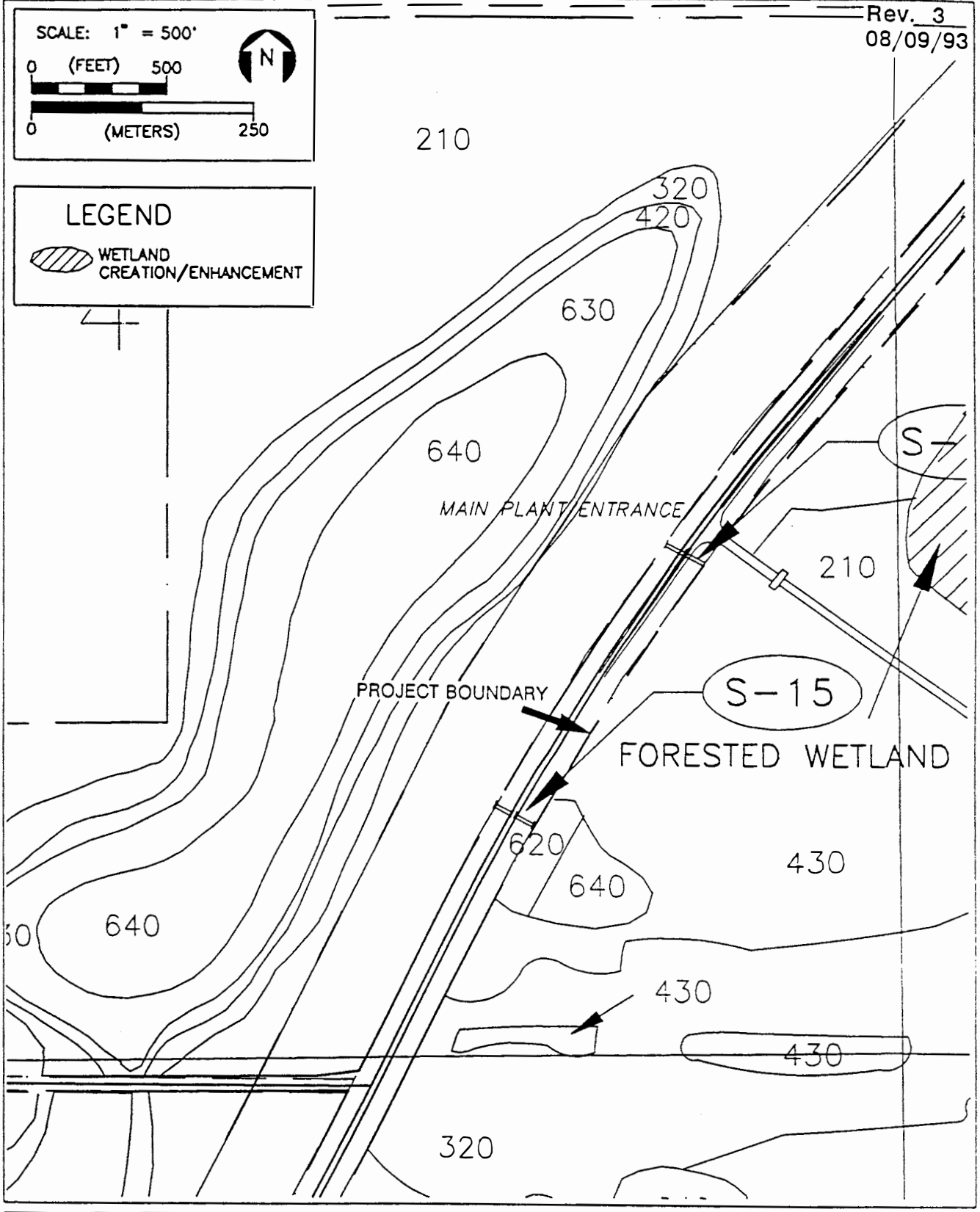

FIGURE 5. (PAGE 5 OF 13)
POSTRECLAMATION LAND USE WITH WETLAND CREATION/ENHANCEMENT AREAS DEPICTED
DREDGE-AND-FILL PERMIT APPLICATION
Source: ECT, 1992.

TAMPA ELECTRIC
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POLK POWER STATION

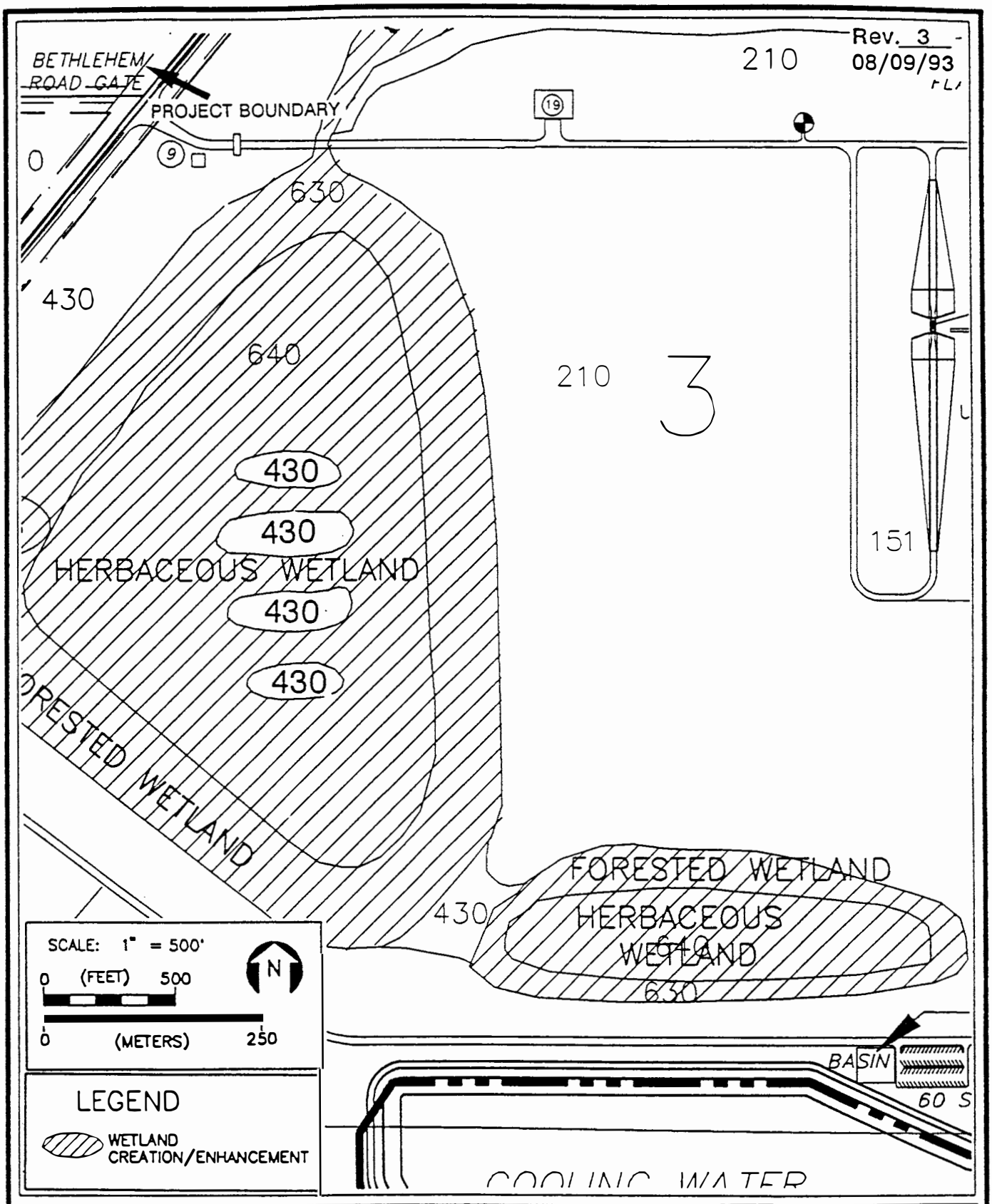

FIGURE 5. (PAGE 6 OF 13)
POSTRECLAMATION LAND USE WITH WETLAND CREATION/ENHANCEMENT AREAS DEPICTED
DREDGE-AND-FILL PERMIT APPLICATION
Source: ECT, 1992.

TAMPA ELECTRIC
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POLK POWER STATION

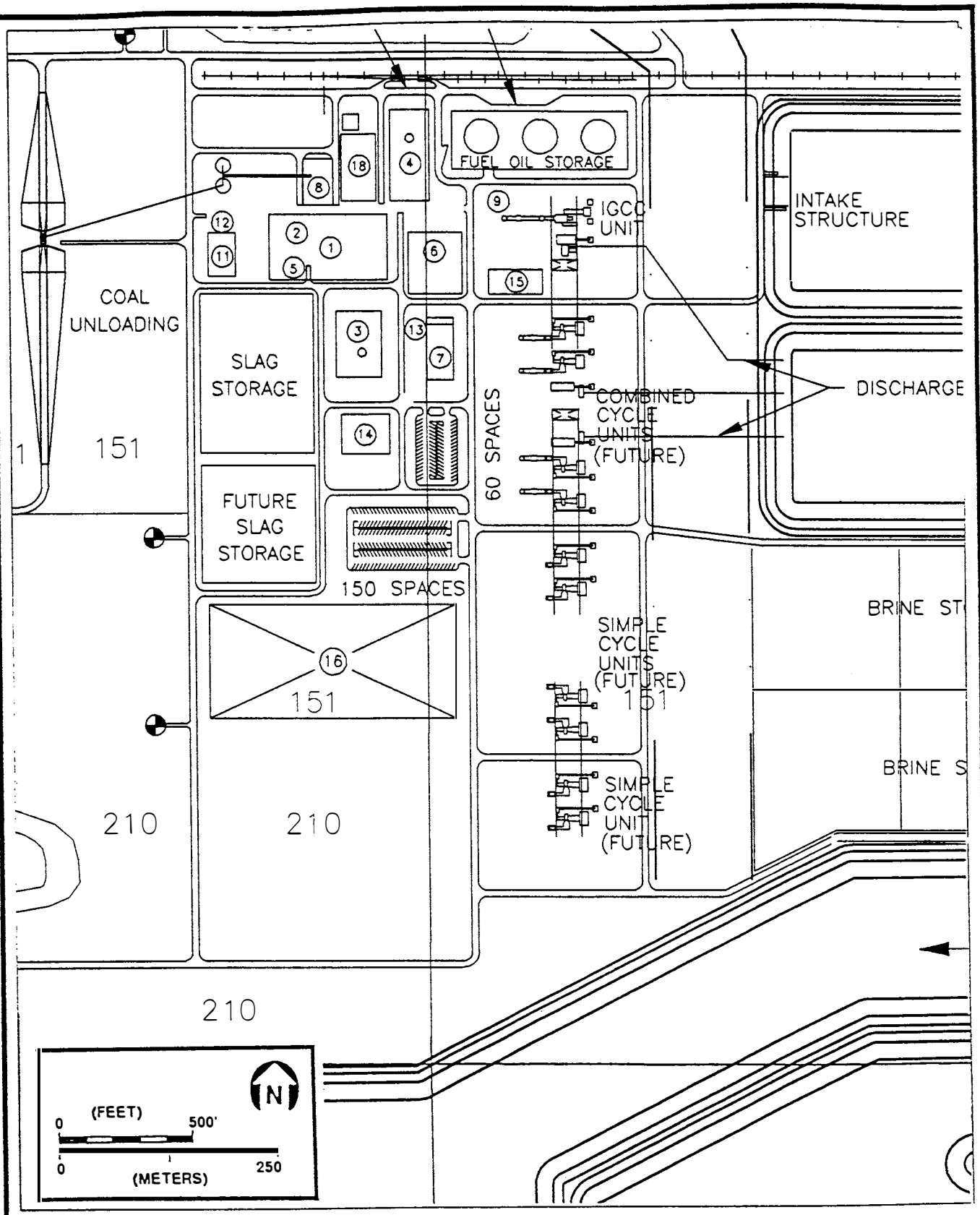

FIGURE 5. (PAGE 7 OF 13)
POST-RECLAMATION LAND USE WITH WETLAND CREATION/ENHANCEMENT AREAS DEPICTED
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Source: ECT, 1992.

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POLK POWER STATION

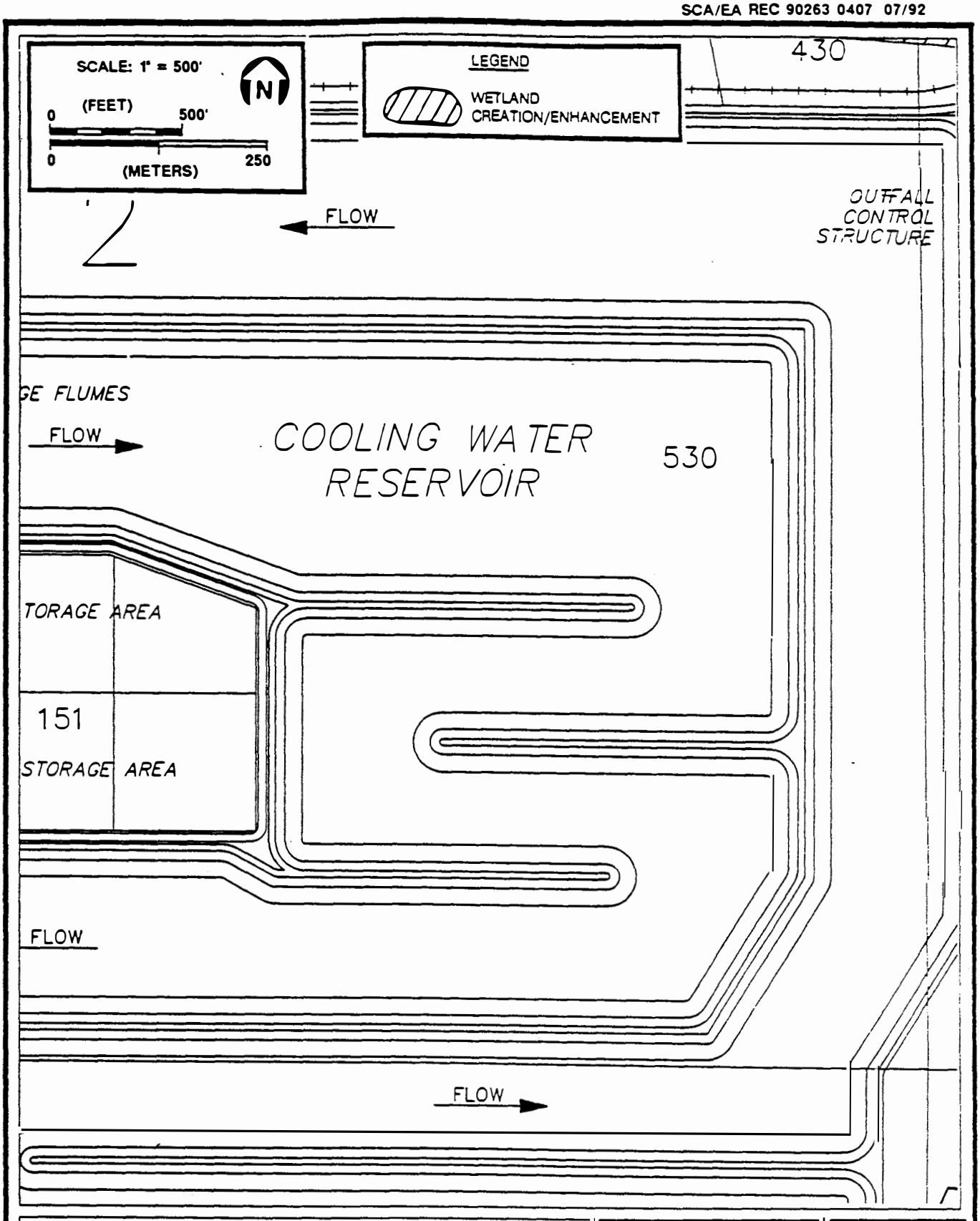

FIGURE 5. (PAGE 8 OF 13)
POST-RECLAMATION LAND USE WITH WETLAND CREATION/ENHANCEMENT AREAS DEPICTED
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TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

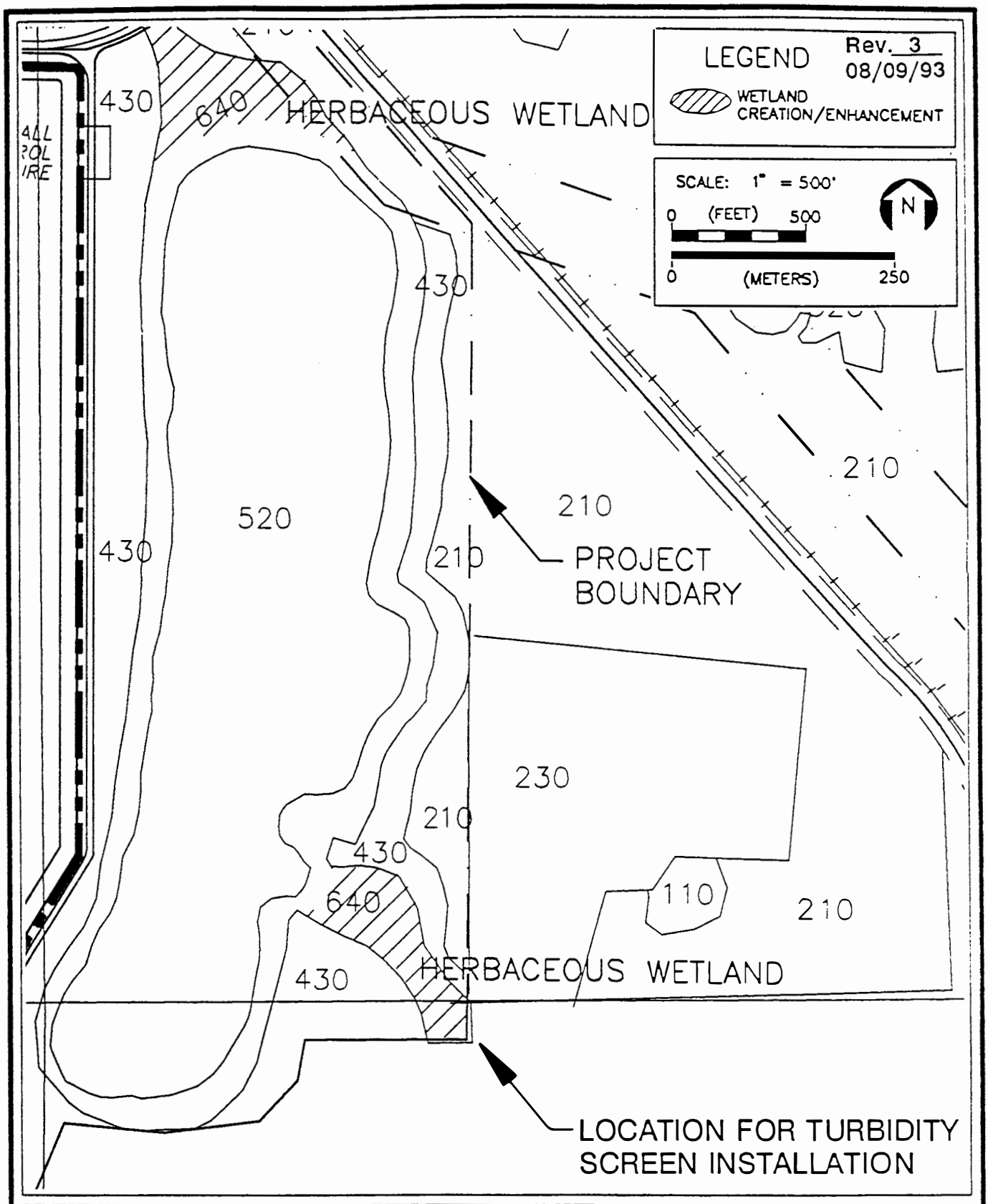

FIGURE 5. (PAGE 9 OF 13)
POSTRECLAMATION LAND USE WITH WETLAND CREATION/ENHANCEMENT AREAS DEPICTED
DREDGE-AND-FILL PERMIT APPLICATION
Source: ECT, 1992.

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

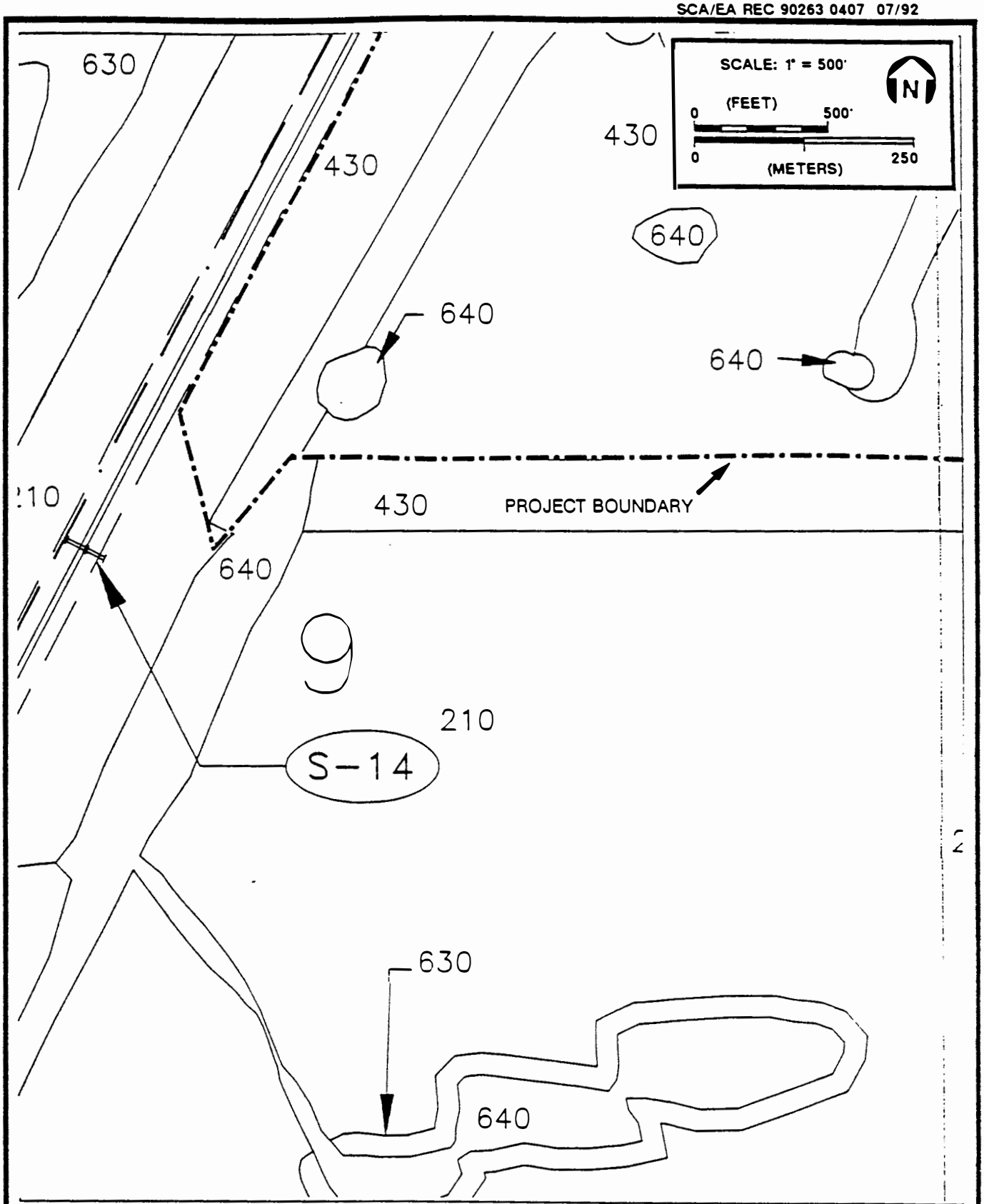

FIGURE 5. (PAGE 10 OF 13)
POST-RECLAMATION LAND USE WITH WETLAND CREATION/ENHANCEMENT AREAS DEPICTED
DREDGE AND FILL PERMIT APPLICATION
Source: ECT, 1992.

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

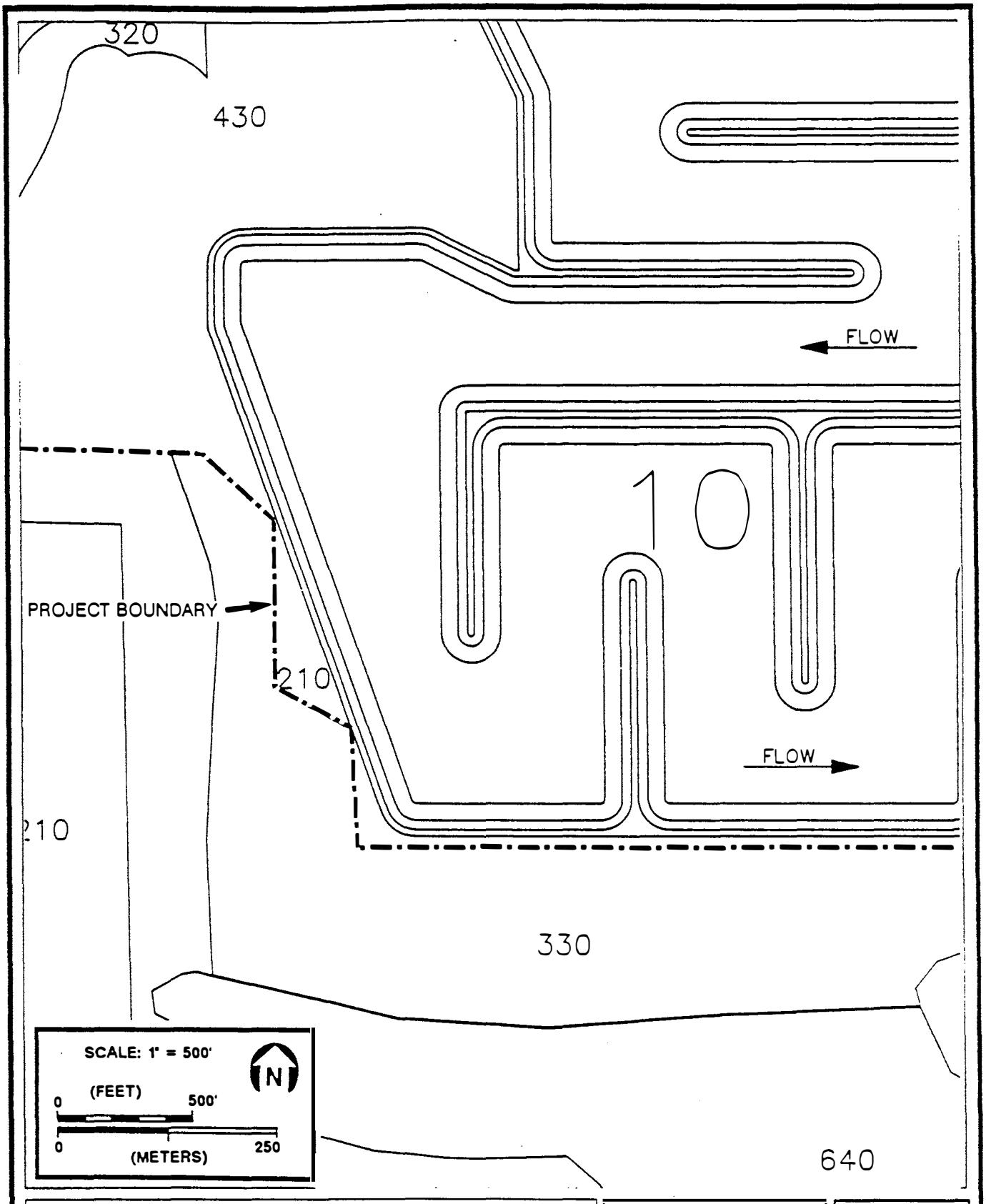

FIGURE 5. (PAGE 11 OF 13)
POST-RECLAMATION LAND USE WITH WETLAND CREATION/ENHANCEMENT AREAS DEPICTED
DREDGE AND FILL PERMIT APPLICATION
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TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

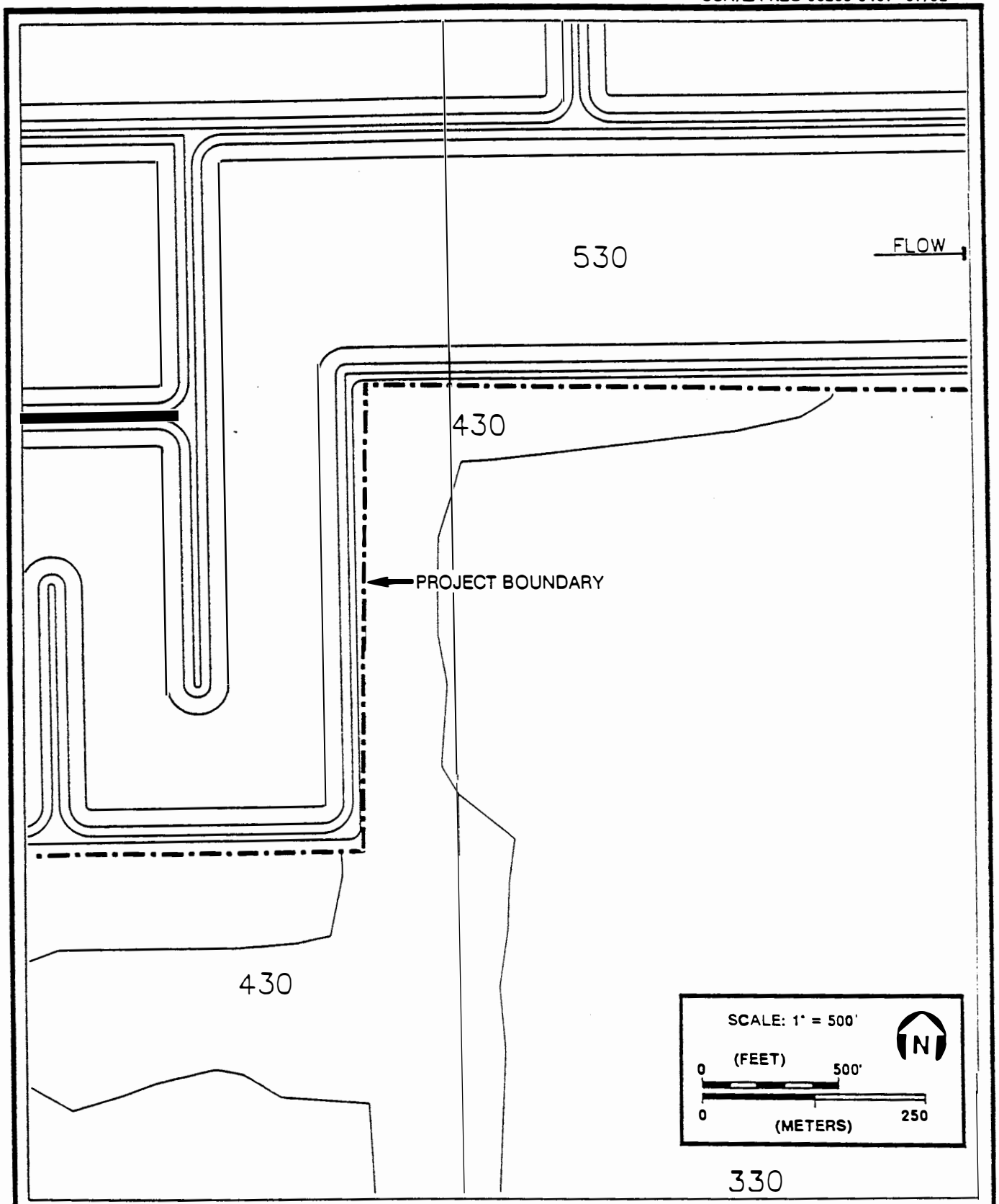

FIGURE 5. (PAGE 12 OF 13)
POST-RECLAMATION LAND USE WITH WETLAND CREATION/ENHANCEMENT AREAS DEPICTED
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TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

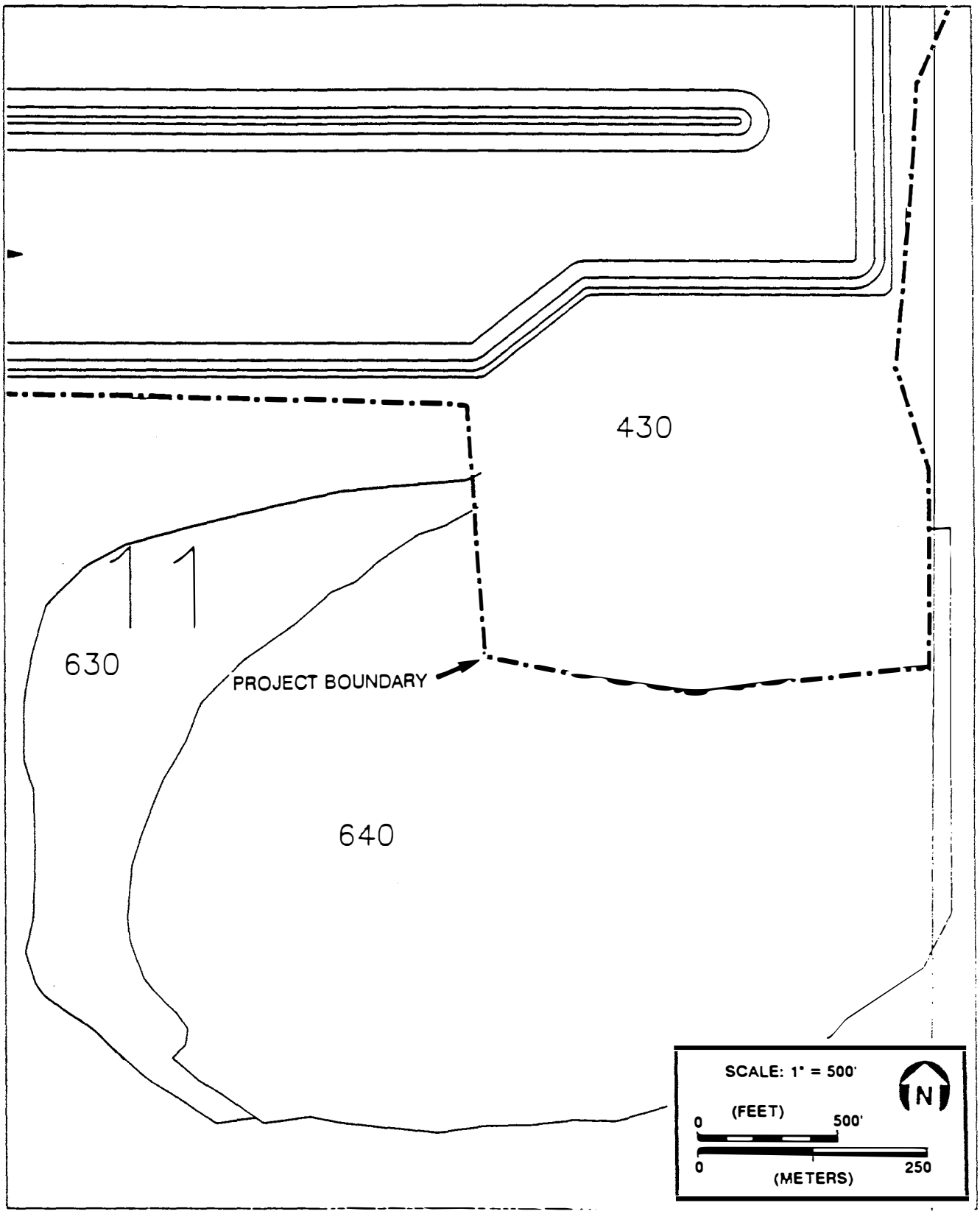

FIGURE 5. (PAGE 13 OF 13)
POST-RECLAMATION LAND USE WITH WETLAND CREATION/ENHANCEMENT AREAS DEPICTED
DREDGE AND FILL PERMIT APPLICATION
Source: ECT, 1992.

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POLK POWER STATION

Table 1. Acreages and Volumes of Wetland Fill

	Acres	Cubic Yards
Mine cuts filled for construction of the cooling water reservoir	180.81	2,917,068
Mine cuts filled for plant site construction	30.97	499,649
Disturbed herbaceous and early successional forested wetlands for plant site construction	41.33	133,358
TOTAL FILL	**253.11**	**3,550,075**

Source: ECT, 1992.

A total of 253.11 acres of highly disturbed wetlands are proposed for fill placement for construction of the Polk Power Station. As compensation for impacts to these wetland areas, Tampa Electric Company proposes to provide approximately 168.41 acres of combined wetland creation and wetland enhancement (see Table 2). The mitigation plan provides for recontouring of the remaining mine cuts to provide approximately 18.94 acres of forested wetland enhancement and 23.20 acres of herbaceous wetland enhancement. The remainder of the compensation package includes approximately 62.69 acres of forested wetland creation and approximately 63.58 acres of herbaceous wetland enhancement. The ratio of compensation acreage offered per acre of wetland fill is approximately 0.67:1.0.

The compensation package will include plantings of laurel oak, water oak, sweet gum (Liquidambar styraciflua), swamp redbay (Persea palustris), red maple, black gum (Nyssa sylvatica var. biflora) and other tree species as available for the canopy layer, as well as an herbaceous layer which includes maindencane (Panicum hemitomon), pickerelweed, and arrowhead.

Construction within or adjacent to the existing mine cuts will be facilitated by isolating and draining working areas and pumping the water into nearby mine cuts. This will minimize the occurrence of erosion or downstream silt and sedimentation in runoff. The only silt/sedimentation barrier to be installed will be erected upstream of a ditch which leads off the property (see Figure 5, Sheet 9 of 13 and Figure 6). Site grading activities will be primarily accomplished with pans and bulldozers. Typical cross sections of jurisdictional areas proposed for fill placement are included (Figure 7 and 8).

ALTERNATIVES ANALYSIS

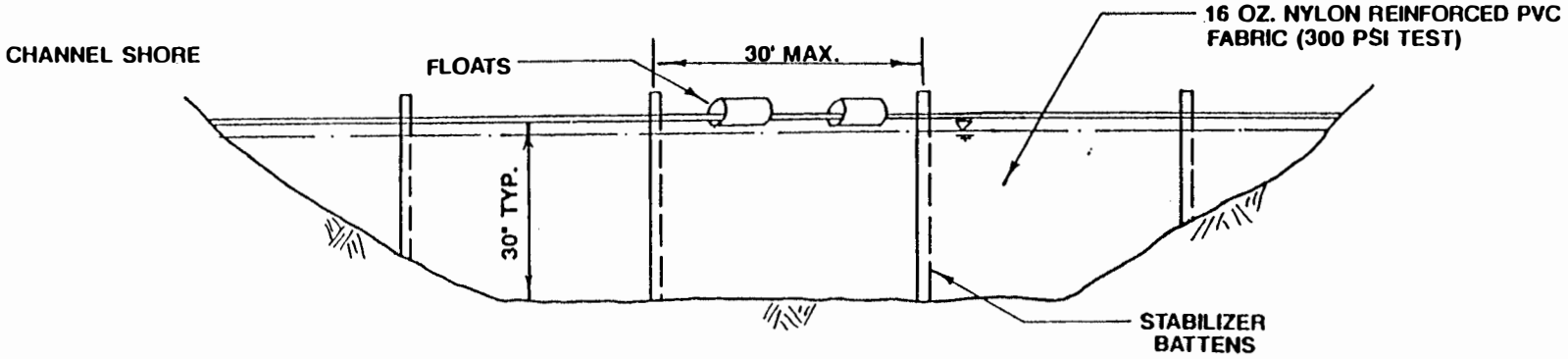
In order to meet the needs of a rapidly growing community, it has become necessary for several utility companies serving the area to update and expand their capacity to generate and transmit electricity. Numerous transmission corridors have been constructed or expanded to even out loading, and deactivated generating facilities

Table 2. Acreages of Wetland Compensation

	Acres
Wetland Creation	
Forested	62.69
Herbaceous	63.58
Wetland Enhancement	
Forested	18.94
Herbaceous	23.20
Total Mitigation	
Forested	81.63
Herbaceous	86.78
TOTAL COMBINED MITIGATION	**168.41**

Ratio = Mitigation:Impact = 0.67:1.0

Source: ECT, 1992.



LENGTH SUFFICIENT FOR
TOTAL WATER COLUMN COVERAGE

FIGURE 6.
TURBIDITY SCREEN DETAIL
DREDGE AND FILL PERMIT APPLICATION

Source: ECT, 1992.

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

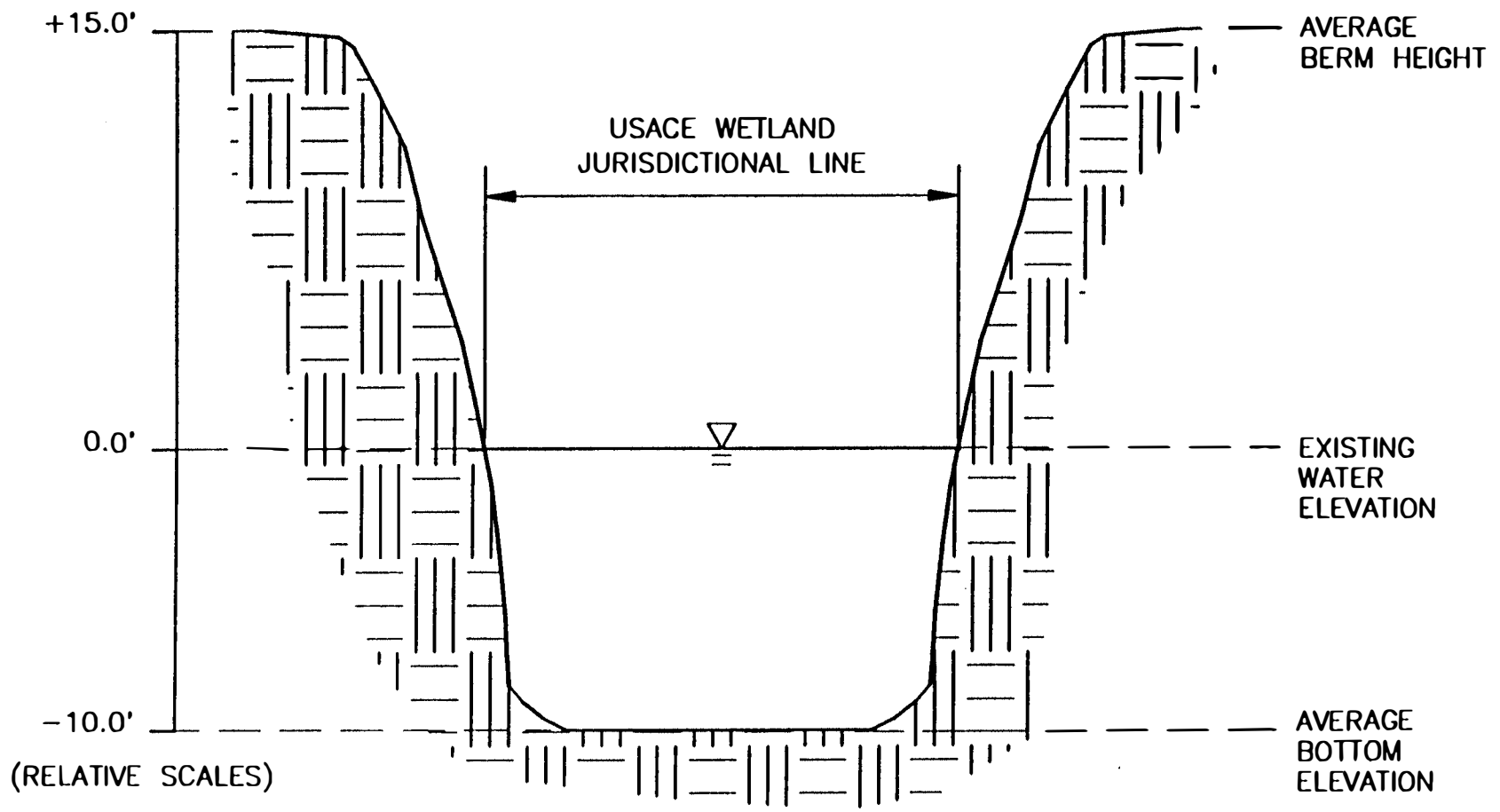


FIGURE 7.
TYPICAL CROSS SECTION OF EXISTING MINE CUTS
DREDGE AND FILL PERMIT APPLICATION

Source: ECT, 1992.

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

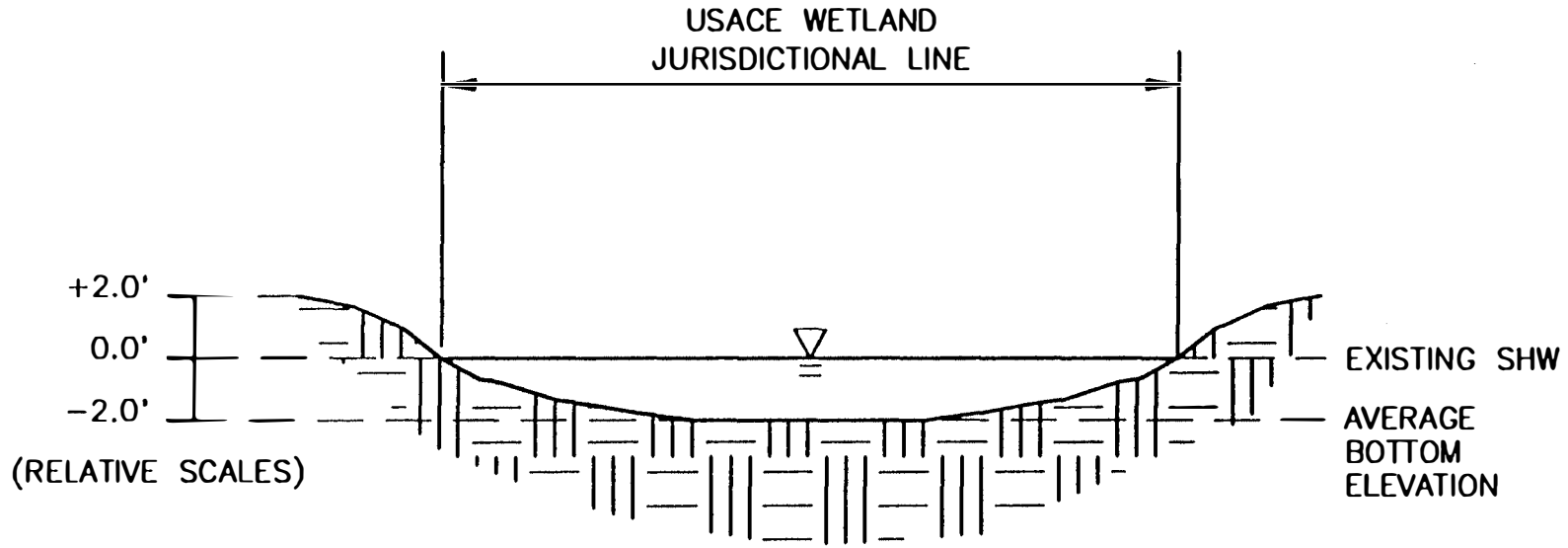


FIGURE 8.
TYPICAL CROSS SECTION OF EXISTING DISTURBED HERBACEOUS WETLANDS
DREDGE AND FILL PERMIT APPLICATION

Source: ECT, 1992.

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

have been returned to service to assist in managing peak loads. In addition to these measures, new, modern generating facilities need to be constructed to supply the west-central Florida area.

During the course of selecting an appropriate site for constructing a new power plant, Tampa Electric Company first considered a large tract of land on lower Tampa Bay adjacent to Port Manatee that was Tampa Electric Company property. This property had the advantages of ready access to a barge transported coal supply, proximity to the area which was to be served, and existing Tampa Electric Company ownership. However, this property had the disadvantage of being located adjacent to an environmentally sensitive estuary, Cockroach Bay. Public concerns expressed relative to this proposed power plant site led Tampa Electric Company to establish a committee comprised of public and private individuals from the business and environmental communities to examine alternatives to the Port Manatee site. Upon examining the available property that had appropriate dimensions and assessing the various parcels for environmental sensitivity, proximity to the service area and access to fuel supplies, the committee selected the property now known as the Polk Power Station.

The Polk Power Station property has the advantages of already being in a highly disturbed condition subsequent to phosphate mining activities, access to rail service for fuel supply, and access by existing highways or roads for ancillary service and employee commuting. Construction of the Polk Power Station on the selected property has a disadvantage since an exceptionally large acreage of the property is, by definition, jurisdictional wetland. The vast majority of the jurisdictional wetland is open water standing in unreclaimed mine cuts made when draglines excavated below natural grade to access phosphate reserves. Although the site plan proposes a seemingly large acreage of displacement for this type of habitat, most has been retained within the design of the cooling reservoir (see Figure 3). In addition most of the berms constructed for directing the cooling water around its circuitous path are situated such that they overlie the upland ridges between the mine cuts.

The placement of fill for plant site construction in other disturbed areas which contain jurisdictional wetlands is necessary for the development of a workable site plan. Wetland areas that are sufficiently removed from the plant site will be retained intact after construction (i.e., the southwestern corner of the property, see Figure 5, Pages 5 and 10 of 13). The remainder are displaced, but their functions and values are more than replaced by the large, inter-connected wetland compensation areas with diverse habitat and mosaics of wetland and upland communities. Tampa Electric Company has substantially avoided the potential disturbance to higher quality wetlands by the selection of the Polk Power Station over the Port Manatee property, minimized the displacement of wetlands with a sensitive site plan, only displaced the most disturbed wetland areas with the lowest functional values, and more than compensated for the values and functions displaced with a large, diverse community derived from wetland creation and wetland enhancement.

ATTACHMENT B

POLK POWER STATION LEGAL DESCRIPTION OF LANDS

LANDS FROM FREEPORT MACMORAN RESOURCE PARTNERS, LIMITED PARTNERSHIP (Agrico Chemical Company)

LANDS TO THE EAST OF STATE ROAD 37:

TOWNSHIP 32 SOUTH, RANGE 23 EAST, POLK COUNTY, FLORIDA

SECTION 1

That part of the West 330.00 feet of the East 1/2 of the West 1/2 of said Section 1, lying southwesterly of Fort Green Road, AND all that part of the West 1/4 of said Section 1 lying southwesterly of Fort Green Road.

SECTION 2

a. The West 848.00 feet of the NW 1/4 of the NW 1/4.
b. The South 3/4 LESS that part described as; Begin 400.00 feet West of the NE corner of said South 3/4, run thence West 3600.00 feet; thence South 150.00 feet; thence East 450.00 feet; thence South 200.00 feet; thence East 700.00 feet; thence North 200.00 feet; thence East 2450.00 feet; thence North 150.00 feet to the POINT OF BEGINNING.

SECTION 3

All lying East of State Road 37.

SECTION 4

All lying East of State Road 37.

SECTION 9

BEGIN at the NE corner of said Section 9 and proceed 5.00°04'08"E. along the East line of said Section 9 for 2117.07 feet; thence N.88°05'57"W. for 323.11 feet; thence S.88°42'07"W. for 983.72 feet; thence N.89°51'23"W. for 1058.61 feet; thence S.39°38'56"W. for 454.20 feet; thence N.13°09'59"W. for 538.34 feet to the easterly right-of-way line of State Road No. 37 (being 80 feet at right angles from centerline); thence N.27°31'59"E. along said right-of-way line for 2184.60 feet to the North line of said Section 9; thence N.89°32'05"E. along said North line for 1765.11 feet to the POINT OF BEGINNING.

SECTION 10

BEGIN at the NE corner of said Section 10 and proceed S.00°00'02"E. along the East line of said Section 10 for 1885.69 feet thence N.88°45'46"W. for 324.02 feet; thence S.01°25'49"W. for 1761.69 feet; thence N.89°56'27"W. for 3504.25 feet; thence N.02°46'52"W. for 454.48 feet; thence N.61°33'02"W. for 320.02 feet; thence N.00°22'41"W. for 641.25 feet; thence N.46°54'10"W. 372.71 feet; thence N.88°05'57"W. for 820.69 feet; to the West line of said Section 10; thence N.00°04'08"W. for 2117.07 feet to the NW corner of said Section 10; thence S.89°53'15"E. along the North line of said Section 10 for 5274.75 feet to the POINT OF BEGINNING.

SECTION 11

BEGIN at the NE corner of said Section 11 and proceed S.00°13'13"E. along the East line of said Section 11 for 731.09 feet; thence S.22°01'06"W. for 60.15 feet; thence S. 04°41'20"W. for 1038.35 feet; thence S.16°25'50"E. for 399.84 feet again to the East line of said Section 11; thence S.00°13'13"E. along said East line for 448.50 feet to the East Quarter Section Corner of said Section 11; thence S.00°19'20"W. along the East line of the SE 1/4 of said Section 11 for 277.57 feet; thence S.83°10'34"W. for 845.66 feet; thence N.80°44'17"W. for 775.80 feet; thence N.04°00'31"W. for 937.40 feet; thence N.88°45'46"W. for 3637.10 feet to the West line of said Section 11; thence N.00°00'02"W. for 1885.69 feet to the NW corner of said Section 11; thence N.89°55'04"E. for 5298.52 feet to the POINT OF BEGINNING.

SECTION 12

BEGIN at the NW corner of said Section 12 and proceed S.88°52'09"E. along the North line of the NW 1/4 of said Section 12 for 1649.70 feet to a concrete monument number 1943; thence S.00°19'05"W. for 75.98 feet; thence S.89°23'48"W. for 614.63 feet; thence S.10°48'34"W. for 155.81 feet; thence S.43°38'11"W. for 211.14 feet; thence S.82°21'29"W. for 355.22 feet; thence N.84°53'22"W. for 385.84 feet; thence S.22°01'06"W. for 320.75 feet to the West line of said Section 12; thence N.00°13'13"W. along said West line for 731.09 feet to the POINT OF BEGINNING.

LANDS TO THE WEST OF STATE ROAD 37:

TOWNSHIP 32 SOUTH, RANGE 23 EAST, POLK COUNTY, FLORIDA

SECTION 3

The part of the South 1/2 of the NW 1/4 lying West of State Road No. 37. LESS existing county maintained right-of-way for Bethlehem Road.

SECTION 4

The SE 1/4 of the SW 1/4, LESS existing county maintained right-of-way for Albritton Road. The SE 1/4 of said Section 4 lying North and West of State Road No. 37, LESS existing county maintained right-of-way for Albritton Road, and subject to GAS PIPELINE EASEMENT in O.R. Book 219 on Page 341 of the Public Records of Polk County, Florida. That part of the South 1/2 of the NE 1/4 of said Section 4 lying North and West of State Road No. 37, LESS existing county maintained right-of-way for Bethlehem Road, and subject to GAS PIPELINE EASEMENT in O.R. Book 219 on Page 341 of the Public Records of Polk County, Florida.

TOWNSHIP 32, SOUTH, RANGE 23 EAST, POLK COUNTY, FLORIDA

SECTION 7

The NE 1/4, LESS the NE 1/4 of the NE 1/4, AND LESS the North 416.00 feet of the East 209.00 feet of the NW 1/4 of the NE 1/4, AND LESS existing county maintained right-of-way for Albritton Road.
The SE 1/4, LESS right-of-way for State Road No. 674.
The SW 1/4, LESS right-of-way for State Road No. 674.
The NW 1/4, LESS the NE 1/4 of the NW 1/4, AND LESS existing county maintained right-of-way for Albritton Road. Said Section 7 being subject to existing Florida Gas Transmission Co. Pipeline Easement.

SECTION 8

The NE 1/4, LESS the West 1/2 of the NW 1/4 of the NE 1/4.
The SE 1/4 of Section 8, LESS right-of-way for State Road No. 674.
The SW 1/4 of Section 8, LESS right-of-way for State Road No. 674.
The South 1/2 of the NW 1/4.

SECTION 9

ALL, lying West of State Road No. 37 LESS existing county maintained right-of-way for Albritton Road, AND LESS right-of-way for State Road No. 674.

LANDS FROM AMERICAN CYANAMID COMPANY

TOWNSHIP 31 SOUTH, RANGE 23 EAST, POLK COUNTY, FLORIDA

SECTION 34

All the part of the S-3/4 of E-3/4 of the section lying east of the right-of-way of State Road 37 and also lying south of the right-of-way of County Road 630 (formerly designated State Road 630).

SECTION 35

All the part of the S-3/4 of the section lying south of the right-of-way of County Road 630 (formerly designated State Road 630) and also lying west of the right-of-way of the Brewster-Fort Green Road.

TOWNSHIP 32 SOUTH, RANGE 23 EAST, POLK COUNTY, FLORIDA

SECTION 2

a. The N-1/2 of N-1/2, LESS the west 848 feet thereof, and SUBJECT TO existing right-of-way of the Brewster-Fort Green Road at the northeast corner thereof.

b. The part of the S-1/2 of N-1/2 (being part of U.S. Government Lot 1 in the NW-1/4 and of U.S. Government Lot 1 in the NE-1/4) described as: begin at a point on the north boundary of said S-1/2 of N-1/2 located 400 feet west of the northeast corner thereof (measured along said north boundary), thence west along said north boundary 3600 feet, thence south 150 feet, thence east 450 feet, thence south 200 feet, thence east 700 feet, thence north 200 feet, thence east 2450 feet, thence north 150 feet to the point of beginning. (The directions "north" and "south" meaning the bearing of the east boundary of Section 2, and the directions "east" and "west" meaning the bearing of the north boundary of said S-1/2 of N-1/2 of Section 2.)

Source: Andrew Edgemon & Associate, 1991.

Southwest Florida Water Management District

2379 Broad Street (U.S. 41 South) Brooksville, Florida 34609-6899
Phone (904) 796-7211 or 1-800-423-1476 SUNCOM 628-4150

July 1, 1992

Anthony N. Arcuri
Environmental Consulting and Technology, Inc
5405 Cypress Center Drive
Suite 200
Tampa, Fla. 33609

Subject: Proposed Tampa Electric Co. Polk Power Station Site
Sections 2,3/Township 32 S/Range 23 E
Polk County

Dear Mr. Arcuri:

As a result of the June 29, 1992, on site meeting with you, it was determined that there are some areas of wetlands in the unmined portion of the proposed power plant site. The poor quality of the June 13, 1991, aerial photograph you provided, and the disturbed nature of the site made it unworkable to verify the present wetland boundaries you identified. After inspecting better quality 1984 aerial photography and examining the National Wetland Inventory (NWI) maps for the unmined portion of the site, we determined that they more realistically reflect the acreage and type of wetlands you will need to compensate for. Please utilize these maps for wetland planning purposes for this project.

Please contact me at 534-1448 to further discuss this matter.

Sincerely,

David Bishof
Environmental Scientist
Bartow Permitting Department
Resource Regulation

DB:kmh226

cc: Richard Gannon

Florida Department of Environmental Regulation
Twin Towers Office Bldg. ● 2600 Blair Stone Road ● Tallahassee, Florida 32399-2400
Lawton Chiles, Governor
Carol M. Browner, Secretary

April 15, 1992

Tampa Electric Company
c/o Robert Hearon
Environmental Consulting & Tech., Inc.
5405 Cypress Center Drive, Suite 200
Tampa, FL 33609

Dear Mr. Hearon:

This letter is to confirm our telephone conversation regarding my request that TECO have a binding jurisdictional determination done on the proposed Polk County power plant site. After discussing the matter with Rick Cantrell. I am withdrawing my request that a binding jurisdictional determination be done for the site.

The BWRM staff has discussed how the baseline study should deal with mined-out lands, i.e., to evaluate them as if reclamation has been completed and the restored communities were mature. Part of the application information shall be copies of all permits issued to mine the site and copies of the approved LRU's from DNR for the site. This information should be used to produce maps showing what the site will look like after reclamation has occurred without a power plant on the site. The maps should show all wetlands indicate the wetland type and jurisdiction and be used to estimate the impacts of the power plant on the restored wetlands. If the review of the reclamation plans indicates that the reclamation plans can be revised to incorporate both the power plant and the required reclamation, the impact of the plant would be greatly reduced.

If you have any questions, I can be contacted at (904) 488-0130.

Sincerely,

Trudie D. Bell

Trudie D. Bell
Environmental Supervisor II
Wetland Resource Management

cc: Buck Oven

APPENDIX D

Florida DEP Prevention of Significant Deterioration (PSD) Final Determination (Including PSD Permit), and Associated Correspondence

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
NOTICE OF PERMIT

In the matter of an
Application for Permit by:

DEP File No. PSD-FL-194
Polk County

Mr. G. F. Anderson
Tampa Electric Company
P. O. Box 111
Tampa, FL 33601-0111

Enclosed is Permit Number PSD-FL-194 to construct a power plant facility at County Road 630 approximately 13 miles southwest of Bartow, Polk County, Florida, issued pursuant to Section (s) 403, Florida Statutes.

Any party to this Order (permit) has the right to seek judicial review of the permit pursuant to Section 120.68, Florida Statutes, by the filing of a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, with the Clerk of the Department in the Office of General Counsel, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400; and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 30 days from the date this Notice is filed with the Clerk of the Department.

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION

C. H. Fancy, P.E., Chief
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, FL 32399-2400
904-488-1344

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this NOTICE OF PERMIT and all copies were mailed before the close of business on 2/28/94 to the listed persons.

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED,
on this date, pursuant to
§120.52(11), Florida Statutes,
with the designated Department
Clerk, receipt of which is hereby
acknowledged.

Cynthia A. Doyle (Clerk) 2/28/94 (Date)

Copies furnished to:
W. Thomas, SWD
D. Martin, Polk Co.
J. Harper, EPA
J. Bunyak, NPS
L. Curtin, Holland & Knight

Final Determination

Tampa Electric Company
Polk County, Florida

260 MW INTEGRATED COAL GASIFICATION
COMBINED CYCLE UNIT

File No: PSD-FL-194
PA-92-32

Department of Environmental Protection
Division of Air Resources Management
Bureau of Air Regulation

February 17, 1994

Final Determination

The Technical Evaluation and Preliminary Determination for the permits to construct a 260 megawatt (MW) integrated coal gasification combined cycle (IGCC) combustion turbine, coal gasification facilities, an auxiliary boiler and a fuel oil storage tank at an electrical power plant site in Bartow, Polk County, Florida, was distributed on December 20, 1993. The Notice of Intent to Issue was published in the Tampa Tribune on December 27, 1993. Copies of the evaluation were available for public inspection at the Department offices in Tampa and Tallahassee.

No adverse comments on the evaluation and proposed permits were submitted by the National Park Service (NPS) and the U.S. Environmental Protection Agency (EPA) in their letters dated January 27 and January 26, 1994 respectively.

Tampa Electric Company submitted comments on the Technical Evaluation and Preliminary Determination for the Polk Power Station. The applicant noted that the fuel bound nitrogen adjustment should also apply to oil firing during the two year hot gas clean up demonstration period. The Department agrees with the applicant's comment, and includes the language in the permit to reflect that.

The final action of the Department will be to issue the PSD permit (PSD-FL-194) with the changes noted above.

Florida Department of
Environmental Protection

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Lawton Chiles
Governor

Virginia B. Wetherell
Secretary

PERMITTEE:
Tampa Electric Company
702 North Franklin Street
Tampa, Florida 33602

Permit Number: PA-92-32
PSD-FL-194
Expiration Date: June 1, 1996
County: Polk
Latitude/Longitude: 27°43'43"N
81°59'23"W
Project: 260 MW Integrated Coal Gasification Combined Cycle Combustion Turbine

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Chapters 17-212 and 17-4. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawings, plans, and other documents attached hereto or on file with the Department and specifically described as follows:

For one 260 MW integrated coal gasification combined cycle (IGCC) combustion turbine (GE 7F CT or equivalent) with maximum heat input at 59°F of 1,755 MMBtu/hr (syngas) and 1765 MMBtu/hr (oil) to be located at the Polk County site near Bowling Green, Florida. The coal gasification facility will consist of coal receiving, storage and process facilities, air separation unit, gasifier, product gas cleaning facilities, acid gas removal unit, and auxiliary equipment. The first phase will also include a 49.5 MMBtu/hr auxiliary boiler and a 71,450 barrel fuel oil storage tank.

The source shall be constructed in accordance with the permit application, plans, documents, amendments and drawings, except as otherwise noted in the General and Specific Conditions.

Attachments are listed below:

1. Tampa Electric Company (TECO) application received July 30, 1992.
2. Department's letter dated September 22, 1992.
3. TECO's letter dated April 12, 1993.

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver of or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.

6. The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.

GENERAL CONDITIONS:

7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:

a. Have access to and copy any records that must be kept under the conditions of the permit;

b. Inspect the facility, equipment, practices, or operations regulated or required under this permit; and

c. Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:

a. A description of and cause of non-compliance; and

b. The period of noncompliance, including dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, Florida Statutes. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

GENERAL CONDITIONS:

10. The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.

11. This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 17-4.120 and 17-730.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

12. This permit or a copy thereof shall be kept at the work site of the permitted activity.

13. This permit also constitutes:

(X) Determination of Best Available Control Technology (BACT)
(X) Determination of Prevention of Significant Deterioration (PSD)
(X) Compliance with New Source Performance Standards (NSPS)

14. The permittee shall comply with the following:

a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.

b. The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application for this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.

GENERAL CONDITIONS:

c. Records of monitoring information shall include:

- the date, exact place, and time of sampling or measurements;
- the person responsible for performing the sampling or measurements;
- the dates analyses were performed;
- the person responsible for performing the analyses;
- the analytical techniques or methods used; and
- the results of such analyses.

15. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

SPECIFIC CONDITIONS:

A. Operation and Construction

The construction and operation of Polk Power Station (Project) shall be in accordance with all applicable provisions of Chapter 17, F.A.C. The following emission limitations reflect final BACT determinations for Phase I (integrated gasification, combined cycle (IGCC) combustion turbine and auxiliary equipment) of the project fired with syngas or fuel oil. BACT determinations for the remaining phases will be made upon review of supplemental applications. In addition to the foregoing, the Project shall comply with the following conditions of certification as indicated.

B. Heat Input

The maximum heat input to the IGCC combustion turbine (CT) shall neither exceed 1,755 MMBtu/hr while firing syngas, nor 1765 MMBtu/hr while firing No. 2 fuel oil at an ambient temperature of 59° F. Heat input may vary depending on ambient conditions and the CT characteristics. Manufacturer's curves for the heat input correction to other temperatures shall be provided to DEP for review 120 days after the siting board approval of the site certification. Subject to approval by the Department, the manufacturer's curve may be used to establish heat input rates over a range of temperature for the purpose of compliance determination.

SPECIFIC CONDITIONS:

C. Hours of Operation

The IGCC unit in Phase I may operate continuously, i.e., 8,760 hrs/year.

D. Fuel

Only syngas and low sulfur fuel oil shall be fired in the IGCC combustion turbine. Only low sulfur fuel oil shall be fired in the auxiliary boiler. The maximum sulfur content of the low sulfur fuel oil shall not exceed 0.05 percent, by weight.

E. Auxiliary Boiler

The maximum heat input to the auxiliary boiler shall not exceed 49.5 MMBtu/hr when firing No. 2 fuel oil with 0.05 percent maximum sulfur content (by weight). All fuel consumption must be continuously measured and recorded for the auxiliary boiler.

F. Fuel Consumption

The maximum coal input to the coal gasification plant shall not exceed 2,325 tons per day, on a dry basis.

G. Fugitive Dust

Fugitive dust emissions during the construction period shall be minimized by covering or watering dust generation areas. Particulate emissions from the coal handling shall be controlled by enclosing all conveyors and conveyor transfer points (except those directly associated with the coal stacker/reclaimer for which an enclosure is operationally infeasible). Fugitive emissions shall be tested as specified in Specific Condition No. J. Inactive coal storage piles shall be shaped, compacted, and oriented to minimize wind erosion. Water sprays or chemical wetting agents and stabilizers shall be applied to uncovered storage piles, roads, handling equipment, etc. during dry periods and, as necessary, to all facilities to maintain an opacity of less than or equal to five percent. When adding, moving or removing coal from the coal pile, an opacity of 20 percent is allowed.

SPECIFIC CONDITIONS:

R. Emission Limits

1. The maximum allowable emissions from the IGCC combustion turbine, when firing syngas and low sulfur fuel oil, in accordance with the BACT determination, shall not exceed the following:

POLLUTANT	FUEL	BASIS[a]	EMISSIONS LIMITATIONS - 7F CT Post Demonstration Period LB/HR*	TPY[b]
NOx	Oil	42 ppmvd**	311	N/A
	Syngas	25 ppmvd	222.5	1,044
VOC[c]	Oil	0.028 lb/MMBtu	32	N/A
	Syngas	0.0017 lb/MMBtu	3	38.5
CO	Oil	40 ppmvd	99	N/A
	Syngas	25 ppmvd	98	430.1
PM/PM_{10}[d]	Oil	0.009 lb/MMBtu	17	N/A
	Syngas	0.013 lb/MMBtu	17	74.5
Pb	Oil	5.30E-5 lb/MMBtu	0.101	N/A
	Syngas	2.41E-6 lb/MMBtu	0.0035	0.067
SO_2	Oil	0.048 lb/MMBtu	92.2	N/A
	Syngas	0.17 lb/MMBtu	357	1563.7

Visible Emissions Syngas 10 percent opacity
Oil 20 percent opacity

(*) Emission limitations in lbs/hr are 30-day rolling averages. "Pollutant emission rates may vary depending on ambient conditions and the CT characteristics. Manufacturer's curves for the emission rate correction to other temperatures at different loads shall be provided to DEP for review 120 days after the siting board approval of the site certification. Subject to approval by the Department, the manufacturer's curve may be used to establish pollutant emission rates over a range of temperature for the purpose of compliance determination."

(**) The emission limit for NO_x is adjusted as follows for higher fuel bound nitrogen contents up to a maximum of 0.030 percent by weight:

SPECIFIC CONDITIONS:

FUEL BOUND NITROGEN (% by weight)	NO_x EMISSION LEVELS (ppmvd @ 15% O_2)
0.015 or less	42
0.020	44
0.025	46
0.030	48

using the formula STD = 0.0042 + F where:

STD = allowable NO_x emissions (% by volume at 15% O_2 and on a dry basis).

F = NO_x emission allowance for FBN defined by the following table:

FUEL BOUND NITROGEN (% by weight)	F (NO_x % BY VOLUME)
0 < N < 0.015	0
0.015 < N < 0.03	0.04 (N-0.015)

N = nitrogen content of the fuel (% by weight).

NO_x emissions are preliminary for the fuel oil specified in Specific Condition D of Conditions of Certification. The permittee shall submit fuel bound nitrogen content data for the low sulfur fuel oil prior to commercial operation to the Bureau of Air Regulation in Tallahassee, and on each occasion that fuel oil is transferred to the storage tanks from any other source to the Southwest District office in Tampa. The % FBN (Z) following each delivery of fuel shall be determined by the following equation:

$x(Y) + m(n) = (x+m)(Z)$

where x = amount fuel in storage tank
y = % FBN in storage tank
m = amount fuel added
n = % FBN of fuel added
Z = % FBN of composite

(a) Syngas lb/MMBtu values based on heat input (HHV) to coal gasifier and includes emissions from H_2SO_4 plant thermal oxidizer. Pollutant concentrations in ppmvd are corrected to 15% oxygen.

(b) Annual emission limits (TPY) based on 10 percent annual capacity factor firing fuel oil.

$\frac{\text{Load (\%)}}{100} \times \text{hours of operation} \leq 876$ for fuel oil.

SPECIFIC CONDITIONS:

(c) Exclusive of background concentrations.

(d) Excluding sulfuric acid mist.

2. The maximum allowable emissions from the IGCC combustion turbine, when firing syngas and No. 2 fuel oil during the two year demonstration period, shall not exceed the following:

		EMISSIONS LIMITATIONS 7FCT	
POLLUTANT	**FUEL**	**LB/HR***	**TPY[a]**
NO_x	Oil**	311	N/A
	Syngas	664.2	2,908.3
VOC[b]	Oil	32	N/A
	Syngas	3	38.5
CO	Oil	99	N/A
	Syngas	99	430.1
PM/PM_{10}[c]	Oil	17	N/A
	Syngas	17	74.5
Pb	Oil	0.101	N/A
	Syngas	0.023	0.13
SO_2	Oil	92.2	N/A
	Syngas	518	2,269
Visible Emissions		Syngas 10 percent opacity Oil 20 percent opacity	

(*) Emission limitations in lbs/hr are 30-day rolling averages.

(**) Footnote ** as shown in Specific Condition H.1. for fuel bound nitrogen adjustment also applies to oil firing during the Demonstration Period.

(a) Annual emission limits (TPY) based on 10-percent annual capacity factor firing No. 2 fuel oil.

$$\frac{\text{Load (\%)}}{100} \times \text{hours of operation} \leq 876 \text{ for oil.}$$

(b) Exclusive of background concentrations.

(c) Excluding sulfuric acid mist.

SPECIFIC CONDITIONS:

3. The following allowable turbine emissions, were determined by BACT, and are also tabulated for PSD and inventory purposes:

ALLOWABLE EMISSIONS

POLLUTANT	FUEL	IGCC POST DEMONSTRATION LB/HR	IGCC POST DEMONSTRATION TPY[a]	IGCC 2-YEAR DEMONSTRATION LB/HR	IGCC 2-YEAR DEMONSTRATION TPY[b]
Sulfuric Acid[c]	Syngas	55	241	55	241
Inorganic Arsenic	Syngas	0.0006	0.019	0.08	0.35
Beryllium	Syngas	0.0001	0.0029	0.0001	0.0029
Mercury	Syngas	0.0034	0.017	0.025	0.11

(a) Based on baseload operations firing syngas, with emission rates equivalent to 100 percent CGCU operations; up to 10 percent annual capacity factor firing fuel oil.

(b) Based on baseload operations firing syngas, with a maximum of 8760 hrs/yr of HGCU operations; up to 10 percent annual capacity factor firing fuel oil.

(c) Sulfuric acid mist emissions assume a maximum of 0.05 percent sulfur in the fuel oil.

4. Excess emissions from the turbine resulting from startup, shutdown, malfunction, or load change shall be acceptable providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess emissions shall be minimized but in no case exceed two hours in any 24-hour period unless specifically authorized by the Department for a longer duration. Best operating practices shall be documented in writing and a copy submitted to the Department along with the initial compliance test data. The document may be updated as needed with all updates submitted to the Department within thirty (30) days of implementation and shall include time limitations on excess emissions caused by turbine startup.

5. After the demonstration period, permittee shall operate the combustion turbine to achieve the lowest possible NO_x emission limit but shall not exceed 25 ppmvd corrected to 15% oxygen and ISO conditions.

SPECIFIC CONDITIONS:

6. The combustion turbine will be operated for 12-18 months after the demonstration period (estimated to be from Mid 1998 until December 31, 1999). During that period NO_x emission testing will be performed on the turbine at a regular interval of every 2 months. The Department shall be provided with a test protocol including a time schedule 15 days prior to the initial test. The permittee will provide the Department the emission test results 30 days after the test is performed. These results are not for compliance purposes. The Department shall be notified and the reasons provided if a scheduled test is delayed or canceled.

7. One month after the test period ends (estimated to be by February 2000), the permittee will submit to the Department a NO_x recommended BACT Determination as if it were a new source using the data gathered on this facility, other similar facilities and the manufacturer's research. The Department will make a determination on the BACT for NO_x only and adjust the NO_x emission limits accordingly.

I. Auxiliary Boiler Operation

Operation of the auxiliary boiler shall be limited to a maximum of 1,000 hours per year and only during periods of startup and shutdown of the IGCC unit, or when steam from the IGCC unit's heat recovery steam generator is unavailable. The following emission limitations shall apply:

1. NO_x emissions shall not exceed 0.16 lbs/MMBtu for oil firing.

2. Sulfur dioxide emissions shall be limited by firing low sulfur fuel oil with a maximum sulfur content of 0.05 percent by weight.

3. Visible emissions shall not exceed 20 percent opacity (except for one six-minute period per hour during which opacity shall not exceed 27 percent), while burning low sulfur fuel oil.

J. Performance Testing

Initial (I) compliance tests shall be performed on the turbine using both fuels and on the auxiliary boiler using fuel oil. The stack test for the turbine and the auxiliary boiler shall be performed with the sources operating at capacity (maximum heat rate input for the tested operating temperature). Capacity is defined as 90 - 100 percent of permitted capacity. If it is impracticable to test at capacity, then sources may be tested at less than capacity; in this case subsequent source operation is limited to 110 percent of the test load until a new test is conducted. Once the unit is so limited, then operation at higher capacities is allowed for no more than fifteen consecutive days for purposes of

SPECIFIC CONDITIONS:

additional compliance testing to regain the rated capacity in the permit, with prior notification to the Department. Annual (A) compliance tests shall be performed on the turbine and the auxiliary boiler with the fuel(s) used for more than 400 hours in the preceding 12-month period. Tests for the applicable emission limitations shall be conducted using EPA reference methods in accordance with 40 CFR 60, Appendix A, as adopted by reference in Rule 17-297, F.A.C., and the requirements of 40 CFR 75:

1. Combustion Turbine

   a. Reference Method 5B for PM (I, A, for oil only).

   b. Reference Method 8 for sulfuric acid mist (I, for oil only).

   c. Reference Method 9 for VE (I, A).

   d. Reference Method 10 for CO (I, A).

   e. Reference Method 20 for NO_x (I, A).

   f. Reference Method 18 for VOC (I, A).

   g. Trace elements of Lead (Pb), Beryllium (Be) and Arsenic (As) shall be tested (I, for oil only) using Emission Measurement Technical Information Center (EMTIC) Interim Test Methods. As an alternative, Method 104 for Beryllium (Be) may be used; or Be and Pb may be determined from fuel analysis using either Method 7090 or 7091, and sample extraction using Method 3040 as described in the EPA solid waste regulations SW 846.

   h. ASTM D 2880-71 (or equivalent) for sulfur content of distillate oil (I,A).

   i. ASTM D 1072-80, D 3031-81, D 4084-82, or D 3246-81 for sulfur content of natural gas (I, and A if deemed necessary by DEP).

   j. Reference Method 22 for fugitive emissions (I,A).

2. Auxiliary Boiler

   a. Reference Method 9 of VE (I,A).

   b. ASTM D 2880-71 (or equivalent) for sulfur content of distillate oil (I,A).

SPECIFIC CONDITIONS:

c. Reference Methods 7, 7A, 7C, 7D, or 7E for NO_x (I,A).

Other DEP approved methods may be used for compliance testing after prior departmental approval.

K. Sulfur Content of Fuel

The maximum sulfur content of the low sulfur fuel oil shall not exceed 0.05 percent by weight. Compliance shall be demonstrated in accordance with the requirements of 40 CFR 60.334 by testing for sulfur content of the fuel oil in the storage tanks once per day when firing oil. Testing for fuel oil heating value, shall also be conducted on the same schedule.

L. Monitoring Requirements

A continuous emission monitoring system (CEMS) shall be installed, operated, and maintained in accordance with 40 CFR 60, Appendix F, for the combined cycle unit to monitor nitrogen oxides and a diluent gas (CO_2 or O_2). The applicant shall request that this condition of certification be amended to reflect the Federal Acid Rain Program requirements of 40 CFR 75 when those requirements become effective within the state.

1. Each CEMS shall meet performance specifications of 40 CFR 60, Appendix B.

2. CEMS data shall be recorded and reported in accordance with Chapter 17-297.500, F.A.C., 40 CFR 60 and 40 CFR 75. The record shall include periods of startup, shutdown, and malfunction.

3. A malfunction means any sudden and unavoidable failure of air pollution control equipment or process equipment to operate in a normal or usual manner. Failures that are caused entirely or in part by poor maintenance, careless operation or any other preventable upset condition or preventable equipment breakdown shall not be considered malfunctions.

4. The procedures under 40 CFR 60.13 shall be followed for installation, evaluation, and operation of all CEMS.

5. For purposes of the reports required under this permit, excess emissions are defined as any calculated average emission concentration, as determined pursuant to Specific Condition No. H.4. herein, which exceeds the applicable emission limits in Condition No. H.1.

SPECIFIC CONDITIONS:

M. Notification, Reporting and Recordkeeping

To determine compliance with the syngas and fuel oil firing heat input limitation, the permittee shall maintain daily records of syngas and fuel oil consumption for the turbine and the heating value for each fuel. All records shall be maintained for a minimum of two years after the date of each record and shall be made available to representatives of the Department upon request.

N. Applicable Requirements

The project shall comply with all the applicable requirements of Chapters 17-209 through 17-297, F.A.C., and 40 CFR 60 Subparts A and GG. The requirements shall include:

1. 40 CFR 60.7(a)(1) - By postmarking or delivering notification of the start of construction no more than 30 days after such date.

2. 40 CFR 60.7(a)(2) - By postmarking or delivering notification of the anticipated date of the initial startup of each turbine and the auxiliary boiler not more than 60 days nor less than 30 days prior to such date.

3. 40 CFR 60.7(a)(3) - By postmarking or delivering notification of the actual startup of each turbine and the auxiliary boiler within 15 days of such date.

4. 40 CFR 60.7(a)(5) - By postmarking or delivering notification of the date for demonstrating the CEMSs performance, no less than 30 days prior to such date.

5. 40 CFR 60.7(a)(6) - By postmarking or delivering notification of the anticipated date for conducting the opacity observations no less than 30 days prior to such date.

6. 40 CFR 60.7(b) - By initiating a recordkeeping system to record the occurrence and duration of any startup, shutdown or malfunction of a turbine and the auxiliary boiler, of the air pollution control equipment, and when the CEMS is inoperable.

7. 40 CFR 60.7(c) - By postmarking or delivering a quarterly excess emissions and monitoring system performance report within 30 days of the end of each calendar quarter. This report shall contain the information specified in 40 CFR 60.7(c) and (d).

8. 40 CFR 60.8(a) - By conducting all performance tests within 60 days after achieving the maximum turbine and boiler firing rates, but not more than 180 days after the initial startup of each turbine and the auxiliary boiler.

SPECIFIC CONDITIONS:

9. 40 CFR 60.8(d) - By postmarking or delivering notification of the date of each performance test required by this permit at least 30 days prior to the test date; and,

10. 17-297.345 - By providing stack sampling facilities for the combustion turbine and the auxiliary boiler.

All notifications and reports required by this specific condition shall be submitted to the Department's Air Program, within the Southwest District office. Performance test results shall be submitted within 45 days of completion of such test.

O. Submission of Reports

The following information shall be submitted to the Department's Bureau of Air Regulation within 12 months of issuance of this permit:

1. Description of the final selection of the turbine and the auxiliary boiler to be installed at the facility. Descriptions shall include the specific make and model numbers, any changes in the proposed method of operation, fuels, emissions or equipment.

2. Description of the CEMS selected. Description shall include the type of sensors, the manufacturer and model number of the equipment.

3. If construction has not commenced within 18 months of issuance of this permit, then the permittee shall obtain from DEP a review and, if necessary, a modification of the BACT determination and allowable emissions for the unit(s) on which construction has not commenced [40 CFR 52.21(r)(2)]. Units to be constructed or modified in later phases of the project will be reviewed and limitations revisited under the supplementary review process of the Power Plant Siting Act.

P. Protocols

The following protocols shall be submitted to the Department's Air Program, within the Southwest District office, for approval:

1. CEMS Protocol - Within 60 days of selection of the CEMS, but prior to the initial startup, a CEMS protocol describing the system, its installation, operating and maintenance characteristics and requirements. The Department shall approve the protocol provided that the system and the protocol meet the requirements of 40 CFR 60.13, 60.334, Appendix B and Appendix F. This condition of certification shall be amended to reflect the Federal Acid Rain Program requirements of 40 CFR 75 when those requirements become effective within the State.

SPECIFIC CONDITIONS:

2. Performance Test Protocol - At least 90 days prior to conducting the initial performance tests required by this permit, the permittee shall submit to the Department's Air Program, within the Southwest District office, a protocol outlining the procedures to be followed, the test methods and any differences between the reference methods and the test methods proposed to be used to verify compliance with the conditions of this permit. The Department shall approve the testing protocol provided that it meets the requirements of this permit.

Q. Modifications

The permittee shall give written notification to the Department when there is any modification to this facility. This notice shall be submitted sufficiently in advance of any critical date involved to allow sufficient time for review, discussion, and revision of plans, if necessary. Such notice shall include, but not be limited to, information describing the precise nature of the change; modifications to any emission control system; production capacity of the facility before and after the change; and the anticipated completion date of the change.

Issued this 24th day
of February, 1994

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION

Virginia B. Wetherell

Virginia B. Wetherell, Secretary

Best Available Control Technology (BACT) Determination
Tampa Electric Company

Polk County
PSD-FL-194
PA-92-32

The applicant is proposing to construct, in phases, a 1,150 MW power plant in Polk County. The proposed facilities will be known as the Tampa Electric Company Polk Power Station. The first phase will consist of an Integrated Coal Gasification Combined Cycle (IGCC) unit with heat recovery steam generator (HRSG) and steam turbine (ST) for a nominal net 260 MW IGCC unit. The coal-fueled advanced CT will be capable of baseload operations (i.e., 100 percent capacity factor) on syngas, while retaining the option to fire fuel oil as backup (maximum 10 percent capacity factor). Units proposed to be added at Polk Power Station include two combined cycle (CC) units totaling 440 MW (nominal) and six simple cycle (SC) CTs totaling 450 MW (nominal). All of these units will be fired with natural gas as the primary fuel and No. 2 fuel oil as backup. The phased schedule for construction and operation of the proposed generating units at the Polk Power Station is presented in Table 1.

Table 1

Proposed Schedule for Construction and Operation of Generating Units for ultimate capacity at the Polk Power Station Site

Activity/Unit	Start Construction	Completion/ In-Service
Advanced CT, CG & HRSG/ST for 260-MW IGCC unit[a]	First Half 1994	July 1995
75-MW CT	April 1998	January 1999
75-MW CT	April 1999	January 2000
HRSG/ST for conversion of two 75-MW CTs for 220-MW CC unit	April 2000	January 2001
75-MW CT	April 2001	January 2002
220-MW CC	April 2001	January 2003
75-MW CT	April 2005	January 2006
75-MW CT	April 2006	January 2007
75-MW CT	April 2007	January 2008
75-MW CT	April 2008	January 2009
75-MW CT	April 2009	January 2010

a - 220 MW when fired on fuel oil and operated in CC mode.

The IGCC unit will be supported in part through funding from the U.S. Department of Energy (DOE) under the Clean Coal Technology Demonstration Program. Under the program, the IGCC unit will be used to demonstrate the integration of coal gasification (CG) and CC technologies and to demonstrate a more efficient method for removal of sulfur from syngas. The new cleanup technology is called hot gas clean up (HGCU). Conventional methods for sulfur removal for IGCC units require that the gas be cooled prior to cleaning, called cold gas cleanup (CGCU), and then reheated. By comparison, the HGCU technology efficiently cleans the gas at high temperatures, thereby increasing the overall plant efficiency. Under the agreement with DOE, Tampa Electric Company will demonstrate the HGCU system for a 2-year period.

The projected maximum tonnage of regulated air pollutants emitted from the proposed facility based on a 100 percent capacity factor and 8,760 hours per year are shown in Table 2. A simplified flow chart for the operation of the IGCC systems at the site is attached (Figures 1 - 3).

Table 2

Projected Maximum Annual Emissions (tpy)
for ultimate site capacity

Pollutant	IGCC[a]	+	CC[b]	+	SC[c]	=	Total	Significance Rate (tpy)
PM (TSP)	399		260		246		905	25
PM (PM_{10})	399		260		246		905	15
SO_2	2469		720		654		3843	40
NO_x	2923		1308		1014		5245	40
CO	453		1092		978		2523	100
VOC	45		180		168		393	40
Pb	0.15		0.28		0.17		0.6	0.6
H_2SO_4	241		80		72		393	7
Fluorides	0.92		0.17		0.10		1.2	3
Hg	0.12		0.21		0.19		0.5	0.1
Be	0.007		0.013		0.008		0.03	0.0004
Total reduced sulfur (including H_2S)	6.2		0		0		6.2	10

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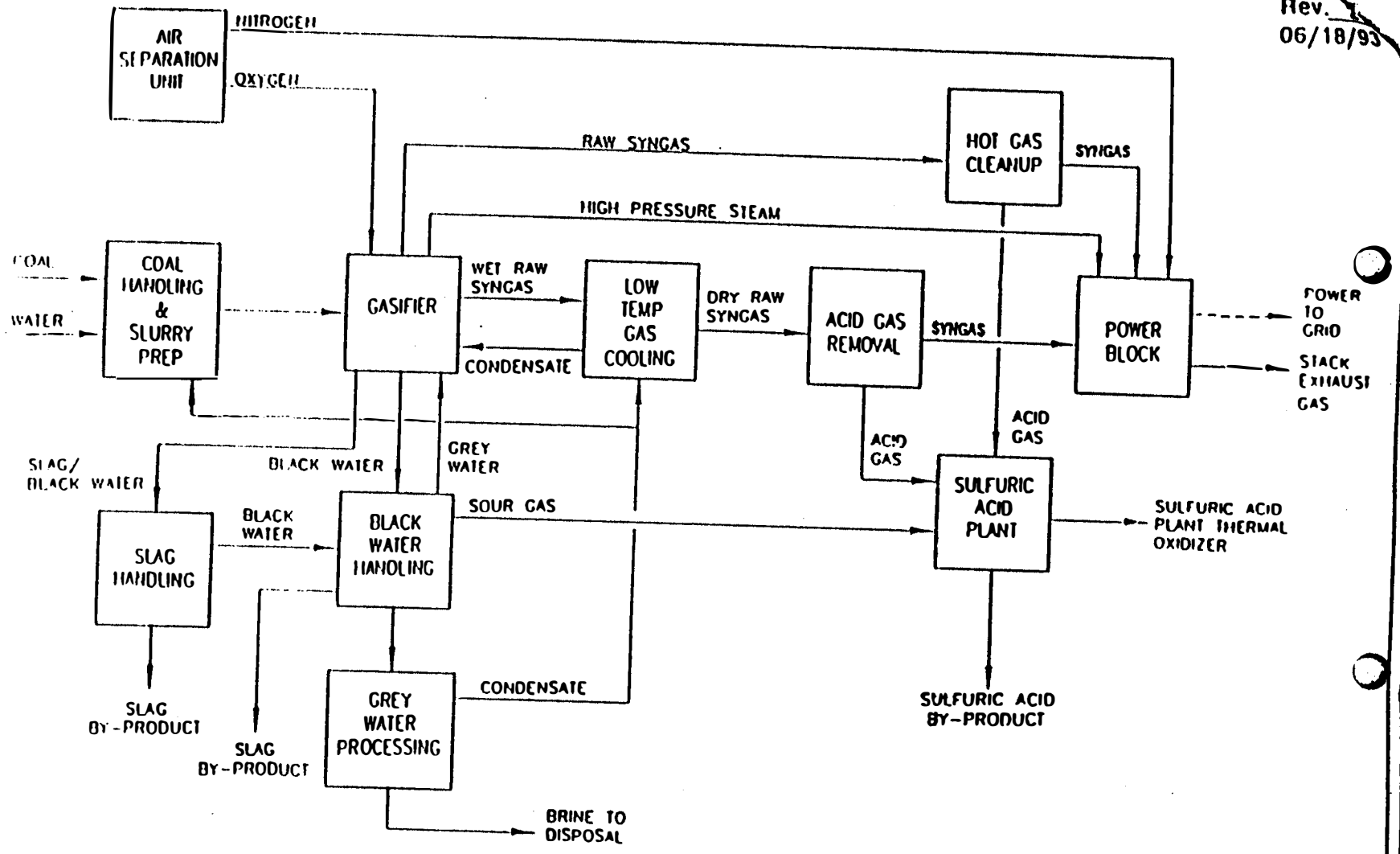

FIGURE 2-2.

GENERALIZED FLOW DIAGRAM OF IGCC SYSTEMS AND PROCESS

Source: ECT, 1993.

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

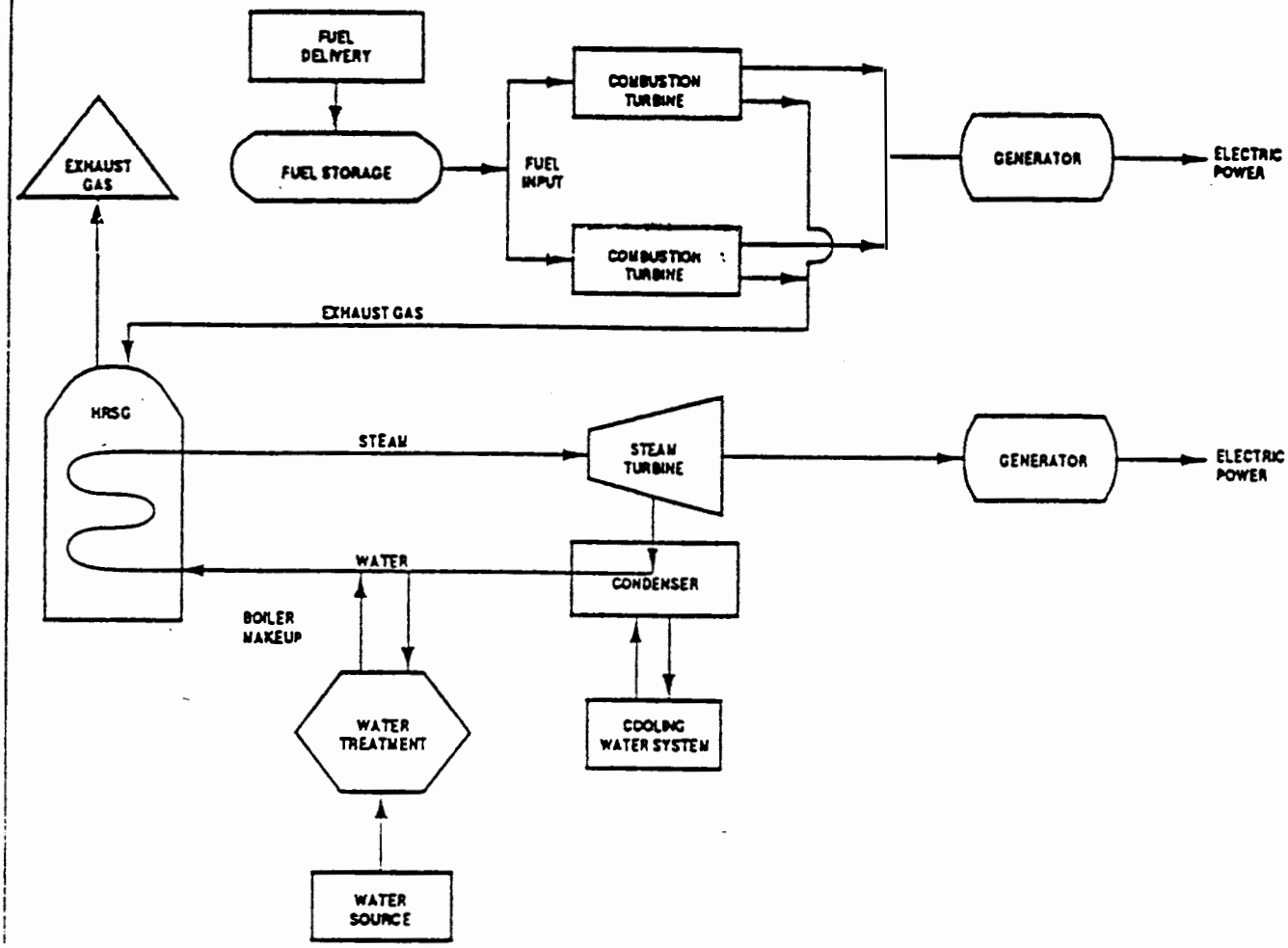

FIGURE 1.5.2-1.

SIMPLIFIED FLOW DIAGRAM OF COMBINED CYCLE POWER SYSTEM

Source: ECT, 1992.

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

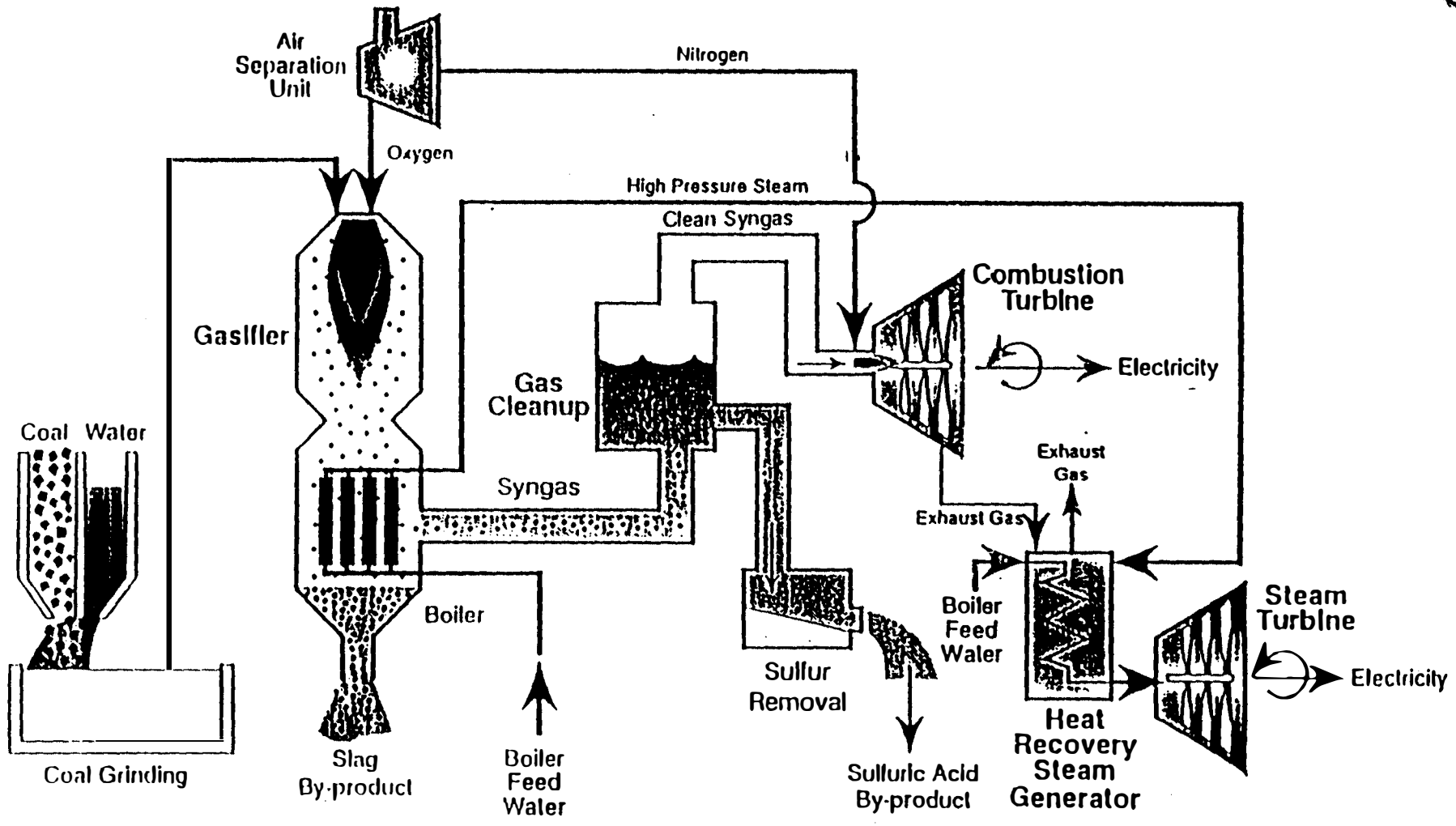

FIGURE 1.5.3-1.

SIMPLIFIED FLOW DIAGRAM OF INTEGRATED COAL GASIFICATION COMBINED CYCLE UNIT

Source: Texaco, 1992. Tampa Electric Company, 1992.

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

a - IGCC emissions include the highest annual emissions estimates from the 7F CT (based on the larger of 100 percent CGCU or 50/50 CGCU/HGCU), plus related combustion emissions (e.g., thermal oxidizer), plus other associated process and fugitive emissions (PM, CO, VOC, and H_2S).

b - CC emissions represent the totals for four stand-alone CTs in CC mode.

c - SC emission represent the totals for six stand-alone CTs in simple cycle mode.

The proposed facility will also include one 49.5 MMBtu/hr auxiliary boiler fired with low sulfur (0.05% or less by weight) distillate fuel oil. The auxiliary boiler will operate only during startup and shutdown of the IGCC unit, or when steam from the IGCC unit's HRSG is unavailable. The auxiliary boiler will operate a maximum of 1,000 hours per year.

The coal gasification facility will serve as a source of medium Btu, low sulfur (0.07% or less, by weight, sulfur bearing compounds) coal-derived gas. The coal used in the gasification facility will have a maximum sulfur content of 3.05% and have a minimum heating value of approximately 11,035 Btu/lb. The coal gasification plant will consist of coal receiving, storage and process facilities, air separation unit, gasifier, product gas cleaning facilities, acid gas removal unit, and auxiliary equipment. The coal gasification unit will have two stacks, one flare stack used during startup, shutdown and emergency conditions and one thermal oxidation unit stack which will be used continuously.

The applicant has indicated the maximum tonnage of regulated air pollutants emitted from the IGCC unit CT during the initial phase, demonstration and post demonstration periods to be as shown in Table 3.

Table 3

Maximum Annual Emissions from IGCC Unit CT for Various Operating Configurations

Pollutant	Demonstration Period (tpy)[a]	Post-Demonstration Period (tpy)[b]
PM[c]	74.5	74.5
SO_2	2,269	1,564
NO_x	2,908	1,044
CO	430	430
VOC	38.5	38.5

H_2SO_4	241	241
Pb	0.13	0.067
Fluorides	0.92	0.92
Hg	0.11	0.017
Be	0.0029	0.0029

a - Based on baseload operations firing syngas, with a maximum of 8,760 hr/yr utilization of HGCU and up to 10 percent annual capacity factor firing fuel oil.
b - Based on baseload operations firing syngas, with emission rates equivalent to 100 percent CGCU operations; up to 10 percent annual capacity factor firing fuel oil.
c - Excluding sulfuric acid mist.

Florida Administrative Code Rule 17-212.400 requires a BACT review for all regulated pollutants emitted in an amount equal to or greater than the significant emission rates listed in Table 1.

Date of Receipt of A BACT Application

September 21, 1992

BACT Determination Requested by the Applicant

Combined Cycle Units

Pollutant	Determination
NO_x	9 ppmvd (NG) 25 ppmvd (Syngas firing) 42 ppmvd (No. 2 fuel oil firing)
SO_2	Firing of NG or Syngas Fuel oil with a maximum sulfur content of 0.05 % by weight, 0.048 lb/MMBtu
CO	Combustion control 25 ppmvd (NG) 40 ppmvd (No. 2 fuel oil firing) 25 ppmvd (Syngas firing)
VOC	Combustion control 7 ppmvd (NG) 7 ppmvd (No. 2 fuel oil firing) 1 ppmvd (Syngas firing)

Particulates	Good combustion, and type of fuels fired
Pb	Good combustion, and type of fuels fired
H_2SO_4	Firing of NG, Syngas and No. 2 fuel oil
Be	Firing of NG, Syngas and No. 2 fuel oil
AS	Firing of NG, Syngas and No. 2 fuel oil

Coal Gasification Plant

Raw Product Gas

Pollutant	Control Technology
Sulfur	Acid Gas Removal (95.6%)
Particulates	Water scrubbing

The raw product gas is fired in the combined cycle combustion turbine units and emissions of product gas are included in the BACT determination for those units.

CG Emission (Thermal Oxidizer)

Pollutant	Control Technology
SO_2	Fuel oil firing with a sulfur content not to exceed 0.05% by weight. (45.3 lb/hr)
NO_x	Combustion controls
CO	Combustion controls
Pb	Efficient Operation
H_2SO_4	Efficient Operation
Mercury	Efficient Operation
Beryllium	Efficient Operation
Inorganic Arsenic	Efficient Operation

	Materials Handling and Storage
Fugitive Dust Source	Control Technology
Coal Unloading	Enclosed - including a Collection System
Conveyers and Transfer Points (Coal, Slag)	Transfer points enclosed with Collection System. Conveyers enclosed
Coal Storage and Reclaiming	Crusting Agent Application Wet Suppression Systems or Crusting Agents Surfactant Application[1]
Fuel Oil Storage	Bottom Loaded/Submerged Filling
	Auxiliary Boiler
NO_x	Low NOx Burners and Combustion Controls, limited operation[2] (0.159 lb/MMBtu)
SO_2	Fuel oil firing with a sulfur content not to exceed 0.05 % by weight, and limited operation (0.053 lb/MMBtu)
CO	Combustion Controls (0.087 lb/MMBtu)
VOC	Combustion Controls (0.0485 lb/MMBtu)
Particulates	Combustion Controls (0.061 lb/MMBtu)
Pb	Combustion Controls
Mercury	Combustion Controls
Beryllium	Combustion Controls
Inorganic Arsenic	Combustion Controls

1 - Total Coal Handling Sources PM Emissions are 11.2 tpy
2 - Maximum of 1000 hours of operation per year

Annual pollutant emissions are shown in Table 2 for all sources. Pollutant emission rates are listed in the section entitled "BACT Determination by DEP".

Flare Stacks

This source did not propose a BACT since its operation is expected to be infrequent (startup and shutdown, and emergencies).

BACT Determination Procedure

In accordance with Florida Administrative Code Chapter 17-296, Stationary Sources - Emission Standards, this BACT determination is based on the maximum degree of reduction of each pollutant emitted which the Department, on a case-by-case basis, taking into account energy, environmental and economic impacts, and other costs, determines is achievable through application of production processes and available methods, systems, and techniques. In addition, the regulations state that in making the BACT determination the Department shall give consideration to:

(a) Any Environmental Protection Agency determination of Best Available Control Technology pursuant to Section 169, and any emission limitation contained in 40 CFR Part 60 (Standards of Performance for New Stationary Sources) or 40 CFR Part 61 (National Emission Standards for Hazardous Air Pollutants).

(b) All scientific, engineering, and technical material and other information available to the Department.

(c) The emission limiting standards or BACT determinations of any other state.

(d) The social and economic impact of the application of such technology.

The EPA currently stresses that BACT should be determined using the "top-down" approach. The first step in this approach is to determine for the emission source in question the most stringent control available for a similar or identical source or source category. If it is shown that this level of control is technically or economically infeasible for the source in question, then the next most stringent level of control is determined and similarly evaluated. This process continues until the BACT level under consideration cannot be eliminated by any substantial or unique technical, environmental, or economic objections.

The air pollutant emissions from combined cycle power plants and coal fired power plants can be grouped into categories based upon what control equipment and techniques are available to control emissions from these facilities. Using this approach, the emissions can be classified as follows:

- Combustion Products (Particulates and Heavy Metals). Controlled generally by good combustion of clean fuels and/or fabric filters.
- Products of Incomplete Combustion (CO, VOC, Toxic Organic Compounds). Control is largely achieved by proper combustion techniques.
- Acid Gases (SOx, NOx, HCL, Fl). Controlled generally by gaseous control devices.

Grouping the pollutants in this manner facilitates the BACT analysis because it enables the equipment available to control the type or group of pollutants emitted and the corresponding energy, economic, and environmental impacts to be examined on a common basis. Although all of the pollutants addressed in the BACT analysis may be subject to a specific emission limiting standard as a result of PSD review, the control of "nonregulated" air pollutants is considered in imposing a more stringent BACT limit on a "regulated" pollutant (i.e., particulates, sulfur dioxide, fluorides, sulfuric acid mist, etc.), if a reduction in "nonregulated" air pollutants can be directly attributed to the control device selected as BACT for the abatement of the "regulated" pollutants.

Combustion Products

The IGCC facility's projected emissions for combustion products (Particulate Matter (PM) and trace heavy metals) exceed the significant emission rates given in Florida Administrative Code Rule 17-212.410, Table 212.400-2. A review of the BACT/LAER Clearinghouse indicates that the proposed PM/PM_{10} emission level of 0.013 lbs/MMBtu (excluding H_2SO_4) for syngas for the IGCC unit is consistent with the particulate limit for recent determinations of coal fired boilers. The applicant proposed PM/PM_{10} emission level of 0.009 lbs/MMBtu for No. 2 oil firing for the IGCC unit is consistent with previous BACT determinations in Florida.

In general, the BACT/LAER Clearinghouse does not contain specific emission limits for beryllium, mercury and arsenic from turbines. BACT for heavy metals is typically represented by the level of particulate control. The emission factors for PM/PM_{10} when firing the IGCC with syngas and No. 2 fuel oil are judged to represent BACT for beryllium, arsenic and mercury.

PM/PM_{10} emissions are controlled for the auxiliary boiler by firing with No. 2 fuel oil with a sulfur concentration not to exceed 0.05%, by weight. This fuel sulfur level is consistent with recent BACT determinations for similar facilities.

Products of Incomplete Combustion

The emissions of carbon monoxide, volatile organic compounds and other organics from combustion turbines are largely dependent upon the completeness of combustion and the type of fuel used. The applicant has indicated that the carbon monoxide emissions from the proposed turbines are based on exhaust concentrations of 25 ppmvd for syngas and 30 ppmvd for No. 2 fuel oil. Volatile organic compound emissions have been based on exhaust concentrations of 7 and 1 ppmvd for fuel oil firing and syngas, respectively.

A review of the BACT/LAER clearinghouse indicates that several of the largest combustion turbines (those with heat inputs greater that 1,000 MMBtu/hour) have been permitted with CO limitations which are similar to those proposed by the applicant. For VOC, the clearinghouse also indicates that the proposed emissions are consistent with that established for other turbines of similar size, thereby suggesting that the proposed emission levels for both CO and VOC are reasonable. Although the majority of BACT emissions limitations have been based on combustion controls for carbon monoxide and volatile organic compounds minimization, additional control is achievable through the use of catalytic oxidation.

Catalytic oxidation is a post-combustion control that has been employed in CO nonattainment areas where regulations have required CO emission levels to be less than those associated with wet injection for NO_x control. These installations have been required to utilize LAER technology, and typically have CO limits in the 10 ppm range (corrected to dry conditions).

In an oxidation catalyst control system, CO emissions are reduced by allowing unburned CO to react with oxygen at the surface of a precious metal catalyst such as platinum. Combustion of CO starts at about 300°F, with efficiencies above 90 percent occurring at temperatures above 600°F. Catalytic oxidation occurs at temperatures 50 percent lower than that of thermal oxidation, thereby reducing the amount of thermal energy required compared to thermal oxidation. For CC combustion turbines, the oxidation catalyst can be located directly after the CT or in the HRSG. Catalyst size depends upon the exhaust flow, temperature and desired efficiency. Most gas turbine applications have been limited to smaller cogeneration facilities burning natural gas in nonattainment areas.

The application of oxidation catalyst is not being required as BACT for the IGCC unit due to high content of sulfur in the fuel. Syngas fuel which will be utilized at 100 percent capacity factor contains up to 0.07% by weight sulfur content. These sulfur compounds are oxidized to SO_2 in the combustion process and will be further oxidized by the catalyst to sulfur trioxide (SO_3). SO_3 will, in turn, combine with moisture in the gas stream to form H_2SO_4 mist. Therefore, the use of an oxidation catalyst system for the IGCC unit is not BACT due to corrosion problems.

Acid Gases - Sulfur Dioxide

The emissions of sulfur dioxide, nitrogen oxides, fluorides, and sulfuric acid mist, as well as other acid gases which are not "regulated" under the PSD Rule, represent a significant proportion of the total emissions and need to be controlled if deemed appropriate. Sulfur dioxide emissions from combustion turbines are directly related to the sulfur content of the fuel being combusted.

The IGCC facility's projected emissions for SO_2 exceed the significant emission rates given in Florida Administrative Code Rule 17-212.410, Table 212.400-2. A review of the BACT/LAER Clearinghouse indicates that the proposed post-demonstration SO_2 emission level of 0.17 lbs/MMBtu for syngas is consistent with the SO_2 limit for recent determinations of coal fired boilers.

For the IGCC combustion turbine, the applicant has proposed the use of Syngas, No. 2 fuel oil with a maximum sulfur content of 0.05%, by weight, and coal gasification to control sulfur dioxide emissions. In accordance with the "top down" BACT review approach, only two alternatives exist that would result in more stringent SO_2 emissions. These include the use of a lower sulfur content syngas and fuel oil or the use of wet lime or limestone-based scrubbers, otherwise known as flue gas desulfurization (FGD).

In developing the NSPS for stationary gas turbines, EPA recognized that FGD technology was inappropriate to apply to these combustion units. EPA acknowledged in the preamble of the proposed NSPS that "Due to the high volumes of exhaust gases, the cost of flue gas desulfurization (FGD) to control SO_2 emissions from stationary gas turbines is considered unreasonable." EPA reinforced this point when, later on in the preamble, they stated that "FGD... would cost about two to three times as much as the gas turbine." The economic impact of applying FGD today would be no different.

Furthermore, the application of FGD would have negative environmental and energy impacts. Sludge would be generated that would have to be disposed of properly, and there would be increased utility (electricity and water) costs associated with the operation

of a FGD system. Finally, there is no information in the literature to indicate that FGD has ever been applied to stationary gas turbines burning distillate oil.

Coal gasification sulfur content is controlled through fuel-production process controls. Sulfur removal stages in the coal gasification process include acid gas removal, and sulfuric acid plant thermal oxidizer. Acid gas removal systems remove hydrogen sulfide, carbonyl sulfide and carbon dioxide from the fuel gas using an acid gas absorbent solution. The acid gases are stripped from the adsorbent solution and sent to the sulfuric acid plant for introduction into a thermal oxidizer, where the remaining sulfur compounds are converted to SO_2, and finally converted to commercial grade liquid H_2SO_4. The overall sulfur removal efficiency is 95.6%. The sulfur bearing compounds content of the syngas is reduced to 0.07% by weight, or less.

The elimination of flue gas control as a BACT option then leaves the use of NG, CG with the sulfur removal process or low sulfur coal as the options to be investigated. The applicant has proposed the use of syngas, CG with sulfur removal or No. 2 fuel oil (maximum of 876 hours per year per IGCC combustion turbine) with a maximum sulfur content of 0.05%, by weight, as BACT for this project.

Although the applicant's proposed coal gasification acid gas cleanup process is an existing technology, development is continuing on coal gasification systems. The data base to determine whether the proposed post-demonstration sulfur bearing compounds level of 0.07% by weight is reasonable for a coal gasification facility with resulting proposed emissions of 0.17 lbs/MMBtu is limited. A commercial scale demonstration of an IGCC 100 MW power plant has been conducted adjacent to Southern California Edison's Cool Water generating station. During the Cool Water demonstration project, high sulfur coals, Illinois #6 and Pittsburgh #8, with a sulfur content of about 3.1 percent were tested. The SO_2 emission rate was 0.11 lbs/MMBtu for the Pittsburgh #8 coal and was even lower for the Illinois #6 coal (Technical Brief, Cool Water Coal Gasification Program: Commercial Scale Demonstration of IGCC Technology Completed, Electric Power Research Institute). The Polk Power Station IGCC unit has been designed for a larger capacity and is expected to be capable of using coals from various sources not included in the Cool Water demonstration project tests. Although, emission rates from the Cool Water tests are representative of the SO_2 emission range that can be achieved using IGCC units, the study was conducted as a demonstration project and the unit was later converted to another fuel source.

The Polk Power Station IGCC coal gasification system includes an option for both cold gas and hot gas cleanup and emissions from the Cool Water demonstration project are not directly comparable to the hot gas cleanup system. However, an objective of the hot gas cleanup system test is to demonstrate the efficiency in decreasing sulfur emissions compared to cold gas cleanup system.

Acid Gases - Nitrogen Oxides

The applicant has stated that BACT for nitrogen oxides for the IGCC unit will be met by using nitrogen diluent injection to limit emissions to 25 ppmvd at 15% oxygen when burning syngas, and water injection to achieve 42 ppmvd at 15% oxygen when burning No. 2 fuel oil. The emission limit of 25 ppmvd when burning syngas is higher compared to 9 ppmvd when burning NG in a combustion turbine due to the difference in composition and heat content between the two fuels. In contrast to natural gas which is predominately methane, syngas is composed of a variety of constituents including CO, hydrogen, CO_2, nitrogen, and water. The combustible components of syngas are primarily CO and hydrogen instead of methane. CO and hydrogen burn at a higher adiabatic flame temperature than methane and therefore can produce approximately three times as much NO_x as natural gas.

A review of EPA's BACT/LAER Clearinghouse indicates that the lowest NO_x emission limit established to date for a combustion turbine is 4.5 ppmvd at 15 percent oxygen. This level of control was accomplished through the use of water injection and a selective catalytic reduction (SCR) system. The two 25 MW combustion turbines are located in Kern County, California and the degree of control at this facility exceeds BACT requirements.

Selective catalytic reduction is a post-combustion method for control of NO_x emissions. The SCR process combines vaporized ammonia with NO_x in the presence of a catalyst to form nitrogen and water. The vaporized ammonia is injected into the exhaust gases prior to passage through the catalyst bed.

The applicant has indicated that the cost effectiveness for the application of SCR technology to the Polk Power Station IGCC project was determined to be $4,935 per ton of NO_x removed for a 50% reduction of NO_x concentration from 25 ppmvd to 12.5 ppmvd. The cost impact analysis was conducted using the OAQPS factors and project-specific economic factors. An assessment of economics impacts was performed by comparing control costs between a baseline case of advanced combustion and nitrogen injection and baseline technology with the addition of SCR controls. Baseline technology is expected to achieve NO_x exhaust concentrations of 25 and 42 ppmvd at 15% oxygen for syngas and oil-firing, respectively. Based

on Japanese experience, SCR technology was premised to achieve NO_x concentration of 12.5 and 21 ppmvd at 15% oxygen for syngas and oil-firing, respectively, representing a 50% NO_x removal efficiency.

Since SCR has been determined to be BACT for several combined cycle facilities firing natural gas, the EPA has clearly stated that there must be unique circumstances to consider the rejection of such control on the basis of economics. In a recent letter from EPA Region IV to the Department regarding the permitting of a combined cycle facility (Tropicana Products Inc.), the following statement is made:

"In order to reject a control option on the basis of economic considerations, the applicant must show why the costs associated with the control are significantly higher for this specific project than for other similar projects that have installed this control system or in general for controlling the pollutant."

The auxiliary boiler is expected to operate 1,000 hours per year or less. The applicant is proposing to control SO_2 and acid gas emissions by firing with No. 2 fuel oil with a sulfur content of 0.05% or less, by weight, and by using combustion controls. Therefore, limited operation and low sulfur distillate oil represents BACT for the auxiliary boiler.

H_2SO_4 Plant Thermal Oxidizer

The predominant emission from the thermal oxidizer is sulfur dioxide. The sulfur dioxide emissions proposed for the facility are based on the highest removal efficiency that is now being maintained at other coal gasification facilities. This is accomplished by using an acid gas removal system followed by a sulfuric plant thermal oxidizer. This process is capable of providing an overall sulfur removal rate of 95.6 percent.

Fugitive Sources

The applicant has indicated that fugitive particulate emissions may result from the storage and handling of coal, slag, and sulfur. BACT for controlling these activities is good engineering design and practices. Control measures shall include the following:

- Minimize number of material transfer points
- Apply crusting agent application to inactive storage areas
- Enclose conveyers and transfer points
- Provide induced collection systems for dust

- Provide wet suppression systems (surfactant)
- Cover by-product storage areas (upon completion of cell)
- Handle and store sulfur in a molten or continuous crystalline state

A review of the control strategy indicates that the applicant has proposed taking all reasonable measures to minimize fugitive particulate emissions.

Environmental Impact Analysis

The predominant environmental impacts associated with this proposal are related to the use of SCR for NO_x control. The use of SCR results in emissions of ammonia, which may increase with increasing levels of NO_x control. In addition, some catalysts may contain substances which are listed as hazardous waste, thereby creating an additional environmental burden. Although the use of SCR does have some environmental impacts, the disadvantages do not outweigh the benefit which would be provided by reducing nitrogen oxide emissions by 50 percent. The benefits of NO_x control by using SCR is substantiated by the fact that a number of BACT determinations have established SCR as the control measure for nitrogen oxides over the last five years for combustion turbines.

In addition to the criteria pollutants, the impacts of toxic pollutants associated with the combustion of syngas and No. 2 fuel oil have been evaluated. Beryllium and Mercury exceeds the PSD significant level. Other toxics are expected to be emitted in minimal amounts, with the total emissions combined to be less than one ton per year.

Although the emissions of the toxic pollutants could be controlled by particulate control devices such as a baghouse or scrubber, the amount of emission reductions would not warrant the added expense for firing with natural gas or fuel oil. Therefore, the Department does not believe that the BACT determination would be affected by the emissions of the toxic pollutants associated with the firing of syngas or No. 2 fuel oil.

Potentially Sensitive Concerns

With regard to controlling NOx emissions from SCR the applicant has expressed concerns regarding SCR catalyst deactivation due to poisoning, oxidation of SO2 to SO3, formation of H2SO4, formation of ammonium bisulfate and ammonium sulfate, risk due to potential leaks from storage of NH3 and disposal of spent catalyst which may be considered hazardous.

A review of permitting activities for combined cycle proposals across the nation indicates that SCR has been required or proposed for installations with a variety of operating conditions including firing with fuel oil. SCR also has been accepted as BACT for boilers fired with pulverized coal. Although the concerns expressed by the applicant were valid at one time, the most recent experiences indicate that these problems have been resolved through advances in catalysts and experiences gained in operation.

BACT Determination by DEP

1. Combustion Products - PM/PM_{10} (excluding H_2SO_4)

During the two year demonstration period for the IGCC unit at the Polk Power Station, the applicant's proposed PM/PM10 emission limit of 0.013 lb/MMBtu is accepted for IGCC hot cleanup testing conducted under the Cooperative agreement with the US DOE.

For IGCC operation following the 2-year demonstration period particulate emissions control for the IGCC unit will be limited to 0.013 lb/MMBtu.

2. Products of Incomplete Combustion - CO and VOC

The use of an oxidation catalyst system for the IGCC system is not found to be BACT due to the high sulfur content in the syngas and resulting corrosion problems. Emissions are to be controlled by good combustion practices during demonstration and post demonstration periods.

3. Acid Gases - Sulfur Dioxides

During the 2-year demonstration period for the IGCC unit at the Polk Power Station, the applicant's proposed SO_2 emissions limit of 0.247 lbs/MMBtu is accepted for IGCC demonstration testing conducted under the Cooperative Agreement with the US DOE. The proposed emissions limit will allow for testing of coals with a broad range of sulfur content and for evaluation of the IGCC unit design.

For IGCC operations following the demonstration period, SO_2 emissions shall not exceed the 0.17 lbs/MMBtu limit established in a recent BACT determination for the Indiantown Cogeneration facility.

The SO_2 emissions shall be limited to 0.17 lbs/MMBtu for the IGCC unit by the use of low sulfur coal and the integral IGCC sulfur removal and recovery processes.

Acid Gases - Nitrogen Oxides

The annualized cost per ton for NO_x removal of $4,935 for the IGCC SCR estimated by the applicant exceeds recent estimates for other applications. Recent published estimates for a pulverized coal plant (Selective Catalytic Reduction for a 460 MW coal fueled unit: Overview of a NO_x Reduction System Selection, EPRI, 1993) with a NO_x reduction of 47 percent was $3,265 per ton in 1997 dollars. Costs per ton in this range indicate SCR is a reasonable alternative. However, there are significant differences between a pulverized coal-fired power plant and an IGCC unit in the design and operation of SCR NO_x control systems.

Due to the uncertainty in actual system performance and high cost of a SCR control system, NO_x BACT for the IGCC CT will be determined following a data collection period. After the demonstration phase, NO_x emission testing will be conducted on the CT every two months over a 12 to 18 month period. Test results will be provided to the Department within thirty (30) days after each test is performed. During the test period, the CT shall be operated to achieve the lowest possible NO_x emission rate and shall not exceed 25 ppmvd NO_x corrected to 15 percent oxygen and ISO conditions. This concentration limitation, equivalent to an emission rate of 0.099 lb NO_x/MMBtu, is 42 percent lower than rates recently established as BACT for other pulverized coal-fired power plant applications. One month after the test period ends, the applicant will submit a recommended BACT determination for NO_x using the test results, data obtained from other similar facilities, and research conducted by the CT manufacturer. The Department will then make a BACT determination for NO_x only and adjust the NO_x emission limits as appropriate.

The emission limits for the IGCC unit for firing with syngas and No. 2 fuel oil for the Polk Power Station are thereby established as follows:

Pollutant	Emission Limitations - 7F CT							
	IGCC Post Demonstration				IGCC 2-year Demonstration			
	Fuel	Basis	lb/hr	tpy[a]	Fuel	Basis	lb/hr	tpy[b]
NO_x	Oil	42 ppmvd[f]	311	N/A	Oil	42 ppmvd	311	N/A
	Syngas	25 ppmvd[f]	222.5	1,044	Syngas	81 ppmvd	664.2	2,908.3
VOC[c]	Oil	0.028 lb/MMBtu	32	N/A	Oil	0.028 lb/MMBtu	32	N/A
	Syngas	0.0017 lb/MMBtu	3	38.5	Syngas	0.0017 lb/MMBtu	3	38.5
CO	Oil	40 ppmvd	99	N/A	Oil	40 ppmvd	99	N/A
	Syngas	25 ppmvd	98	430.1	Syngas	25 ppmvd	99	430.1
PM/PM_{10}[d]	Oil	0.009 lb/MMBtu	17	N/A	Oil	0.009 lb/MMBtu	17	N/A
	Syngas	0.013 lb/MMBtu	17	74.5	Syngas	0.013 lb/MMBtu	17	74.5
Pb	Oil	5.30E-5 lb/MMBtu	0.101	N/A	Oil	5.30E-5 lb/MMBtu	0.101	N/A
	Syngas	2.41E-6 lb/MMBtu	0.0035	0.067	Syngas	1.10E-5 lb/MMBtu	0.023	0.13
SO_2	Oil[e]	0.048 lb/MMBtu	92.2	N/A	Oil	0.048 lb/MMBtu	92.2	N/A
	Syngas	0.17 lb/MMBtu	357	1563.7	Syngas	0.247 lb/MMBtu	518	2,269

NOTES: a - Based on baseload operations firing syngas, with emission rates equivalent to 100 percent CGCU operations; up to 10 percent annual capacity factor firing fuel oil.

b - Based on baseload operations firing syngas, with a maximum of 8760 hrs/yr utilization of HGCU operations; up to 10 percent annual capacity factor firing fuel oil.

c - Exclusive of background concentrations.

d - Excluding sulfuric acid mist.

e - Sulfur dioxide emissions based on a maximum of 0.05 percent sulfur, by weight.

f - ppmvd at 15% O_2 and ISO conditions.

Auxiliary Boiler

For the auxiliary boiler, BACT will be represented by a limitation on hours of operation and the use of clean fuel (maximum 1,000 hours per year firing No. 2 fuel oil with 0.05% sulfur, by weight).

H_2SO_4 Plant Thermal Oxidizer

A review of the proposed emission rates for the thermal oxidizer indicates that equipment in and of itself represents BACT for these sources.

Fugitive Sources

A review of the control strategy indicates that the applicant has proposed taking all reasonable measures to minimize fugitive particulate emissions and is representative of BACT.

Details of the Analysis May be Obtained by Contacting:
Doug Outlaw, P.E., BACT Coordinator
Department of Environmental Protection
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Recommended by:

C. H. Fancy, P.E., Chief
Bureau of Air Regulation

February 18 1994
Date

Approved by:

Virginia B. Wetherell, Secretary
Dept. of Environmental Protection

February 24 1994
Date

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January 13, 1994

VIA HAND DELIVERY

Mr. Clair Fancy
State of Florida Department
of Environmental Protection
111 South Magnolia Courtyard
Suite 4
Tallahassee, Florida 32399-2400

Re: Polk Power Station; Affidavits of Publication of Notice of Intent to Issue PSD Permit (PSD-FL-194)

Dear Mr. Fancy

Attached are copies of the Affidavits of Publication from the Lakeland Ledger, the Tampa Tribune, and the Mulberry Press relating to the Department's Notice of Intent to Issue the above referenced PSD permit to Tampa Electric Company.

Please give me a call if you have any questions.

Sincerely,

HOLLAND & KNIGHT

Samuel J. Morley

Attachments
SJM/mrh
TAL-38029

cc w/att:
Sayed Arif (via hand delivery)
Lawrence N. Curtin
Richard Donelan
Buck Oven
Tom Davis
Jewell Harper

AFFIDAVIT OF PUBLICATION

THE LEDGER

Lakeland, Polk County, Florida

Case No.....

STATE OF FLORIDA)
COUNTY OF POLK)

Before the undersigned authority personally appeared Tharon Honeycutt, who on oath says that he is Controller of The Ledger, a daily newspaper published at Lakeland in Polk County, Florida; that the attached copy of advertisement, being a

Notice of intent to issue permit

in the matter of

PSD-FL-194

in the

Court, was published in said newspaper in the issues of

January 3,

1994

Affiant further says that said The Ledger is a newspaper published at Lakeland, in said Polk County, Florida, and that the said newspaper has heretofore been continuously published in said Polk County, Florida, daily, and has been entered as second class matter at the post office in Lakeland, in said Polk County, Florida, for a period of one year next preceding the first publication of the attached copy of advertisement; and affiant further says that he has neither paid nor promised any person, firm or corporation any discount, rebate, commission or refund for the purpose of securing this advertisement for publication in the said newspaper.

Signed .....
Controller

by Tharon Honeycutt who is personally known to me.

Sworn to and subscribed before me this 3rd day of January A.D. 19 1994

BILLIE L. MORLAN
NOTARY COMMISSION # CC 191364
EXPIRES: April 6, 1998
Bonded Thru Notary Public Underwriters

Billie L. Morlan
Notary Public

My Commission Expires BILLIE MORLAN

Holland & Knight
Acct #12610

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
NOTICE OF INTENT TO ISSUE PERMIT

The Department of Environmental Protection gives notice of its intent to issue a PSD permit (PSD-FL-194) to Tampa Electric Company, located 13 miles south of Bartow, Polk County, Florida, to construct a 260 MW integrated coal gasification combined cycle facility. A determination of Best Available Control Technology (BACT) was required. The total PSD increments consumed by all sources, including this facility, in the Class I and II areas are:

Class I Area Parameter	Averaging Period	Total PSD Impact From All Sources (ug/m3)	Class I PSD Increment (ug/m3)	Increment Consumed (%)
SO2	3-hour	12.9	25	52
	24-hour	3.8	5	76
	Annual	0.4	2	20
NO2	Annual	0.8	2.5	32
PM	24-hour	5.7	10	57
	Annual	1.1	5	22

Class II Area Parameter	Averaging Period	Total PSD Impact From All Sources (ug/m3)	Class II PSD Increment (ug/m3)	Increment Consumed (%)
SO2	3-hour	104	512	20
	24-hour	27	91	30
	Annual	0	20	0
NO2	Annual	3.3	25	13
PM	24-hour	31.8	37	86
	Annual	5.4	19	28

The Department is issuing this intent to issue for the reasons stated in the Technical Evaluation and Preliminary Determination.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Blair Stone Road, Tallahassee, Florida 32399-2400, within 14 days of publication of this notice. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, Florida Statutes.

The Petition shall contain the following information: (a) The name, address, and telephone number of each petitioner; the applicant's name and address, the Department Permit File Number and the county in which the project is proposed; (b) A statement of how and when each petitioner received notice of the Department's action or proposed action; (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action; (d) A statement of the material facts disputed by Petitioner, if any; (e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and (g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this Notice. Persons whose substantial interests will be affected by any decision of the Department with regard to the application have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of publication of this notice in the Office of General Counsel of the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, F.A.C.

The application is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Department of Environmental Protection
Bureau of Air Regulation
111 S. Magnolia Park Courtyard
Tallahassee, Florida 32301
Department of Environmental Protection
Southwest District
3804 Coconut Palm Drive
Tampa, Florida 33619-8218

Any person may send written comments on the proposed action to Mr. Preston Lewis of the Department's Tallahassee address. All comments received within 30 days of the publication of this notice will be considered in the Department's final determination.

Further, a public hearing can be requested by any person(s). Such requests must be submitted within 30 days of this notice.

D-93 -- 1-3: 1994

D-93

THE TAMPA TRIBUNE
Published Daily
Tampa, Hillsborough County, Florida

State of Florida
County of Hillsborough } ss.

Before the undersigned authority personally appeared R. Putney, who on oath says that he is Accounting Manager of The Tampa Tribune, a daily newspaper published at Tampa in Hillsborough County, Florida; that the attached copy of advertisement being a

LEGAL NOTICE POLK

in the matter of

STATE OF FLORIDA

was published in said newspaper in the issues of

DECEMBER 27, 1993

Affiant further says that the said The Tampa Tribune is a newspaper published at Tampa in said Hillsborough County, Florida, and that the said newspaper has heretofore been continuously published in said Hillsborough County, Florida, each day and has been entered as second class mail matter at the post office in Tampa, in said Hillsborough County, Florida, for a period of one year next preceding the first publication of the attached copy of advertisement; and affiant further says that he has neither paid nor promised any person, firm, or corporation any discount, rebate, commission or refund for the purpose of securing this advertisement for publication in the said newspaper.

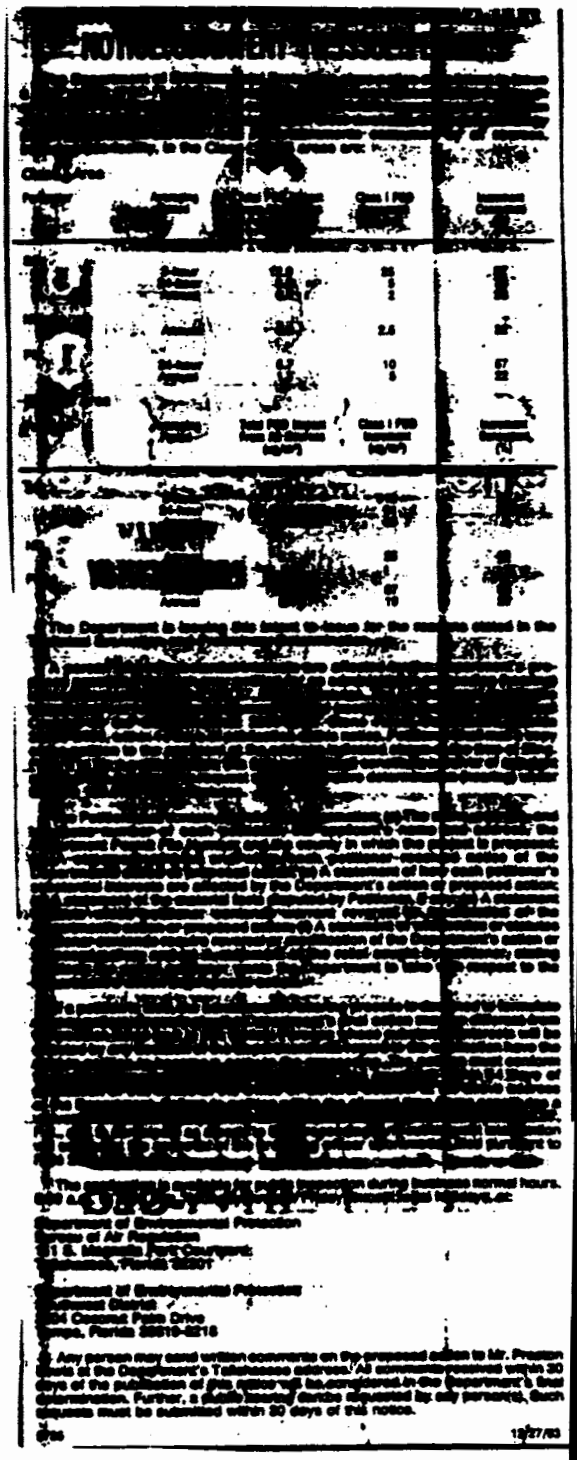
R. Putney

Sworn to and subscribed before me, this 27 *day of* DECEMBER *A.D. 19* 93

Personally Known ____ *or Produced Identification* ____

Type of Identification Produced ____

(SEAL) [illegible]



The Department is issuing this intent to issue for the reasons stated in the

Department of Environmental Protection
Bureau of Air Regulation
111 S. Magnolia Drive, Suite 4
Tallahassee, Florida 32301

Department of Environmental Protection
Southwest District
3804 Coconut Palm Drive
Tampa, Florida 33619-8218

Any person may send written comments on the proposed action to Mr. Preston [illegible] of the Department's Tallahassee address. All comments received within 30 days of the publication of this notice will be considered in the Department's final determination. Further, a public hearing may be requested by any person(s). Such requests must be submitted within 30 days of this notice.

12/27/93

LEGAL NOTICE

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
NOTICE OF [illegible] PERMIT

The Department of Environmental Protection gives notice of its intent to issue a PSD permit (PSD-FL-194) to Tampa Electric Company, located 13 miles south of Bartow, Polk County, Florida, to construct a 260 MW [illegible] coal gasification combined cycle facility. A determination of Best Available Control Technology (BACT) was required. The total PSD increments consumed by all sources, including this facility, in the Class I and II areas are:

Class I Area

Parameter	Averaging Period	Total PSD Impact From All Sources (μg/m³)	Class I PSD Increment (μg/m³)	Increment Consumed (%)
SO_2	3-hour	12.9	25	52
	24-hour	3.8	5	76
	Annual	0.4	2	20
NO_2	Annual	0.8	2.5	32
PM	24-hour	5.7	10	57
	Annual	1.4	5	22

Class II Area

Parameter	Averaging Period	Total PSD Impact From All Sources (μg/m³)	Class II PSD Increment (μg/m³)	Increment Consumed (%)
SO_2	3-hour	104	512	20
	24-hour	27	91	30
	Annual	0	20	0
NO_2	Annual	[illegible]	25	13
PM	24-hour	31.8	37	86
	[illegible]	[illegible]	[illegible]	28

filed (received) in the [illegible]
Tallahassee, Florida [illegible] 14 days of publication of this notice. [illegible]
a copy of the petition to [illegible]
[illegible] waiver of any right [illegible]
to request an administrative [illegible] Section 120.57 [illegible]

The Petition shall [illegible] information (a) The name [illegible]
number of each petitioner [illegible] Department [illegible]
and the county in which [illegible] statement of how [illegible]
received notice of the [illegible]

[illegible]

[illegible] Notice [illegible] affected by [illegible] of the Department with regard to the application have the right to petition to [illegible] proceeding. The petition must conform to the requirements specified [illegible] and be filed (received) within 14 days of publication of this notice in the Office of [illegible]. Failure to petition within the allowed [illegible] Section 120.57, F.S. [illegible]

[illegible] normal [illegible] except legal holidays, at:

Department of Environmental Protection
Bureau of Air Regulation
[illegible]
[illegible] Florida 32301

[illegible] Environmental Protection
[illegible]

[illegible]

Any person may send written comments on the proposed action to Mr. Preston Lewis at the Department's Tallahassee address. All comments received within 30 days of the publication of this notice will be considered in the Department's final determination.

Further, a public hearing can be requested by any person(s). [illegible] requests should be submitted within 30 days of this notice.

TAL-36966

Published Mulberry Press, Mulberry, Florida December 30, 1993

at Mulberry, Florida

MULBERRY PRESS

Area's legal newspaper since 1909
Phone 813-425-3411

Press Building
1020 N. Church Ave.
(Hwy. 37-N)
Mulberry, Florida
33860-2040

Mulberry, Polk County, Florida
Published Every Thursday

Published Weekly

Mulberry, Polk County, Florida

Case No. ..... Docket ..... Page No. .....

STATE OF FLORIDA
COUNTY OF POLK } as.

Before the undersigned authority personally appeared .....
William M. Histed, who on oath says that he is
Publisher of the Mulberry Press, a newspaper published at
Mulberry, in Polk County, Florida; that the attached copy of advertisement,
being a Public Legal Notice
in the matter of State of Florida Department of
Environmental Protection Notice of Intent
in the ..... Court, was published in said newspaper in the
issues of December 30, 1993

Affiant further says that the MULBERRY PRESS is a newspaper published at Mulberry, in said Polk County, Florida, and that said newspaper has heretofore been continuously published in said Polk County, Florida, each Thursday, and has been entered as second class matter at the post office in Mulberry, in said Polk County, Florida, for a period of one year next preceding the first publication of the attached copy of advertisement, and affiant further says that he as neither paid nor promised any person, firm, or corporation any discount, rebate, commission, or refund for the purpose of securing this advertisement for publication in said newspaper.

Signed William M. Histed
William M. Histed

Sworn to and subscribed before me this 4th day of Jan. 19 94 by
WILLIAM M. HISTED who is personally known to
me or who has produced ..... as
identification.

Carole M. Histed
Carole M. Histed Notary Public

My commission Expires:

NOTARY PUBLIC STATE OF FLORIDA
My Comm Exp. 5/27/97

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

JAN 26 1994

4APT-AEB

Clair H. Fancy, P.E., Chief
Bureau of Air Regulation
Florida Department of Environmental
Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

SUBJ: Tampa Electric Company, Polk County, Florida (PSD-FL-194)

Dear Mr. Fancy:

This is to acknowledge receipt of your technical evaluation, preliminary determination, and draft Prevention of Significant Deterioration (PSD) permit for the above referenced facility by your letter dated December 20, 1993. Tampa Electric Company (TECO) proposes to construct and operate a 1,150 MW power plant consisting of an integrated coal gasification combined-cycle (IGCC) facility, two additional combined-cycle (CC) units, and six simple-cycle combustion turbines (CTs) fueled primarily by natural gas. As discussed between Mr. Syed Arif of your staff and Mr. Stan Kukier of my staff on January 24, 1994, we have reviewed the package as submitted and have no adverse comments.

We agree that the use of low sulfur coal and the integral sulfur removal and recovery processes can be considered BACT for control of IGCC facility sulfur dioxide and acid gas emissions. Good combustion practices are considered BACT for control of CO and VOC emissions from the IGCC facility, CC units, and CTs. Use of clean, low ash fuels, and good combustion techniques are also considered BACT for particulate emissions from all combustion units. We also agree that dry low-NO_x burners and water injection are representative of BACT for NO_x emissions from the CC units and CTs. The Florida Department of Environmental Protection will make a BACT determination for IGCC facility combustion turbine NO_x emissions based on the results of NO_x emission testing. NO_x emission testing will be performed on the IGCC facility combustion turbine every two months over a twelve to eighteen month period.

We also agree that wet suppression methods, enclosing coal unloading, conveyor, and transfer points, and applying both crusting agents and surfactants, are representative of BACT for control of fugitive particulate emissions from coal storage and reclaiming operations.

Mr. Arif has indicated that the air quality analysis concerns have been addressed satisfactory.

Thank you for the opportunity to comment on this package. If you have any questions, please contact Mr. Stan Kukier of my staff at (404) 347-5014.

Sincerely yours,

Jewell A. Harper, Chief
Air Enforcement Branch
Air, Pesticides, and Toxics
Management Division

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

OCT 26 1993

4APT-AEB

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Virginia B. Wetherell
Secretary
Florida Department of Environmental
Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

RE: Notice of Full Delegation of PSD Permitting Authority for Power Plants

Dear Ms. Wetherell:

This is in response to your letter of September 27, 1993, requesting that the Environmental Protection Agency (EPA) grant full delegation of permitting authority for sources subject to both the federal Prevention of Significant Deterioration (PSD) regulations and the Florida Electrical Power Plant Siting Act (PPSA), §403.501 et seq., Florida Statutes (1991).

We have reviewed the pertinent laws of the State of Florida and the rules and regulations thereof, and have determined that they provide an adequate and effective procedure for full implementation of the PSD program by the State of Florida.

In 1985, EPA and the Florida Department of Environmental Regulation (FDER) recognized that Florida's original PSD State Implementation Plan (SIP) submittal and EPA's subsequent 1983 conditional SIP-approval for PSD did not apply to sources subject to the PPSA since the PPSA's Site Certification Board was, by State law, the sole permit-issuing authority for power plants in Florida. Accordingly, for power plants subject to the PPSA, the full delegation of PSD authority under which FDER had been operating since 1983 was revoked on November 5, 1985, and Florida was given partial delegation to conduct the technical and administrative portion of the federal PSD program. At that time, EPA resumed final PSD permit issuance and enforcement authority for PPSA sources only.

On July 1, 1986, the Florida Legislature amended the PPSA in an effort to extricate the implementation of PSD regulations and allow FDER to issue PSD permits to sources subject to the PPSA. On its face, the 1986 PPSA amendment appeared to provide FDER with authority to fully implement (i.e. issue and enforce) federal PSD regulations for sources subject to the PPSA. Thus, on September 25, 1986, EPA restored full PSD delegation authority to Florida for these sources.

A State appellate court decision in TECO Power Services Corp. v. Florida Department of Environmental Regulation, First DCA Case No. 91-300, December 20, 1991, declared that the 1986 PPSA amendment does not confer on FDER authority to issue a federally-enforceable PSD permit containing conditions which differ from those imposed by the PPSA Siting Board. The practical effect of the TECO decision was to render ineffective the 1986 PPSA amendment and to require, in the absence of further PPSA amendments, that EPA resume final permitting and enforcement authority over PSD permits for new PPSA sources. Consequently, by letter dated August 7, 1992, EPA revoked full delegation of PSD authority for power plants in Florida and returned to the partial delegation agreement outlined in the November 5, 1985, letter which granted the State the authority to implement the technical and administrative portions of the PSD program for PPSA sources.

Your letter presents amendments to the PPSA which took effect on April 22, 1993. These amendments expressly provide that the "[D]epartment's action on a federally required new source review or prevention of significant deterioration permit shall differ from the actions taken by the siting board regarding the certification if the federally approved state implementation plan requires such a different action to be taken by the department. Nothing in this part [the PPSA] shall be construed to displace the department's authority as the final permitting entity under the federally approved permit program." EPA has determined that the current PPSA statute gives the State the appropriate authority to issue and enforce PSD permits to sources subject to the PPSA.

We have determined that the procedures for new source review by the State of Florida provide an adequate and effective procedure for the implementation of the PSD program for the sources described above. Therefore, pursuant to 40 C.F.R. Subpart A (General Provisions), 40 C.F.R. §52.06 (Legal Authority), and 40 C.F.R. §52.21(u) (Delegation of Authority), we hereby delegate our authority for all portions of the Federal PSD program, as described in 40 C.F.R. §52.21, to the State of Florida for

sources subject to review under the PPSA located or to be located in the State of Florida and subject to review under the federal regulations for PSD, promulgated at 40 C.F.R. §52.21 as follows:

A. EPA delegates its authority for the review of all sources which are subject to or reviewed under the Electrical Power Plant Siting Act located or to be located in the State of Florida and subject to review under federal regulations for the Prevention of Significant Air Quality Deterioration, promulgated in 40 C.F.R. §52.21.

B. EPA delegates to the State of Florida its authority and procedures for technical review and evaluation of new sources and public participation pursuant to 40 C.F.R. §124.3-124.14, and its authority under 40 C.F.R. §124.15-124.19 to take final action on an application.

C. For purposes of and in accordance with paragraph B above, the State of Florida shall follow the procedures in 40 C.F.R. §§124.3-124.19, except that the word "Director" and the phrase "Regional Administrator" shall mean "State Director." A copy of the State's preliminary determination, a copy of all materials submitted by the owner or operator of the source seeking the PSD permit, a copy or summary of the materials (if any) considered by the State in making its preliminary determination, and a copy of the notice shall be sent to the EPA Regional Office immediately upon issuance of a preliminary determination. Immediately upon issuance of a final determination, the state shall forward a copy of the final determination and final permit to the EPA Regional Office.

D. This delegation is based upon the following conditions:

1. Quarterly reports containing pertinent information relating to the status of sources subject to 40 C.F.R. §52.21 (or other reports as required by the Regional Administrator) will be submitted to EPA by the State of Florida as part of the existing reports normally submitted to EPA through program plan reporting.
2. In accomplishing the delegated PSD review, the State of Florida will apply all applicable federal air permitting rules and follow the applicable federal permit processing procedures. If at any time it is determined that the state rules or statutes prohibit the Department from applying any such standard or procedure, the pertinent portion of the delegation may be revoked.

3. If the Regional Administrator determines that the state procedure for implementing the PSD program is inadequate, or is not being effectively carried out, this delegation may be revoked in whole or in part. Any such revocation shall be effective as of the date specified in a Notice of Revocation to the Florida Department of Environmental Protection.

4. Acceptance of this delegation of presently promulgated PSD regulations (40 C.F.R. §52.21, as amended 02/03/92) does not commit the State of Florida to accept responsibility for new federal standards or requirements promulgated after the effective date of this delegation.

5. Public availability of information shall be in accordance with 40 C.F.R. §52.21(q).

6. Enforcement of PSD in the State of Florida will be the primary responsibility of the Department of Environmental Protection. If the State determines that such enforcement is not feasible and so notifies EPA, or where the State acts in a manner inconsistent with the terms of this granted authority, EPA will exercise its concurrent enforcement authority pursuant to Sections 113 and 167 of the Clean Air Act, as amended, with respect to sources within the State of Florida subject to PSD requirements. In accordance with 40 C.F.R. 52.21(s) and Sections 113 and 167 of the Clean Air Act, 42 U.S.C. 7413 and 7477, the Environmental Protection Agency reserves the right to commence an enforcement action against any entity in violation of Prevention of Significant Deterioration should the State of Florida fail to take such an enforcement action or, in the opinion of EPA, fail to pursue a timely or appropriate enforcement action.

7. The State of Florida will ensure, through its interstate intergovernmental cooperation procedures, that all potential source interactions along State boundaries are properly determined.

The State and EPA will develop a system of communication sufficient to guarantee a program that includes the items described below:

A. Each agency is informed of the current compliance status of subject sources in the State of Florida consistent with the State/EPA Enforcement Agreement.

B. Prior EPA concurrence is obtained on any matter involving interpretation of 40 C.F.R. §52.21 (including unique questions of applicability of the standards).

This delegation of authority should not be construed as a transfer of PSD responsibility under Section 110(a)(2)(J) of the Clean Air Act, as amended. As you are aware, such transfer involves different procedures and considerations.

A notice announcing the granting of the full delegation of PSD authority to the State will be published in the Federal Register in the near future. The notice will state, among other things, that effective immediately, all reports required pursuant to PSD regulations by covered sources located in or to be located in the State of Florida should be submitted to the Bureau of Air Regulation, Department of Environmental Protection, Twin Towers Office Building, 2600 Blair Stone Road, Tallahassee, Florida, 32399-2400.

Since the delegation of authority is effective immediately, there is no requirement that the State notify EPA of its acceptance. Unless EPA receives from the State written notice of objections within ten (10) days of receipt of this letter, the State will be deemed to have accepted all of the terms of the delegation.

Sincerely yours,

Patrick Tobin

Patrick Tobin
Acting Regional Administrator

APPENDIX E

U.S. Department of Energy

- DOE NOI and Associated Correspondence
- DOE Policy of Reasonable Alternatives

DOE NOI and Associated Correspondence

Recordkeepers: 0.
Burden Hours: 0.

Abstract: This collection will be used to sample the private school universe to produce early estimates of the universe characteristics. The Department will use the information to build an NCES universe frame of private schools that is of sufficient accuracy and completeness to serve as a sampling frame for NCES surveys of private schools. The Department will also use the survey to generate annual data on the total number of private schools, teachers, and students.

[FR Doc. 92-17712 Filed 7-27-92; 8:45 am]
BILLING CODE 4000-1-M

[CFDA No.: 84.073C]

National Diffusion Network Program—New State Facilitator Project Notice Inviting applications for a new award for fiscal year (FY) 1993

Purpose of Program: To provide a grant to disseminate exemplary education programs within Ohio. This program supports AMERICA 2000, the President's strategy for moving the Nation toward the National Education Goals, by making current information about exemplary programs available to educators.

Note: Under the State Facilitator Projects program, the Secretary makes an award in each State. In FY 1992, the Secretary made new awards for a State Facilitator project in each State except Ohio.

Eligible Applicants: Any public or nonprofit private agency, organization, or institution located in Ohio may apply for the State Facilitator award.

Deadline for Transmittal of Applications: September 8, 1992.

Deadline for Intergovernmental Review: November 6, 1992.

Applications Available: July 30, 1992.

Available Funds: The Administration estimates that $208,000 will be available for this project for FY 1993. However, the actual level of funding is contingent upon final congressional action.

Estimated Range of Award: $158,500–208,000.

Estimated Average Size of Award: $183,000.

Estimated Number of Awards: One.

Note. The Department is not bound by any estimate in this notice.

Project Period. Up to 42 months.

Applicable Regulations: (a) The Education Department General Administrative Regulations (EDGAR) in 34 CFR parts 74, 75, 77, 79, 80, 81, 82, 85 and 86; (b) the regulations under 34 CFR part 98 (Student Rights in Research, Experimental Activities, and Testing); and (c) the regulations for this program in 34 CFR parts 785 and 788.

For Applications or Information Contact: Ms. Helen O'Leary, U.S. Department of Education, 555 New Jersey Avenue, NW., room 510, Washington, DC 20208-5645. Telephone: (202) 219-2139. Deaf and hearing impaired individuals may call the Federal Dual Party Relay Service at 1-800-877-8339 (in the Washington, DC 202 area code, telephone 708-9300) between 8 a.m. and 7 p.m., Eastern time.

Program Authority: 20 U.S.C. 2982.

Dated: July 22, 1992.

Diane Ravitch,

Assistant Secretary for Educational Research and Improvement.

[FR Doc. 92-17711 Filed 7-27-92; 8:45 am]
BILLING CODE 4000-01-M

DEPARTMENT OF ENERGY

Intent To Prepare an Environmental Impact Statement and Conduct a Public Scoping Meeting for the Proposed Tampa Electric Coal-Fired Integrated Gasification Combined Cycle Project

AGENCY: U.S. Department of Energy (DOE).

ACTION: Notice of Intent (NOI) to prepare an Environmental Impact Statement (EIS) to assess the environmental effects of the construction and operation of the proposed coal-fired Integrated Gasification Combined Cycle (IGCC) power plant and associated transmission lines at a Tampa Electric Company (TECO) site in Polk County, Florida, and to conduct a public scoping meeting.

SUMMARY: DOE announces its intent to prepare an EIS pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended, to evaluate the environmental impacts of the proposed construction and operation of a project proposed by TECO. The Region IV Office of the U.S. Environmental Protection Agency (EPA) has requested "Cooperating Agency" status because of their responsibilities pursuant to the Clean Water Act and the likelihood that the proposed project would require a National Pollutant Discharge Elimination System (NPDES) permit.

The proposed project involves the construction and operation of a new coal-fired nominal 260-megawatt electric (MWe) (approximately 1900 tons per day) IGCC power plant and associated transmission lines in Polk County, Florida. TECO is the utility servicing the area. DOE is proposing to provide cost-shared financial assistance for the project. However, no EPA financing is involved in the project.

Preparation of the EIS will be in accordance with NEPA, the Council on Environmental Quality (CEQ) NEPA regulations (40 CFR parts 1500–1508), and the DOE regulations for compliance with NEPA (57 FR 15122, April 24, 1992). The purpose of this notice is to invite public participation in the process that DOE will follow to comply with NEPA and to solicit public comments on the proposed scope and content of the EIS.

INVITATION TO COMMENT AND DATES: To ensure that the full range of issues related to this proposal are addressed, DOE invites comments on the proposed scope and content of the EIS from all interested parties. Written comments or suggestions to assist DOE in identifying significant environmental issues and the appropriate scope of the EIS will be considered in preparing the draft EIS and should be postmarked by Thursday, August 27, 1992. Written comments postmarked after that date will be considered to the degree practicable.

DOE will also hold a public scoping meeting at which agencies, organizations, and the general public are invited to present oral comments or suggestions with regard to the range of actions, alternatives, and impacts to be considered in the EIS. The location, date, and time for the scoping meeting are provided in the section of this notice entitled Scoping Meeting. Written and oral comments will be given equal weight and will be considered in determining the scope of the draft EIS. When the draft EIS is completed, its availability will be announced in the Federal Register, and public comments will again be solicited. Comments on the draft EIS will be considered in preparing the final EIS. Requests for copies of the draft and/or final EIS, or questions concerning the project, should be sent to Mr. Bruce J. Buvinger at the address noted below.

ADDRESSES: Written comments or suggestions on the scope of the EIS, requests to speak at the scoping meeting, or questions concerning the project, should be directed to: Mr. Bruce J. Buvinger, Environmental Specialist, U.S. Department of Energy, Morgantown Energy Technology Center (METC), P.O. Box 880, Morgantown, WV 26507-0880, telephone: (304) 291-4379. Envelopes should be labeled "Scoping for TECO EIS."

FOR FURTHER INFORMATION CONTACT: For general information on the EIS

process, please contact: Ms. Carol M. Borgstrom, Director, Office of NEPA Oversight (EH-25), U.S. Department of Energy, 1000 Independence Avenue, SW., Washington, DC 20585, Tel. (202) 586-4600 or (800) 472-2756.

SUPPLEMENTARY INFORMATION:

Background and Need for the Proposed Action

Under terms of Public Law No. 100-446, Congress provided approximately $575 million to DOE to support the construction and operation of demonstration facilities selected for cost-shared financial assistance as part of DOE's Clean Coal Technology (CCT) Demonstration Program. The CCT projects cover a broad spectrum of technologies having the following in common:

(1) All are intended to increase the use of coal in an environmentally acceptable manner, and

(2) All are ready to be proven at the demonstration scale.

On May 1, 1989, DOE issued Program Opportunity Notice (PON) Number DE-PS01-89FE61825 for Round III of the CCT program, soliciting proposals to conduct cost-shared projects to demonstrate innovative, energy efficient, economically competitive technologies. These technologies must be capable of: (1) Achieving significant reductions in the emissions of sulfur dioxide and/or the oxides of nitrogen from existing facilities to minimize environmental impacts such as transboundary and interstate pollution and/or (2) providing for future energy needs in an environmentally acceptable manner. The PON provided that candidate technologies must be capable of either retrofitting or repowering existing facilities. Such existing facilities currently may be designed to use any fuel (e.g., coal, oil, gas, etc.) and may be either stationary (e.g., power plants) or mobile (e.g., transportation applications). The demonstration projects, however, can be at new facilities, provided the technology is capable of retrofitting or repowering applications. In response to the solicitation, 48 proposals were received.

From these 48 proposals, thirteen projects were selected by DOE for negotiation in December 1989, including a project proposed by CRSS Capital Inc., and TECO Power Services Corp., known as the Air-Blown IGCC Demonstration Project. After selection, CRSS Capital and TECO formed a partnership entity called Clean Power Cogeneration, Inc. (CPC). At that time, the proposed project site was the City of Tallahassee, Florida's, Arvah B. Hopkins power station. DOE published a **Federal Register** NOI for the CPC project on March 7, 1991 (56 FR 9691). However, uncertainties regarding the project resulted in the publication of a notice of postponement of the scoping meeting (April 26, 1991; 56 FR 19345).

In September, 1991, the site of the proposed project was relocated to Polk County, Florida. Additionally, the CPC Limited Partnership was restructured. CRSS Capital has ceased its participation in the project, and TECO has assumed all of CRSS Capital's previous obligations.

TECO has requested financial assistance from DOE for the design, construction, and demonstration of an approximately 1900 tons-per-day (nominal 260 MWe) IGCC plant. The proposed project would occupy about one-third of the 4348-acre site in west-central Florida, in the southwestern corner of Polk County, approximately 28 miles southeast of Tampa. Much of the site and surrounding region in this part of Florida has been used for phosphate mining, which is still continuing in this area. The proposed IGCC project would be fueled with medium- to high-sulfur content eastern bituminous coal to produce electric power for the utility grid. Cost, environmental, and technical data from the protect would be developed for use by the utility industry in evaluating this technology as a commercially viable power generation alternative. After the anticipated 24-month Federally-assisted demonstration period of operation, TECO intends to continue operating the plant commercially to meet customer needs for power.

Proposed Action

The proposed Federal action is for DOE to provide cost-shared financial assistance to TECO for the construction and operation of the IGCC Project. The objective of the project is to demonstrate the integration of technologically advanced subsystems, including a gasifier, gas turbine, steam boiler/turbine, and a hot gas cleanup system, to produce power in an efficient, economical, and environmentally sound manner. In addition, TECO would install a cold gas cleanup system which could be operated in parallel with the hot gas cleanup system. DOE will not share in costs associated with the cold gas cleanup system. The estimated cost-shared portion of the proposed demonstration project is approximately $242 million, of which DOE's share would be 50 percent. The total estimated cost for TECO's entire project, including aspects associated with cold gas cleanup design, construction and operation, is $640 million. The project would last approximately 84 months, including design, construction, and demonstration. Construction would commence in January 1994; however, no DOE funds would be provided for construction until the NEPA process has been completed. Operation of the project during the anticipated 24-month demonstration period would provide the information and experience needed for future applications and commercialization of the IGCC technology. Once DOE's involvement is completed, TECO intends to continue operating the plant.

The TECO site is located in southwestern Polk County, Florida, about 17 miles south of the City of Lakeland, 11 miles south of the City of Mulberry, 11 miles west of Fort Meade, and 13 miles southwest of the City of Bartow. The site consists of 4,348 acres, and is bounded by the Hillsborough County line along the western boundary Fort Green Road (County Road 663) on the east; portions of County Road 630, Bethlehem Road, and Albritton Road on the north; and State Road 674 and several phosphate mine settling ponds on the south. State Road 37 bisects the site, running in a southwest-northeast direction. In general, lands surrounding the site and in the region have been used for previous and ongoing surface phosphate mining operations. The portion of the property to the east of State Road 37 consists primarily of unreclaimed land from previous phosphate mines. The areas west of State Road 37 is currently being mined for phosphate, and these operations are scheduled to continue into 1994.

The proposed coal-fired IGCC Projec would occupy approximately one-third of the existing 4,348 acre site and would include the following facilities:

- A handling system to receive, store crush, and convey coal.
- A gasifier that converts solid coal into coal gas to be used as a fuel in a combustion (gas) turbine.
- An air separation unit which produces 95% pure oxygen to use in the gasifier.
- A Hot Gas Cleanup (HGCU) Syste that will remove sulfur from the coal gas at high temperatures.
- A parallel Cold Gas Cleanup (CGCU) System that will remove sulfur from the coal gas at lower temperature
- A combustion turbine to burn the clean coal gas and generate electricity.
- A Heat Recovery Steam Generator (HRSG) to make steam.
- A steam turbine that generates electricity from steam.

• A stack to handle exhaust gases produced by combustion of the coal gas.

The proposed project would require the construction of two short transmission lines to tie into TECO's existing 230 kilovolt (kV) system. A northern transmission line corridor would extend about 5 miles north of the site, running through rural and phosphate mining areas. An eastern transmission line corridor would be approximately one mile long and would lie within the proposed site.

Alternatives

Under its authori y pursuant to Public Law No. 100-446, DOE is presented with only two alternatives: (1) To cooperatively fund the proposed project; and (2) to decline to fund it (the "no action" alternative). In the latter case, the project would not contribute to the objective of the CCT program, which is to make available to the U.S. energy marketplace a number of advanced, more efficient, economically feasible, and environmentally acceptable, coal technologies. The facility probably would not be constructed and operated; therefore, neither potential environmental impacts related to facility construction and operation, nor potential environmental benefits resulting from commercialization of the technology, would occur.

DOE acknowledges the obligation to examine reasonable alternatives which are beyond its immediate authority to implement, but which could also meet the objectives of the CCT Program. DOE is requesting public comment on reasonable alternatives to the TECO IGCC Demonstration Project.

A Final Programmatic Environmental Impact Statement (PEIS) for the CCT Program was issued by DOE in November 1989 (DOE/EIS-0146). Two alternatives were evaluated in the PEIS:

(1) The "no action" alternative, which assumed that the CCT Program was not continued and that conventional coal-fired technologies with flue gas desulfurization and oxides of nitrogen controls to meet New Source Performance Standards would continue to be used; and

(2) The proposed action, which assumed that CCT projects were selected and funded, and that successfully demonstrated technologies would undergo widespread commercialization by the year 2010.

Identification of Environmental Issues

The following issues associated with the construction and operation of the proposed TECO Project will be considered in detail by DOE during its evaluation. This list is neither intended to be all inclusive, nor is it a predetermination of potential impacts. Additions to or deletions from this list may occur as a result of the scoping process.

(1) *Air Quality:* The effects of air emissions within the region surrounding the site.

(2) *Water Resources and Water Quality:* The qualitative and quantitative effects on water resources and other water users in the region.

(3) *Floodplains:* The 100-year floodplain for the pre-mining condition has been documented by the Federal Emergency Management Agency. The vast majority of the floodplain areas on-site have been mined and generally are not longer connected to the stream drainage basins. The main plant site area would be developed at elevations well above the 100-year flood stage. After development and reclamation of the site and project construction, no facilities will be located in areas subject to the 100-year flood.

(4) *Wetlands:* The majority of the site and adjacent properties have been disturbed through past and current mining operations. The site would be reclaimed in accordance with Florida Department of Natural Resources requirements to restore equivalent acreages of wetland habitat that existed prior to mining. If required, formal wetland jurisdictional determinations by both state and federal agencies would be conducted on-site for wetland areas which may be affected by the project.

(5) *Socioeconomics:* Potential bearing on communities that might be affected by the project.

(6) *Land Use:* The potential consequences to land, utilities, transportation routes, and traffic patterns resulting from the project.

(7) *Solid Waste:* The environmental effects of generation, treatment, transport, storage, and disposal of solid wastes.

(8) *Biological Resources:* There are several federally endangered, threatened, or candidate species which are either present or poten ial present on the site. Potential disturbance or destruction of species, including the potential effects on threatened or endangered species of flora and fauna will be evaluated.

(9) *Cultural Resources:* Potential effects on historical, archaeological, scientific, or culturally important sites.

(10) *Cumulative Impacts:* CEQ NEPA regulations require that the EIS evaluate the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. Cumulative impacts will be evaluated within the EIS for all important issues in the vicinity of the site. DOE currently is aware of several energy-related facilities proposed for the vicinity of the TECO project, including TECO's plans for additional capacity at the site of the proposed project.

Issues that are significant will be addressed in detail; issues that are not significant will be discussed in less detail, or as appropriate to clarify and distingu among alternatives.

NEPA and the Scoping Process

DOE will comply with the NEPA process as outlined in the Council on Environmental Quality's Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act (40 CFR part 1500-1508) and DOE's regulations for compliance with NEPA (57 FR 15122, April 24, 1992).

Scoping, which is an integral part of the NEPA process, is a procedure that solicits public input to the EIS process to ensure that: (1) Issues are identified early and properly studied; (2) issues of little significance do not consume time and effort; (3) the draft EIS is through and balanced; and (4) delays occasioned by an inadequate draft EIS are avoided (40 CFR 1501.7) DOE's NEPA Guidelines require that the scoping process commence as soon as practicable after a decision has been reached to prepare an EIS in order to provide an early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action. The scope of issues to be addressed in a Draft EIS will be determined, in part, from written comments submitted by mail, and comments prosented orally or in writing at public scoping meetings (see below). The results of the scoping process will be incorporated into a document called an Implementation Plan (IP), which provides guidance for the preparation of an EIS.

The above preliminary identification of reasonable alternatives and environmental issues is not meant to be exhaustive or final. DOE identified the reasonable alternatives and potential environmental issues shown above based on its experience with similar subjects that have been raised for other comparable DOE projects. DOE considers the scoping process to be open and dynamic in the sense that alternatives other than those given

above may warrant examination, and new matters may be identified for potential evaluation. The scoping process will involve all interested agencies (Federal, State, County, and local), groups, and individual members of the public. Interested parties are invited to participate in the scoping process by providing comments on both the alternatives and the issues to be addressed in the EIS. DOE will consider all comments in preparing the IP, which will specify the reasonable alternatives, identity the significant environmental issues to be analyzed in depth, and eliminate from detailed study those alternatives and environmental issues that are not significant or pertinent. When complete, the IP will be available for public review at the locations identified below.

Scoping Meeting

A public scoping meeting will be held at the location, on the date, and at the time indicated below. This scoping meeting will be informal, with a presiding officer designated by DOE who will establish procedures governing the conduct of the meeting.

The meeting will not be conducted as an evidentiary hearing, and those who choose to make statements may not be cross-examined by other speakers. To ensure that everyone who wishes to speak has a chance to do so, five minutes will be allotted to each speaker. Depending on the number of persons requesting to be heard, DOE may allow longer times for representatives of organizations. Persons wishing to speak on behalf of an organization should identify that organization in their request to speak. Persons who have not submitted a request to speak in advance may register to speak at any of the scoping meetings. They will be called on to present their comments as time permits. Oral and written comments will be given equal weight by DOE. Written comments may also be submitted after the scoping meetings, but should be postmarked by Thursday, August 27, 1992, and forwarded to Mr. Bruce J. Buvinger, Environmental Specialist, Morgantown Energy Technology Center, as provided in the **ADDRESS** section of this Notice. Written comments postmarked after that date will be considered to the degree practicable.

The meeting is scheduled as follows:

Date: Wednesday, August 12, 1992
Time: 7 p.m. (Registration opens at 6 p.m.)
Place: For Meade Community Center, Fort Meade, Florida 33841

A complete transcript of the public scoping meeting will be retained by DOE and made available for inspection during business hours, Monday through Friday, at the Department of Energy Freedom of Information Reading Room, Forrestal Building, 1000 Independence Avenue, SW., Washington, DC 20585, and at the Department of Energy., Morgantown Energy Technology Center, 3610 Collins Ferry Road, Morgantown, West Virginia 26505. Additional copies of the public scoping meeting transcript will also be made available during normal business hours at the following locations:

1. Tampa Hillsborough Public Library, 900 North Ashley Drive, Tampa, Florida 33602
2. Tampa Electric Company, Mulberry Customer Service Office, 101 2nd St. NW., Mulberry, Florida 33860

In addition, copies of the public scoping meeting transcript will be made available for purchase. Those interested parties who do not wish to submit comments or suggestions at this time, but who would like to receive a copy of the Draft EIS when it is prepared, should notify Mr. Bruce J. Buvinger Environmental Specialist, Morgantown Energy Technology Center, at the address given in the Invitation to Comment and Dates section of this notice.

Signed in Washington, DC this 22nd day of July 1992, for the United States Department of Energy.

Paul L. Ziemer,

Assistant Secretary, Environment, Safety and Health.

[FR Doc. 92-17964 Filed 7-27-92; 8:45 am]
BILLING CODE 6450-01-M

Floodplain and Wetland Notification for Proposed Environmental Restoration Action at the Department of Energy's Oak Ridge Reservation, Oak Ridge, Tennessee

AGENCY: U.S. Department of Energy.

ACTION: Notice of Floodplain and Wetland Involvement and opportunity to comment.

SUMMARY: The U.S. Department of Energy (DOE) proposes to establish measures to prevent the migration of radiologically contaminated soils from the K-25 site, specifically the K-1407-B Surface Impoundment on the DOE Oak Ridge Reservation, Oak Ridge, Tennessee. These activities may take place in the 100-year floodplain of Poplar Creek Watershed. All activities related to the proposed environmental restoration action would occur within a restricted (fenced) area of approximately 1.3 acres on federally owned property. This proposed action would consist of fill and a cap to preclude the transport of radiologically contaminated soils from the K-25 site.

DATE: Comments are due no later than August 12, 1992.

ADDRESS: Send comments to Mr. Robert C. Sleeman, Director, Environmental Restoration Division (EW-91), Oak Ridge Field Office, U.S. Department of Energy, Post Office Box 2001, Oak Ridge, Tennessee 37831-8541, or fax comments to 615-576-6074.

FOR FURTHER INFORMATION CONTACT: Carol Borgstrom, Director, Office of NEPA Oversight, U.S. Department of Energy, 1000 Independence Avenue, SW., Washington, DC 20585 or call (202) 586-4600.

SUPPLEMENTARY INFORMATION: DOE would take the proposed action as a remedial action under section 104 of the Comprehensive Environmental Response, Compensation, and Liability Act, Executive Order 12580, and National Contingency Plan. The excavated surface impoundment would be backfilled with borrow soil and capped with clay and a vegetative cover.

The proposed action, if implemented, would be carried out the concurrence of the U.S. Environmental Protection Agency, the Army Corps of Engineers, and the Tennessee Department of Environment and Conservation. The proposed remedy is intended to reduce potential exposure to radiation. The action would be performed in such a manner as to avoid or minimize potential impacts on the floodplain.

DOE will prepare a floodplain assessment and publish a statement of findings in accordance with 10 CFR part 1022. Maps and further information are available from DOE at the Information Resource Center, 105 Broadway Avenue, Oak Ridge, Tennessee, 37831-8541.

Paul D. Grimm,

Principal Deputy Assistant Secretary for Environmental Restoration and Waste Management.

[FR Doc. 92-17795 Filed 7-27-92; 8:45 am]
BILLING CODE 6450-01-M

Extension of Financial Assistance Award; Energy Child Development Center, Inc.

AGENCY: U.S. Department of Energy.

ACTION: Notice of a noncompetitive grant award extension to an organization substantially owned or controlled by one or more current Department of Energy employees.

SUMMARY: The Department of Energy announces that pursuant to 10 CFR

DOE Policy of Reasonable Alternatives

U.S. Department of Energy
NEPA Policy of Reasonable Alternatives
for the Clean Coal Technology Demonstration Program

Section 102(2)(c) of NEPA requires that agencies discuss the reasonable alternatives to the proposed action in an impact statement. The term "reasonable alternatives" is not self-defining, but rather must be determined in the context of the statutory purpose expressed by the underlying legislation. The goals of the Federal action establish the limits of its reasonable alternatives. Congress established a very specific goal for Round III of the CCT Program. These technologies are capable of (1) achieving significant reductions in SO2 and NOx emissions from existing facilities to minimize environmental impacts such as transboundary and interstate pollution and/or (2) providing for future energy needs in an environmentally acceptable manner. DOE's purpose in selecting the Polk Power Station project is to demonstrate the viability of the IGCC process. Reasonable alternatives to this proposed action must be capable of meeting this purpose.

Congress also directed DOE to pursue the goals of the legislation by means of partial funding of projects owned and controlled by non federal government sponsors. This statutory requirement places DOE in a much more limited role than if the Federal government were the owner and operator of the project. In the latter situation, DOE would be responsible for a comprehensive review of reasonable alternatives for siting the project. However, in dealing with the applicant, the scope of alternatives is necessarily more restricted, because the agency must focus on alternative ways to accomplish its purpose which reflect both the application before it and the functions it plays in the decision process. It is appropriate in such cases for DOE to give substantial weight to the applicant's needs in establishing a project's reasonable alternatives.

Other technologies which cannot serve to carry out the goal of the CCT Program legislation are not relevant to DOE's decision of whether to fund the Polk Power Station project, and therefore are not reasonable alternatives for this EIS.

Moreover, each of the CCT projects selected for partial funding is unique in that it was selected to fulfill a particular program need i.e., a specific technology or combination of technologies. Other projects proposing to demonstrate other technologies are not alternatives to the Polk Power Station project.

Congress not only prescribed a narrow goal for the CCT Program, but also directed DOE to use a process to accomplish that goal that would result in a minimal role for the Federal government. Instead of requiring government ownership of demonstration projects, Congress provided for cost-sharing in projects sponsored by other parties, with provision for eventual repayment of the public funds invested. Therefore, rather than being responsible for the siting, construction and operation of the projects, DOE has been placed in the more

limited role of evaluating applications by project sponsors to determine if they meet the CCT Program's goals. It is well established that an agency should take into account the needs and goals of the applicant in determining the scope of the EIS for the applicant's project. When an applicant's needs and goals are factored into the deliberations, a narrower scope of alternatives may emerge than would be the case if the agency is the proprietor, charged with full decision making responsibilities for the project.

APPENDIX F

EPA Public Notices

and Operation, Funding, Gooseberry Creek, Manti-La Sal National Forest, Sanpete County, UT, Due: April 20, 1994, Contact: Ron Willhite (303) 236–9336.

EIS No. 940049, Draft EIS, USN, RI, Davisville Naval Construction Battalion Center, Base Reuse and Development Plan, Implementation, Town of North Kingstown, Washington County, RI, Due: April 11, 1994, Contact: Robert Ostermueller (215) 595–0759.

EIS No. 940050, Final EIS, BPA, WA, Tenaska Washington II Generation Electric Power Plant Construction, Operation and NPDES Permits, Pierce County, WA, Due: March 28, 1994, Contact: Carol M. Borgstrom (800) 472–2756.

EIS No. 940051, Final EIS, AFS, ID, Black Pine Gold Mine Expansion Project, Implementation, Plan of Operation Approval and Right-of-Way Permits, Sawtooth National Forest, Burley Ranger District, Cassia County, ID, Due: April 11, 1994, Contact: Donald E. Peterson (208) 678–0430.

EIS No. 940052, Final EIS, UAF, FL, Homestead Air Force Base (AFB) Disposal and Reuse, Implementation, Dade County, FL, Due: March 28, 1994, Contact: Lt. Col. Gary Baumgatel (210) 536–3907.

EIS No. 940053, Final Supplement, COE, MS, Mississippi River and Tributaries Flood Control Plan, Updated Information, Yazoo Projects, Yazoo River Basin, several counties, MS, Due: March 28, 1994, Contact: Gary Young (601) 631–5906.

EIS No. 940054, Final Supplement, USA, TT, Kwajalein Atoll Ongoing and Strategic Defense Initiative Activities, Test Range Facility Construction and Support Services, Republic of the Marshall Islands, TT, Due: March 28, 1994, Contact: D. R. Gallier (205) 955–3294.

EIS No. 940055, Draft EIS, BLM, WY, Enron Burly Field Oil and Gas Leasing, Permit to Drill, Temporary Use Permits, COE Section 404 Permit and Right-of-Way Grants, Pinedale Resource Area, Sublette County, WY, Due: April 18, 1994, Contact: Teresa Deakins (307) 382–5350.

EIS No. 940056, Draft EIS, EPA, FL, Tampa Electric—Polk 1150 Megawatt Power Station Construction and Operation, NPDES and COE Section 404 Permits, Polk County, FL, Due: April 11, 1994, Contact: Heinz J. Mueller (404) 347–3776.

EIS No. 940057, Final Supplement, COE, MI, Sault Ste. Marie Federal Facilities Operation, Maintenance and Minor Improvements, Opening Date Considerations, Implementation, Chippewa County, MI, Due: March 28, 1994, Contact: Thomas M. Freitag (313) 226–6753.

EIS No. 940058, Draft EIS, AFS, NV, CA, East Shore Land and Resource Management Plan, Implementation, Lake Tahoe Basin Management Unit (LTBMU), Washoe and Douglas Counties, NV, Due: April 11, 1994, Contact: Scott Parsons (916) 573–2600.

EIS No. 940059, Draft EIS, FHW, MT, US 93 (Somers to Whitefish West) Transportation Improvements, Funding and COE Section 404 Permit, Glacier National Park and Flathead National Forest, Flathead County, MT, Due: May 02, 1994, Contact: Dale Paulson (406) 449–5305.

EIS No. 940060, Final Supplement, AFS, CA, WA, OR, Northern Spotted Owl Management Plan, Updated Information concerning Late-Successional and Old Growth Forest Related Species Within the Range of the Northen Spotted Owl, OR, WA and CA, Due: March 28, 1994, Contact: Robert T. Jacobs (503) 326–7472.

In accordance with 1502.9(c)(4) of the Council of Environmental Quality (CEQ) Regulations for implementing the procedural provisions of the National Environmental Policy Act alternative procedures have been approved by the Council for the filing of this FSEIS to allow for the filing and publication of the NOA in the same week. For further information contact Elisabeth Blaug (CEQ) 202–395–5754.

EIS No. 940061, Draft EIS, UAF, MO, Richards-Gebaur Air Force Base Disposal and Reuse, Implementation, Possible Clean Air Act Title V, National Pollutant Discharge Elimination System, COE Section 404, Hazardous Waste Treatment Storage or Disposal Facility, Archaeological Resources Protection Act and Endangered Species Act Section 10 Permits, Jackson and Cass Counties, MO, Due: April 11, 1994, Contact: Lt. Col. Gary Baumgartel (210) 536–3907.

Amended Notices

EIS No. 930432, Draft EIS, AFS, ID, Hazard Helicopter Timber Sale, Harvesting Timber and Road Construction, Payette National Forest, New Meadows Ranger District, Idaho County, ID, Due: February 25, 1994, Contact: Mike Balboni (208) 2634–0629. Published FR–11–30–93—Review period extended.

EIS No. 930445, Draft EIS, AFS, MO, Salem and Potosi Ranger Districts Off-Highway Recreational Vehicle Opportunties, Designation/Nondesignation, Mark Twain National Forest, Implementation, Crawford, Dent, Iron, Reynolds, Shannon and Washington Counties, MO, Due: March 25, 1994, Contact: Dar n Wang (314) 364–4621. Published FR 12–23–93—Review period extended.

Dated: February 22, 1994.

Marshall Cain,

Senior Legal Advisor, Office of Federal Activities.

[FR Doc. 94–4350 Filed 2–24–94; 8:45 am]

BILLING CODE 6560–50–U

[WH–FR–484–2–7]

State and Local Assistance; Grants for State Water Pollution Control Revolving Funds (Title VI) Under the Clean Water Act

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice of allotment.

SUMMARY: The Departments of Veterans Affairs and Housing and Urban Development, and Independent Agencies Appropriations Act, 1994, (the Act) provides $1,218,000,000 to capitalize State Revolving Fund (SRF) programs authorized by Title VI of the Clean Water Act (CWA). This notice sets forth the State allotments for fiscal year 1994 for their SRF programs. It also provides notice that one-half of one percentum of the appropriation, $6,090,000 is reserved for grants to Indian Tribes and Alaska Native Villages to construct sewage treatment facilities.

FOR FURTHER INFORMATION CONTACT: Mr. Leonard B. Fitch, Program Management Branch, Municipal Support Division, Office of Wastewater Enforcement and Compliance, (202) 260–5858.

SUPPLEMENTARY INFORMATION: Public Law No. 103–124, the Departments of Veterans Affairs and Housing and Urban Development, and Independent Agencies Appropriations Act, 1994, provides $1,218,000,000 to capitalize SRF programs authorized by Title VI of the CWA. Section 604(a) of the CWA requires that funds appropriated for Title VI for fiscal years 1987–1990 be allotted in accordance with the table in section 205(c)(3) of the CWA. Congress has given the Agency no instruction regarding the allotment of fiscal year 1994 funds. In the absence of Congressional action, the Agency will allot the fiscal year 1994 funds in accordance with the table in section 205(c)(3) except as described below.

PUBLIC NOTICE

U.S. Environmental Protection Agency
Region IV
Water Management Division - Water Permits and Enforcement Branch
345 Courtland Street, N.E.
Atlanta, Georgia 30365
(404) 347-3004

Public Notice No. 94FL0016 Date: 2/24/94

JOINT NOTICE
NOTICE OF PROPOSED ISSUANCE OF A
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT
AND
ENVIRONMENTAL IMPACT STATEMENT

The U.S. Environmental Protection Agency (EPA) proposes to issue a National Pollutant Discharge Elimination System (NPDES) permit to Tampa Electric Company, Post Office Box 111, Tampa, Florida, 33601-0111, for its proposed power plant (Polk Power Station) to be located on State Road 37 in southwestern Polk County, Florida, NPDES No. FL0043869. As an NPDES permit for a new source in Florida, EPA is preparing an Environmental Impact Statement (EIS) for the proposed facility entitled "Tampa Electric Company - Polk Power Station."

The proposed facility will be constructed in three phases. The first generating facilities at the site will be an Integrated Gasification Combined Cycle (IGCC) demonstration project, which is proposed for cost-shared financial assistance from the U.S. Department of Energy (DOE) under the Clean Coal Technology Demonstration Program, pending successful completion of the EIS process. The IGCC will consist of a nominal net 260 megawatt (MW) unit centered on a nominal net 150 MW advanced combustion turbine unit, with support facilities. Phase II will consist of construction of two nominal 220 MW combined cycle units and one nominal 75 MW combustion turbine unit. Phase III will consist of five additional 75 MW combined combustion units. The full buildout of the facility would create a power station with a nominal generating capacity of approximately 1,150 MW. The applicable Standard Industrial Classification (SIC) Code is 4911.

The proposed facility will have two outfalls which will discharge process wastewater covered by applicable effluent guidelines to waters of the U.S. Outfall 001 will consist of cooling reservoir blowdown. Contributing discharges to the cooling reservoir include recirculated cooling water, treated industrial wastewater plant effluent, treated sanitary sewage treatment plant effluent, low volume wastes, contaminated storm

water from industrial areas, ground water seepage, and ground water makeup. Outfall 002 will consist of storm water runoff from areas associated with industrial activity. The receiving stream is Little Payne Creek, which is designated as Class III waters - suitable for recreation, propagation, and maintenance of a healthy, well-balanced population of fish and wildlife.

The proposed NPDES permit contains limitations on the amounts of pollutants allowed to be discharged, and was drafted in accordance with the provisions of the Clean Water Act (33 U.S.C. Section 1251 et seq.) and other lawful standards and regulations. The pollutant limitations and other permit conditions are tentative and open to comment from the public.

EPA will make a draft EIS available to the public. A Notice of Availability for the draft EIS will be noticed in the Federal Register on February 25, 1994. The draft EIS will contain a copy of the draft NPDES permit.

In order to solicit further public participation on the proposed project, EPA will chair a joint public hearing on the proposed issuance of the NPDES permit and the draft EIS. The hearing will begin at 7:00 p.m. on Thursday, March 31, 1994, at the Polk County Commission Board Room located at 330 West Church Street, Administrative Building, First Floor, in Bartow, Florida 33830. Individuals with handicaps requiring special assistance should contact Ms. Lena Scott, Public Notice Coordinator, at 404/347-3004 by March 17, 1994, so that reasonable accommodations can be made.

Both oral and written comments will be accepted at the public hearing and a transcript of the proceedings will be made. For the accuracy of the record, written comments are encouraged. The Hearing Officer reserves the right to fix reasonable limits on the time allowed for oral statements.

Persons wishing to comment upon or object to any aspects of the permit issuance and/or the draft EIS are invited to submit the same in writing by April 11, 1994, to:

Ms. Lena Scott, Public Notice Coordinator
U.S. Environmental Protection Agency
Region IV - Office of Public Affairs
345 Courtland Street, N.E.
Atlanta, Georgia 30365

Pursuant to 40 C.F.R. § 124.13, any person who believes that any permit condition is inappropriate must raise all reasonably ascertainable issues and submit all reasonably available arguments in full, supporting his/her position, by the close of the comment period. The public notice number, NPDES number, and title of the EIS should be included in the first page of

comments.

A final EIS will be published after the close of the public comment period. The final EIS will be an updated version of the draft EIS, revised as necessary to take into account comments received during the public hearing and the public comment period. The final EIS will also contain the EPA final decision on the preferred alternative, responses to comments received on the draft EIS, the transcript of the public hearing (or summary thereof), other relevant information or evaluations developed after publication of the draft EIS, and a copy of the draft NPDES permit.

After consideration of all written comments; all comments, statements and data presented at the public hearing; and the requirements and policies in the National Environmental Policy Act (NEPA) of 1969, as amended and the Clean Water Act and appropriate regulations, the EPA Regional Administrator will make a determination regarding the permit issuance. If the determination is substantially unchanged from that announced by this notice, the EPA Regional Administrator will so notify all persons submitting written comments. If the determination is substantially changed, the EPA Regional Administrator will issue a public notice indicating the revised determination. Request(s) for an evidentiary hearing may be filed after the Regional Administrator makes the above-described determination. No issues shall be raised by any party that were not submitted to the administrative record as part of the preparation of and comment on the draft permit, unless good cause is shown for the failure to submit them in accordance with 40 C.F.R. § 124.76. Additional information regarding an evidentiary hearing is available in 40 C.F.R. Part 124, Subpart E, or by contacting the Office of Regional Counsel at the address in the heading of this notice at (404) 347-3777.

The administrative record, including application, Fact Sheet or statement of basis, draft permit, a sketch showing the exact location of the discharge(s), comments received, and additional information on hearing procedures is available at cost by writing the EPA address above, or for review and copying at 345 Courtland Street, N.E., Atlanta, Georgia, between the hours of 8:15 a.m. and 4:30 p.m., Monday through Friday. Copies will be provided at a minimal cost per page.

Copies of the DEIS, Fact Sheet, and other information will be available for review at reading rooms in the following locations in Polk County: (1) Bartow Public Library, 315 East Parker Street, Bartow, Florida 33830; (2) Lakeland Public Library, 100 Lake Morton Drive, Lakeland, Florida 33801; (3) Tampa Electric Company, Mulberry Customer Service, 101 2nd Street, NW, Mulberry, Florida 33860; (4) Ft. Meade Public Library, 75 East Broadway, Ft. Meade, Florida 33841; and (5)

Bruton Memorial Library, 302 McLandon Street, Plant City, Florida 33566. A limited number of copies of the DEIS are also available from Mr. Chris Hoberg, Federal Facilities Branch, at the above EPA address (Telephone: 404/347-3776).

EPA has requested the Florida Department of Environmental Protection certify the discharges in accordance with the provisions of Section 401 of the Clean Water Act (33 U.S.C. Section 1341).

Please bring the foregoing to the attention of persons whom you know will be interested in this matter. If you would like to be added to our public notice mailing list, submit your name and mailing address to the Office of Public Affairs at EPA's address given above.

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AFFIDAVIT OF PUBLICATION

The Polk County Democrat

Published Semi-Weekly
Bartow, Polk County, Florida

Case No. _____

STATE OF FLORIDA
COUNTY OF POLK

Before the undersigned authority personally appeared _____ Mary G. Frisbie _____, who on oath says that (s)he is _____ Treasurer _____ of The Polk County Democrat, a newspaper published at Bartow, Polk County, Florida; that the attached copy of advertisement, being a _____ Public Notice _____ in the matter of _____ (NPDES) Tampa Electric Company _____

in the _____ Court, was published in said newspaper in the issues of _____.

Affiant further says that The Polk County Democrat is a newspaper published at Bartow, in said Polk County, Florida, and that said newspaper has heretofore been continuously published in said Polk County, Florida, each Monday and Thursday, and has been entered as second class matter at the post office in Bartow, in said Polk County, Florida, for a period of one year next preceeding the first publication of the attached copy of advertisement; and affiant further says that he has neither paid nor promised any person, firm, or corporation any discount, rebate, commission, or refund for the purpose of securing this advertisement for publication in said newspaper.

Signed Mary G. Frisbie

Sworn to and subscribed before me this 28th day of Feb, 1994,

by _____ Mary G. Frisbie _____,

who is personally known to me.

Teresa M Pacetti
(Signature of Notary Public)

Teresa M. Pacetti
(Printed or typed name of Notary Public)
Notary Public

My Commission Expires:

NOTARY PUBLIC STATE OF FLORIDA

Notary Public, State of Florida
TERESA M. PACETTI
My Comm. Exp. Dec. 19, 1995
Comm. No. CC 169408

PUBLIC NOTICE

U.S. Environmental Protection Agency
Region IV
Water Management Division - Water Permits and Enforcement Branch
345 Courtland Street, N.E.
Atlanta, Georgia 30365
(404) 347-3004

Public Notice No. 94FL0012 Date: 2/17/94

NOTICE OF INITIAL NEW SOURCE DETERMINATION

On December 21, 1991, the United States Environmental Protection Agency (EPA) received a letter from Tampa Electric Company (TECO), Post Office Box 111, Tampa, Florida, 33601-0111, requesting EPA's determination of whether the proposed power plant, to be located on State Road 37 in southwest Polk County, Florida, will be a new source subject to the requirements of 40 CFR Part 423. The proposed facility would use fossil type fuel in conjunction with a thermal cycle employing a steam water system as the thermodynamic medium and would primarily generate electricity for distribution and sale. The applicable Standard Industrial Classification (SIC) Code is 4911.

The proposed facility will have two outfalls which will discharge process wastewater covered by applicable effluent guidelines to waters of the U.S. Outfall 001 will consist of cooling reservoir blowdown to an unnamed reclaimed lake. Contributing discharges to the cooling reservoir include recirculated cooling water, treated industrial wastewater plant effluent, treated sanitary sewage treatment plant effluent, low volume wastes, contaminated storm water from industrial areas, ground water seepage, and ground water makeup. Outfall 002 will consist of storm water runoff from areas associated with industrial activity.

Based on this information, it has been tentatively determined that the proposed steam electric generating facility is a new source subject to the effluent guidelines for steam electric generating facilities (40 CFR Section 423.15). Pursuant to Section 511(c) of the Clean Water Act, 33 U.S.C. § 1371, the proposed facility will require a National Environmental Policy Act (NEPA) evaluation and preparation of an environmental impact statement (EIS) is required.

Any person may challenge the Regional Administrator's initial new source determination by requesting an evidentiary hearing within 30 days of this notice. If all parties to the

evidentiary hearing on the determination agree, the Regional Administrator may consolidate the hearing. Additional information regarding an evidentiary hearing is available in 40 CFR Subpart E, or by contacting the Office of Regional Counsel at the address above or by calling (404) 347-3777.

Persons wishing to challenge the Regional Administrator's initial new source determination should submit an evidentiary hearing request to the Environmental Protection Agency, 345 Courtland Street, N.E., Atlanta, Georgia 30365, ATTENTION: Julia Mooney, Regional Hearing Clerk. The public notice number and NPDES number should be included in the first page of comments and postmarked within thirty (30) days of this notice.

Please bring the foregoing to the attention of persons whom you know will be interested in this matter.

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AFFIDAVIT OF PUBLICATION

The Polk County Democrat

Published Semi-Weekly
Bartow, Polk County, Florida

Case No. _____

STATE OF FLORIDA
COUNTY OF POLK

Before the undersigned authority personally appeared _____ Mary G. Frisbie _____, who on oath says that (s)he is _____ Treasurer _____ of The Polk County Democrat, a newspaper published at Bartow, Polk County, Florida; that the attached copy of advertisement, being a _____ Public Notice _____ in the matter of _____ Notice of Initial New Source Determination Dec. 21, 1991 on 40 CFR Part 423 _____ in the _____ Court, was published in said newspaper in the issues of _____ Feb. 17, 1994 _____.

Affiant further says that The Polk County Democrat is a newspaper published at Bartow, in said Polk County, Florida, and that said newspaper has heretofore been continuously published in said Polk County, Florida, each Monday and Thursday, and has been entered as second class matter at the post office in Bartow, in said Polk County, Florida, for a period of one year next preceeding the first publication of the attached copy of advertisement; and affiant further says that he has neither paid nor promised any person, firm, or corporation any discount, rebate, commission, or refund for the purpose of securing this advertisement for publication in said newspaper.

Signed Mary G. Frisbie

Sworn to and subscribed before me this 18th day of Feb., 1994,

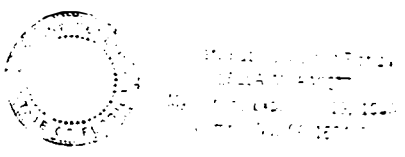
by _____ Mary G. Frisbie _____,

who is personally known to me.

Teresa M Pacetti
(Signature of Notary Public)

Teresa M. Pacetti
(Printed or typed name of Notary Public)
Notary Public

My Commission Expires:



PUBLIC NOTICE
U. S. Environmental
Protection Agency
Region IV
Water Management Division
Water Permits and
Enforcement Branch
345 Courtland
Street, N. E.
Atlanta, Georgia 30365
(404) 347-3004
Public Notice No. 94FL0012
Feb. 17, 1994

NOTICE OF INITIAL NEW SOURCE DETERMINATION

On December 21, 1991, the United States Environmental Protection Agency (EPA) received a letter from Tampa Electric Company (TECO), Post Office Box 111, Tampa, Florida, 33601-0111, requesting EPA's determination of whether the proposed power plant, to be located on State Road 37 in southwest Polk County, Florida, will be a new source subject to the requirements of 40 CFR Part 423. The proposed facility would use fossil type fuel in conjunction with a thermal cycle employing a steam water system as the thermodynamic medium and would primarily generate electricity for distribution and sale. The applicable Standard Industrial Classification (SIC) Code is 4911.

The proposed facility will have two outfalls which will discharge process wastewater covered by applicable effluent guidelines to waters of the U. S. Outfall 001 will consist of cooling reservoir blowdown to an unnamed reclaimed lake. Contributing discharges to the cooling reservoir include recirculated cooling water, treated industrial wastewater plant effluent, treated sanitary sewage treatment plant effluent, low volume wastes, contaminated storm water from industrial areas, ground water seepage, and ground water makeup. Outfall 002 will consist of storm water runoff from areas associated with industrial activity.

Based on this information, it has been tentatively determined that the proposed steam electric generating facility is a new source subject to the effluent guidelines for steam electric generating facilities (40 CFR Section 423.15). Pursuant to Section 511(c) of the Clean Water Act, 33 U.S.C. § 1371, the proposed facility will require a National Environmental Policy Act (NEPA) evaluation and preparation of an environmental impact statement (EIS) is required.

Any person may challenge the Regional Administrator's initial new source determination by requesting an evidentiary hearing within 30 days of this notice. If all parties to the evidentiary hearing on the determination agree, the Regional Administrator may consolidate the hearing. Additional information regarding an evidentiary hearing is available in 40 CFR Subpart E, or by contacting the Office of Regional Counsel at the address above or by calling (404) 347-3777.

Persons wishing to challenge the Regional Administrator's initial new source determination should submit an evidentiary hearing request to the Environmental Protection Agency, 345 Courtland Street, N.E., Atlanta, Georgia 30365, ATTENTION: Julia Mooney, Regional Hearing Clerk. The public notice number and NPDES number should be included in the first page of comments and postmarked within thirty (30) days of this notice.

Please bring the foregoing to the attention of persons whom you know will be interested in this matter.

Feb. 17, 1994—0413

United States
Environmental Protection
Agency

Region IV
Office of Public Affairs
345 Courtland St. NE
Atlanta, Georgia 30365

Environmental News

(404) 347-3004

EPA TO HOLD PUBLIC HEARING ON MARCH 31, 1994 IN BARTOW, FLORIDA REGARDING WASTEWATER DISCHARGE PERMIT AND ENVIRONMENTAL IMPACT STATEMENT FOR TAMPA ELECTRIC COMPANY'S PROPOSED POLK POWER STATION

The U. S. Environmental Protection Agency (EPA) will hold a public hearing on Thursday, March 31, 1994, in Bartow, Florida, to solicit comments on the draft Environmental Impact Statement (EIS) and the draft National Pollutant Discharge Elimination System (NPDES) permit for the Polk Power Station in Polk County proposed by Tampa Electric Company.

The hearing will begin at 7:00 p.m. in the Polk County Comission Board Room located at 330 West Church Street in Bartow, Florida.

Tampa Electric Company is proposing to construct and operate a new power plant and associated facilities which will have a generating capacity of 1,150 megawatts by 2010. Polk Unit 1 is being scheduled as a Clean Coal Technology demonstration project, with $120 million of cost-shared financial assistance to be provided by the Department of Energy, pending successful completion of the EIS process. The demonstration project will be more efficient and produce fewer air emissions than conventional units.

In preparing the draft EIS, EPA considered impacts the project may have on air quality, groundwater, surface water, wetlands, aquatic life, cultural resources, noise, and human health, as well as cumulative impacts. The Department of Energy and the U.S. Army Corps of Engineers are cooperating with EPA in the preparation of the EIS. Copies of the draft EIS are available for review at the Bartow Public Library, Lakeland Public Library, Ft. Meade Public Library, Bruton Memorial Library (Plant City) and Tampa Electric Company in Mulberry, Florida.

Written and oral comments on the draft EIS and/or draft NPDES permit will be accepted at the public hearing. Written comments may also be addressed to Lena Scott, Public Notice Coordinator, U. S. Environmental Protection Agency, 345 Courtland St., Atlanta, GA 30365. Facsimile transmittals may be sent to (404) 347-5206. The comment period concludes on April 11, 1994.

-0- March 28, 1994

CONTACT: Charlis Thompson, EPA Region IV, 404-347-3004

PUBLIC NOTICE

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION IV
345 COURTLAND STREET, NE
ATLANTA, GEORGIA 30365

Availability of the U.S. Environmental Protection Agency's (EPA) draft environmental impact statement (DEIS) entitled "Tampa Electric Company - Polk Power Station" was noticed by EPA/Region IV as a Notice of Availability (NOA) in the *Federal Register* on February 25, 1994. The fact that EPA's action is a decision that involves an EPA National Pollutant Discharge Elimination System (NPDES) permit for a new source was also briefly referenced in the *Federal Register* notice. After issuance of the DEIS and during the 45-day National Environmental Policy Act (NEPA) public comment period, EPA will hold a Public Hearing near the project site proposed by Tampa Electric Company. This Public Hearing will be on Thursday, March 31, 1994, starting at 7:00 p.m., at the Polk County Commission Board Room located at 330 West Church Street, Administrative Building, First Floor, in Bartow, Florida 33830. The hearing will be a joint Public Hearing for both the DEIS and the NPDES permit, and was announced in the *Polk County Democrat* and the *Tampa Tribune* newspapers on February 24, 1994. The DEIS includes a copy of the draft EPA NPDES permit as an appendix.

Through license and permit applications, Tampa Electric Company is proposing to construct and operate a new power plant and associated facilities on an approximately 4,348-acre site in southwestern Polk County, Florida. The proposed facilities would be known as the "Tampa Electric Company Polk Power Station." The proposed total net generating capacity at full build-out of the units at the site would be approximately 1,150 MW. The generating units planned for the Polk Power Station would be developed at the site according to a phased schedule that matches Tampa Electric Company's forcasted growth in electricity demands beginning in 1996 and continuing into the year 2010. The first generating facility at the Polk Power Station site is proposed to be an integrated gasification combined cycle (IGCC) unit. This IGCC unit would be known as "Polk Unit 1." Cost-shared financial assistance for the IGCC unit would be provided by the U.S. Department of Energy (DOE) through the DOE Clean Coal Technology (CCT) Demonstration Program, pending successful completion of this environmental impact statement (EIS) process. The nominal net 260 MW IGCC unit would consist of a nominal net 150-MW advanced combustion turbine (CT), heat recovery steam generator (HRSG), steam turbine (ST), and coal gasification (CG) facilities. The IGCC unit would be fueled by coal-derived gas called coal gas or syngas, which is produced in the CG facilities with low-sulfur No. 2 fuel oil as a backup fuel. Tampa Electric Company's current Power Resource Plan indicates that later facilities would consist of two combined cycle (CC) generating units and six simple-cycle CTs fueled by natural gas with low-sulfur No. 2 fuel oil as the backup fuel.

Received written comments on this DEIS and/or the NPDES permit will be accepted by EPA if postmarked by the close of the public comment period on:

APRIL 11, 1994

Comments should be addressed to Ms. Lena Scott; Public Notice Coordinator; U.S. Environmental Protection Agency, Region IV; 345 Courtland Street, NE; Atlanta, Georgia 30345; Telephone: (404) 347-3004. Facsimile transmittals may be sent to EPA at (404) 347-5206. Responses to the comments will be provided in the final environmental impact statement (FEIS). A copy of the Public Hearing transcript or a summary thereof will also be provided in the FEIS.

(MORE ON BACK)

The preferred alternative for the EIS is "Tampa Electric Company's Proposed Project (Preferred Alternative With DOE Financial Assistance)." Reasonable project Alternatives and subalternatives to the proposed project were considered in the EIS. In addition to "Tampa Electric Company's Alternative Power Resource Proposal (Without DOE Financial Assistance)" and the "No-Action Alternative," EIS-considered alternatives and subalternatives are: alternatives to constructing new generation facilities, alternative generation technologies, alternative site analysis, and alternative processes and facilities.

The Tampa Electric Company Proposed Project (Preferred Alternative With DOE Financial Assistance) proposes power generation through the 260-MW IGCC and two 75-MW CTs, while the Tampa Electric Company Alternative Power Resource Proposal (Without DOE Financial Assistance) proposes power generation through a 500-MW pulverized coal (PC) unit with flue gas desulfurization (FGD).

Environmental impacts considered in the EIS include: air quality, groundwater, surface water, geological, terrestrial (including wetlands), aquatic, socio-economic, land use, transportation, cultural, noise, human health, and cumulative impacts. Minimization/mitigation of project impacts was also addressed. For example, Tampa Electric Company proposes to enhance/create approximately 168.41 acres of wetlands in compensation for approximately 253 acres of proposed wetland losses, in addition to site reclamation for phosphate mining required by the State of Florida.

One or two copies of the DEIS are available for public review at the following locations:

Bartow Public Library
315 East Parker Street
Bartow, Florida 33830
ATTN: Ms. Linda Chancey
(813) 534-0131

Lakeland Public Library
100 Lake Morton Drive
Lakeland, Florida 33801
ATTN: Ms. Betty Boyd
(813) 499-8242

Tampa Electric Company
Mulberry Customer Service
101 2nd Street, NW
Mulberry, Florida 33860
ATTN: Mr. Al Dorsett
(813) 425-4988

Ft. Meade Public Library
75 East Broadway
Ft. Meade, FL 33841
ATTN: Ms. Kay Jackson
(813) 285-8287

Bruton Memorial Library
302 McLandon Street
Plant City, Florida 33566
ATTN: Tim Pasden
(813) 757-9215

Upon request, a limited number of copies of the DEIS is also available from EPA (Mr. Chris Hoberg (FAB-4), Federal Activities Branch, Environmental Policy Section; 345 Courtland Street, NE; Atlanta, GA 30365; Telephone: (404) 347-3776; FAX: (404) 347-5206).

PUBLIC NOTICE
U. S. Environmental
Protection Agency
Region IV
Water Management Division-
Facilities Performance Branch
345 Courtland
Street, N. E.
Atlanta, Georgia 30365
(404) 347-3004
Public Notice No. 94FL0017
Feb. 24th, 1994

JOINT NOTICE
NOTICE OF PROPOSED
ISSUANCE OF A
NATIONAL POLLUTANT
DISCHARGE ELIMINATION
SYSTEM PERMIT
AND
ENVIRONMENTAL IMPACT
STATEMENT

The U. S. Environmental Protection Agency (EPA) proposes to issue a National Pollutant Discharge Elimination System (NPDES) permit to Tampa Electric Company, Post Office Box 111, Tampa, Florida 33601-0111, for its proposed power plant (Polk Power Station) to be located on State Road 37 in southwestern Polk County, Florida. NPDES No. FL0043869. As an NPDES permit for a new source in Florida, EPA is preparing an Environmental Impact Statement (EIS) for the proposed facility entitled "Tampa Electric Company - Polk Power Station."

The proposed facility will be constructed in three phases. The first generating facilities at the site will be an Integrated Gasification Combined Cycle (IGCC) demonstration project, which is proposed for cost-shared financial assistance from the U. S. Department of Energy (DOE) under the Clean Coal Technology Demonstration Program, pending successful completion of the EIS process. The IGCC will consist of a nominal net 260 megawatt (MW) unit centered on a nominal net 150 MW advanced combustion turbine unit, with support facilities. Phase II will consist of construction of two nominal 220 MW combined cycle units and one nominal 75 MW combustion turbine unit. Phase III will consist of five additional 75 MW combined combustion units. The full buildout of the facility would create a power station with a nominal generating capacity of approximately 1,150 MW. The applicable Standard Industrial Classification (SIC) Code is 4911.

The proposed facility will have two outfalls which will discharge process wastewater covered by applicable effluent guidelines to waters of the U. S. Outfall 001 will consist of cooling reservoir blowdown. Contributing discharges to the cooling reservoir include recirculated cooling water, treated industrial wastewater plant effluent, treated sanitary sewage treatment plant effluent, low volume wastes, contaminated storm water from industrial areas, ground water seepage, and ground water makeup. Outfall 002 will consist of storm water runoff from areas associated with industrial activity. The receiving stream is Little Payne Creek, which is designated as Class III waters - suitable for recreation, propagation, and maintenance of a healthy, well-balanced population of fish and wildlife.

The proposed NPDES permit contains limitations on the amounts of pollutants allowed to be discharged, and was drafted in accordance with the provisions of the Clean Water Act (33 U.S.C. Section 1251 et seq.) and other lawful standards and regulations. The pollutant limitations and other permit conditions are tentative and open to comment from the public.

EPA will make a draft EIS available to the public. A Notice of Availability for the draft EIS will be noticed in the Federal Register on February 25, 1994. The draft EIS will contain a copy of the draft NPDES permit.

In order to solicit further public participation on the proposed project, EPA will chair a joint public hearing on the proposed issuance of the NPDES permit and the draft EIS. The hearing will begin at 7:00 p. m. on Thursday, March 31, 1994, at the Polk County Commission Board Room located at 330 West Church Street, Administrative Building, First Floor, in Bartow, Florida 33830. Individuals with handicaps requiring special assistance should contact Ms. Lena Scott, Public Notice Coordinator, at 404/347-3004 by March 17, 1994, so that reasonable accommodations can be made.

Both oral and written comments will be accepted at the public hearing and a transcript of the proceedings will be made. For the accuracy of the record, written comments are encouraged. The Hearing Officer reserves the right to fix reasonable limits on the time allowed for oral statements.

Persons wishing to comment upon or object to any aspects of the permit issuance and/or the draft EIS are invited to submit the same in writing by April 11, 1994, to: Ms. Lena Scott, Public Notice Coordinator, U.S. Environmental Protection Agency, Region IV - Office of Public Affairs, 345 Courtland Street, N.E., Atlanta, Georgia 30365.

Pursuant to 40 C.F.R. § 124.13, any person who believes that any permit condition is inappropriate must raise all reasonably ascertainable issues and submit all reasonably available arguments in full, supporting his/her position, by the close of the comment period. The public notice number, NPDES number, and title of the EIS should be included in the first page of comments.

A final EIS will be published after the close of the public comment period. The final EIS will be an updated version of the draft EIS, revised as necessary to take into account comments received during the public hearing and the public comment period. The final EIS will also contain the EPA final decision on the preferred alternative, responses to comments received on the draft EIS, the transcript of the public hearing (or summary thereof), other relevant information or evaluations developed after publication of the draft EIS, and a copy of the draft NPDES permit.

After consideration of all written comments, all comments, statements and data presented at the public hearing; and the requirements and policies in the National Environmental Policy Act (NEPA) of 1969, as amended and the Clean Water Act and appropriate regulations, the EPA Regional Administrator will make a determination regarding the permit issuance. If the determination is substantially unchanged from that announced by this notice, the EPA Regional Administrator will so notify all persons submitting written comments. If the determination is substantially changed, the EPA Regional Administrator will issue a public notice indicating the revised determination. Request(s) for an evidentiary hearing may be filed after the Regional Administrator makes the above-described determination. No issues shall be raised by any party that were not submitted to the administrative record as part of the preparation of and comment on the draft permit, unless good cause is shown for the failure to submit them in accordance with 40 C.F.R. § 124.76. Additional information regarding an evidentiary hearing is available in 40 C.F.R. Part 124, Subpart E, or by contacting the Office of Regional Counsel at the address in the heading of this notice at (404) 347-3777.

The administrative record, including application, Fact Sheet or statement of basis, draft permit, a sketch showing the exact location of the discharge(s), comments received, and additional information on hearing procedures is available at cost by writing the EPA address above, or for review and copying at 345 Courtland Street, N.E., Atlanta, Georgia, between the hours of 8:15 a. m. and 4:30 p. m., Monday through Friday. Copies will be provided at a minimal cost per page.

Copies of the DEIS, Fact Sheet, and other information will be available for review at reading rooms in the following locations in Polk County: (1) Bartow Public Library, 315 East Parker Street, Bartow, Florida 33830; (2) Lakeland Public Library, 100 Lake Morton Drive, Lakeland, Florida 33801; (3) Tampa Electric Company, Mulberry Customer Service, 101 2nd Street, NW, Mulberry, Florida 33860; (4) Ft. Meade Public Library, 75 East Broadway, Ft. Meade, Florida 33841; and (5) Bruton Memorial Library, 302 McLendon Street, Plant City, Florida 33566. A limited number of copies of the DEIS are also available from Mr. Chris Hoberg, Federal Facilities Branch, at the above EPA address (Telephone: 404/347-3776).

EPA has requested the Florida Department of Environmental Protection certify the discharges in accordance with the provisions of Section 401 of the Clean Water Act (33 U.S.C. Section 1341).

Please bring the foregoing to the attention of persons whom you know will be interested in this matter. If you would like to be added to our public notice mailing list, submit your name and mailing address to the Office of Public Affairs at EPA's address given above.

Feb. 24, 1994—0502

THE TAMPA TRIBUNE

Published Daily

Tampa, Hillsborough County, Florida

State of Florida
County of Hillsborough } ss.

Before the undersigned authority personally appeared R. Pumey, who on oath says that he is Accounting Manager of The Tampa Tribune, a daily newspaper published at Tampa in Hillsborough County, Florida; that the attached copy of advertisement being a

LEGAL NOTICE

in the matter of

PUBLIC NOTICE

was published in said newspaper in the issues of

FEBRUARY 24, 1994

Affiant further says that the said The Tampa Tribune is a newspaper published at Tampa in said Hillsborough County, Florida, and that the said newspaper has heretofore been continuously published in said Hillsborough County, Florida, each day and has been entered as second class mail matter at the post office in Tampa, in said Hillsborough County, Florida, for a period of one year next preceding the first publication of the attached copy of advertisement; and affiant further says that he has neither paid nor promised any person, firm, or corporation any discount, rebate, commission or refund for the purpose of securing this advertisement for publication in the said newspaper.

R. Pumey [signature]

Sworn to and subscribed before me, this 24 *day of* FEBRUARY *, A.D. 19*94

Personally Known ✓ *or Produced Identification* _____

Type of Identification Produced __________

(SEAL) Ina G. Kinnedy [signature]

[Notary stamp: [illegible] Notary Public, State of Florida, My comm. expires [illegible] No. CC107791]

PUBLIC NOTICE. U.S. Environmental Protection Agency, Region IV, Water Management Division - Water Permits and Enforcement Branch, 345 Courtland Street, N.E., Atlanta, Georgia 30365. (404) 347-3004. Public Notice No. 94FL0016. Date: 2/24/94. JOINT NOTICE. NOTICE OF PROPOSED ISSUANCE OF A NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT AND ENVIRONMENTAL IMPACT STATEMENT. The U.S. Environmental Protection Agency (EPA) proposes to issue a National Pollutant Discharge Elimination System (NPDES) permit to Tampa Electric Company, Post Office Box 111, Tampa, Florida, 33601-0111, for its proposed power plant (Polk Power Station) to be located on State Road 37 in southwestern Polk County, Florida, NPDES No. [illegible]. As an NPDES permit for a new source in Florida, EPA is preparing an Environmental Impact Statement (EIS) for the proposed facility entitled "Tampa Electric Company - Polk Power Station." The proposed facility will be constructed in three phases. The first generating facilities at the site will be an Integrated Gasification Combined Cycle (IGCC) demonstration project, which is proposed for cost-shared financial assistance from the U.S. Department of Energy (DOE) under the Clean Coal Technology Demonstration Program, pending successful completion of the EIS process. The IGCC will consist of a nominal net 260 megawatt (MW) unit centered on a nominal net 150 MW advanced combustion turbine unit, with support facilities. Phase II will consist of construction of two nominal 220 MW combined cycle units and one nominal 75 MW combustion turbine unit. Phase III will consist of five additional 75 MW combined combustion units. The full buildout of the facility would create a power station with a nominal generating capacity of approximately 1,150 MW. The applicable Standard Industrial Classification (SIC) Code is 4911. The proposed facility will have two outfalls which will discharge process wastewater covered by applicable effluent guidelines to waters of the U.S. Outfall 001 will consist of cooling reservoir blowdown. Contributing discharges to the cooling reservoir include recirculated cooling water, treated industrial wastewater plant effluent, treated sanitary sewage treatment plant effluent, low volume wastes, contaminated storm water from industrial areas, ground water seepage, and ground water makeup. Outfall 002 will consist of storm water runoff from areas associated with industrial activity. The receiving stream is Little Payne Creek, which is designated as Class III waters - suitable for recreation, propagation, and maintenance of a healthy, well-balanced population of fish and wildlife. The proposed NPDES permit contains limitations on the amounts of pollutants allowed to be discharged, and was drafted in accordance with the provisions of the Clean Water Act (33 U.S.C. Section 1251 et seq.) and other lawful standards and regulations. The pollutant limitations and other permit conditions are tentative and open to comment from the public. EPA will make a draft EIS available to the public. A Notice of Availability for the draft EIS will be noticed in the Federal Register on February 25, 1994. The draft EIS will contain a copy of the draft NPDES permit. In order to solicit further public participation on the proposed project, EPA will chair a joint public hearing on the proposed issuance of the NPDES permit and the draft EIS. The hearing will begin at 7:00 p.m. on Thursday, March 31, 1994, at the Polk County Commission Board Room located at 330 West Church Street, Administrative Building, First Floor, in Bartow, Florida 33830. Individuals with handicaps requiring special assistance should contact Ms. Lena Scott, Public Notice Coordinator, at 404/347-3004 by March 17, 1994, so that reasonable accommodations can be made. Both oral and written comments will be accepted at the public hearing and a transcript of the proceedings will be made. For the accuracy of the record, written comments are encouraged. The Hearing Officer reserves the right to fix reasonable limits on the time allowed for oral statements. Persons wishing to comment upon or object to any aspects of the permit issuance and/or the draft EIS are invited to submit the same in writing by April 11, 1994, to: Ms. Lena Scott, Public Notice Coordinator, U.S. Environmental Protection Agency, Region IV - Office of Public Affairs, 345 Courtland Street, N.E., Atlanta, Georgia 30365. Pursuant to 40 C.F.R. §124.13, any person who believes that any permit condition is inappropriate must raise all reasonably ascertainable issues and submit all reasonably available arguments in full, supporting his/her position, by the close of the comment period. The public notice number, NPDES number, and title of the EIS should be included in the first page of comments. A final EIS will be published after the close of the public comment period. The final EIS will be an updated version of the draft EIS, revised as necessary to take into account comments received during the public hearing and the public comment period. The final EIS will also contain the EPA final decision on the preferred alternative, responses to comments received on the draft EIS, the transcript of the public hearing (or summary thereof), other relevant information or evaluations developed after publication of the draft EIS, and a copy of the draft NPDES permit. After consideration of all written comments, all comments, statements and data presented at the public hearing, and the requirements and policies in the National Environmental Policy Act (NEPA) of 1969, as amended and the Clean Water Act and appropriate regulations, the EPA Regional Administrator will make a determination regarding the permit issuance. If the determination is substantially unchanged from that announced by this notice, the EPA Regional Administrator will so notify all persons submitting written comments. If the determination is substantially changed, the EPA Regional Administrator will issue a public notice indicating the revised determination. Request(s) for an evidentiary hearing may be filed after the Regional Administrator makes the above-described determination. No issues shall be raised by any party that were not submitted to the administrative record as part of the preparation of and comment on the draft permit, unless good cause is shown for the failure to submit them in accordance with 40 C.F.R. §124.76. Additional information regarding an evidentiary hearing is available in 40 C.F.R. Part 124, Subpart E, or by contacting the Office of Regional Counsel at the address in the heading of this notice or (404) 347-3777. The administrative record, including application, Fact Sheet or statement of basis, draft permit, a sketch showing the exact location of the discharge(s), comments received, and additional information on hearing procedures is available at cost by writing the EPA address above, or for review and copying at 345 Courtland Street, N.E., Atlanta, Georgia, between the hours of 8:15 a.m. and 4:30 p.m., Monday through Friday. Copies will be provided at a minimal cost per page. Copies of the DEIS, Fact Sheet, and other information will be available for review at reading rooms in the following locations in Polk County: (1) Bartow Public Library, 315 East Parker Street, Bartow, Florida 33830; (2) Lakeland Public Library, 100 Lake Morton Drive, Lakeland, Florida 33801; (3) Tampa Electric Company, Mulberry Customer Service, 101 2nd Street, NW, Mulberry, Florida 33860; (4) Ft. Meade Public Library, 75 East Broadway, Ft. Meade, Florida 33841; and (5) Bruton Memorial Library, 302 McLendon Street, Plant City, Florida 33566. A limited number of copies of the DEIS are also available from Mr. Chris Hoberg, Federal Facilities Branch, at the above EPA address (Telephone: 404/347-3776). EPA has requested the Florida Department of Environmental Protection certify the discharges in accordance with the provisions of Section 401 of the Clean Water Act (33 U.S.C. Section 1341). Please bring the foregoing to the attention of persons whom you know will be interested in this matter. If you would like to be added to our public notice mailing list, submit your name and mailing address to the Office of Public Affairs at EPA's address given above.

[illegible] 2/24/94

APPENDIX G

Public Comments on DEIS and EPA Draft NPDES Permit

- Transcript of EPA Public Hearing
- EPA Responses to Public Hearing Comments
- Public Comment Letters on DEIS and EPA Responses

Transcript of EPA Public Hearing

Preface

The following is a transcript of the EPA joint EIS/NPDES permit public hearing held on March 31, 1994, in Bartow, Florida. In this transcript, the DOE IGCC demonstration unit (Polk Unit 1) proposed for the Tampa Electric Company Polk Power Station was characterized as having a capacity of "250 MW" in the DOE introductory remarks regarding the DOE clean coal technology demonstration program. To avoid confusion, it should be noted that in the EIS, this unit was characterized as having a "260-MW" capacity. Specifically, Polk Unit 1 is proposed as a "nominal net" 260-MW facility, since the actual capacity will vary due to plant performance affected by final equipment efficiencies and various conditions such as ambient air and cooling water temperatures.

In addition, the transcript lists Dr. William C. Zegel as a "speaker" at the public hearing. Dr. Zegel is the president of the EPA third-party contractor assisting EPA in the development of this EIS. While Dr. Zegel was asked by EPA to provide a presentation summarizing the DEIS as part of the public hearing introductory remarks, he and the EPA/DOE panel members should not be considered public speakers. As such, only one public speaker provided comments at the EPA public hearing (Mr. James J. DeGennaro of the Central Florida Development Council).

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
DRAFT PERMIT

FOR

TAMPA ELECTRIC COMPANY
POLK COUNTY POWER STATION, NPDES NO. FL0043869

PUBLIC HEARING

County Administration Building
330 Church Street
Bartow, Florida

Thursday,
March 31, 1994

VERBATIM REPORTERS
"Serving the State of Florida"
1(800)523-3767

PANEL MEMBERS:

KARRIE-JO SHELL
CHRIS HOBERG
HEINZ MUELLER, CHAIR
GARY FRIGGENS

SPEAKERS:

WILLIAM C. ZEGEL,
Water and Air Research, Inc.

JAMES J. DeGENNARO
Central Florida Development Council

P R O C E E D I N G S

(7:03 p.m.)

MR. MUELLER: We'll go ahead and try to get started.

If anyone comes in late, they're certainly welcome to sign up in the back and get the material -- get some material both at the registration table and the table in the back. And you'll get every opportunity, I think, to participate.

I'd like to welcome all of you tonight. My name is Heinz Mueller. And I'm with Region IV in Atlanta, Chief of the Environmental Policy section.

I'm going to be the Hearing Officer for tonight's Public Meeting. Tonight's Public Hearing is being held pursuant to Public Participation requirements of the Clean Water Act and the National Environmental Policy Act; NEPA.

We're here tonight to obtain your comments on the Draft EIS and Draft NPDES Permit for Tampa Electric Company's proposal to construct and operate a new power plant and associated facilities in Polk County, Florida.

Net generating capacity at full build-out is proposed for 1,150 megawatts and that is being planned by the year 2,010.

Phase I, so called Polk Unit 1, is for 260 megawatts is being considered for a DOE Clean Coal Technology (CCT) demo project pending successful completion of an EIS.

Gary Friggens, who is over here on my left, will talk to you a little more on that particular demo process in a few minutes.

EPAs preparation of the DEIS was triggered by our responsibility under the new source and NPDES to meet the requirements and we have prepared this document in cooperation with both the Department of Energy and U.S. Army Corps of Engineers.

The primary Federal Actions that are addressed in the DEIS include EPAs proposed issuance of an NPDES water permit which is required by the applicant to operate the power station, DOE's proposed financial assistance under the Clean Coal Program for Phase I of the project, and the Corps of Engineers proposed Section 404 Wetland permit required for the construction of the project.

Again, the copies of the draft EIS and draft Permit were mailed out to an extensive mailing list and are also available in a number of local public libraries, as well as the Tampa Electric Company's office in Mulberry, Florida.

Additional copies, as I said earlier, are available at the two tables, at the back of the room.

At tonight's meeting, both oral and written comments on the EIS and draft NPDES permit will be accepted.

And we will be doing a hearing transcript via Court Reporter. Persons wishing to respond in writing should and can do so by the close of the 45-day public comment period, but need to postmark their comments no later than April the 11th, '94.

Miss Lena Scott, who's sitting over there at the table, is the Public Notice Coordinator and the comments should be addressed to her attention at EPA Region IV in Atlanta.

In addition to the Federal permitting and NEPA requirements, the project also has been the subject of a separate state power plant siting and air permitting process.

I don't think we have anyone here from the State tonight; do we?

We've been in close consultation with the State Power Plant people and their process was wrapped up 1/25/94, in terms of the final action on the site certification for construction of this power station.

The PSD Air Permit was signed by the State on

2/24/94.

A final environmental impact statement will be published after the close of the DEIS and NPDES permit public comment period.

As I said previously, that will be after April the 11th. At that time, we will be addressing any comments that we receive at tonight's meeting, as well as any comments that we receive by mail.

And we'll be preparing a Final EIS for public review and an additional 30-day comment period, after which time both EPA and the two other Federal Agencies, DOE and the Corps of Engineers will be doing separate Record of Decisions on their respective actions.

I'd like to remind anyone who has not yet registered, and we do have a number of people that registered so far, I think I only had one maybe, who wants to speak tonight, you still have that opportunity to do so now or anytime during tonight's meeting.

Also, if you would like to be on the mailing list for the final EIS or the record of decision, it's also important that you be on our registration list.

Now I would like to introduce Mr. Gary Friggens from DOE, Morgantown's office, to give us a brief overview of the Clean Coal Project.

Gary?

MR. FRIGGENS: Thank you, Heinz.

I'm going to use this view graph machine over here. And I think it will be visible to most every one in the room except maybe you might have to move, if you want to see.

I appreciate the opportunity to take just a very few minutes to talk about the Department of Energy's Clean Coal technology program and our interest in the Polk Power project.

The clean coal technology program, or CCT program is comprised of projects that are co-funded by both the private sector and by the Department of Energy.

In fact, the enabling legislation provides that the Department can contribute up to 50 percent of the total estimated cost of the project, but no more than that.

The projects that are being run under the program are demonstration projects of what we call Clean Coal technologies.

These are technologies that are, obviously, using coal. They are environmentally superior, they are energy efficient and they are affordable. They are cost effective in the way of economics for power.

And finally, our ultimate objective is to

demonstrate these new advanced technologies so that they can be commercially accepted and become widespread commercially in the market place so that the entire nation can take advantage of the benefits.

In addition to fostering commercialization, the Department's also interested in a couple other important aspects of the program.

One is we're, of course, interested in the use of U.S. coal because U.S. coal is a vast national resource. It's not required that we import coal to fuel our nation; we have plenty here. So from a national security standpoint, it's important.

It's also important from a domestic well-being standpoint. That is, to have reliable, clean and efficient power is certainly important to our economic well being in the country.

And in addition to that, it's important that our technology developers and vendors maintain a competitive position in the global market place.

So from those two aspects, we're interested.

And finally, but certainly not least important, is the fact that these technologies are able to reduce both present and future pollutant emissions.

Present, by being applied to existing plants or future, in the way of new applications, new plants

and, of course, the Polk Power Plant will not be applied to an existing plant but will be a new plant.

Coal's important to us because it is used to produce 56 percent of the nation's electricity. And we don't project that figure going down more than a few percent over the next 40 years.

In fact, by 2030, we projected there will be twice the demand for electricity in this country that there is today. And so coal's going to have to be, continue to be, an important part of how we provide the nation with power.

Under the DOE program our function, we view it, is as being a partner with the private sector. We've approached these projects not as a contractor relationship, but as a partnership.

So that we view our contribution financially as underwriting the risks of demonstrating these advanced technologies.

We're also interested in promoting commercialization in any way that we can. We also have an active R&D -- coal R&D program that helps us to continue to develop innovations for these technologies.

But, our philosophy is the private sector runs the project, they manage it, they're going to be the ones that commercialize it, so the user such as

Tampa Electric are going to be making the project decisions.

And we're going to act as an interested partner, but we're not going to be giving directives and orders.

The clean coal program is on the order of eight years old now. And there are 45 projects currently in the program.

The projects were obtained through a series of five requests for proposals, if you will, or for what we call program opportunity notices, PONs.

And you can see that these have been scattered out and over the last eight years, since 1986. We just had the most recent selections in May of last year.

The program's national in nature. This map shows that the 45 projects, indeed, are scattered across the country. And I don't expect you to glean anything more than that from it. It's just an illustration of the nature of the program.

It's also a widespread program from the stand point of technologies. The Department of Energy is interested in developing a slate for a variety of these advanced clean coal technologies.

And this chart is intended to show you that

variety. I should define just a few of the acronyms on it.

AFBC is Atmospheric Fluidized Bed Combustion and so, obviously, PFBC then is Pressurized Fluid Bed Combustion.

IGCC is Integrated Gasification Combined Cycle and that's a type of technology that would be installed at the Polk Power Plant.

And the other acronym, I guess, that needs explanation is EFCC. That's an Externally Fired Combined Cycle and that deals with a combination of a gas turbine and a steam turbine, which is operated on hot air so that the gas turbine doesn't get contacted directly by dirty gases.

Well, what are technology features of gasification combined cycle? I mentioned that it has superior environmental performance, low SO2 and nitrogen oxide and particulate emissions, reduced carbon dioxide emissions.

It produces an environmentally benign or even usable solid waste. And for instance in many technologies including one to be demonstrated here, the ash from the process would be used in applications such as road aggregate.

IGCC inherently has the benefit of high

energy efficiency so you get more power for the amount of coal that you use to fire the process.

It's got a very competitive installed cost we project, when it becomes commercial. Of course, operating reliability and safety are important and it offers that.

And also fuel flexibility. It's able to handle the wide variety of coals that we find in this country.

So from an overall stand point, the Department of Energy feels strongly that IGCC is an important technology for the future.

Finally with regard to the Polk Power Project our interest, specifically, is to demonstrate this gasification combined cycle technology in a gray field application. That is, in an application that builds a plant from scratch, where nothing exists now.

We're interested in operating the plant in a utility environment that operates under the constraints that a U.S. utility operates under with regard to various aspects of providing power.

And finally, we're interested in demonstrating at this nominal size range of basically 250 megawatts.

We're also interested in demonstrating an

advanced hot gas cleanup process which will be accomplished here at Polk.

And finally we're interested in demonstrating this advanced concept for a gas turbine that uses nitrogen to bolster the power output and at the same time help reduce the nitrogen emissions.

And finally, I just need to mention that the Department of Energy's contribution to the project amounts to 130 million dollars plus, I was going to say some change but it's not change to me and maybe not to anyone else in the room.

But it is a substantial contribution by the Department of Energy and it shows the importance that we place in demonstrating this technology.

And so with that, I thank you for your attention and I'll turn it back over to Heinz.

Thank you.

MR. MUELLER: Thank you, Gary.

Since we have such a relatively small, intimate group here tonight, we can probably go with a slightly more relaxed format, so I will say if there's anyone out in the audience that has a specific technical question of Gary, this might be a good time to entertain that before we go on.

Are there any questions?

Okay. If not, I would next like to introduce Ms. Karrie-Jo Shell of our NPDES permit staff.

Karrie-Jo will give you a brief overview of the draft proposed permit.

MS. SHELL: Yes. Good evening.

My name is Karrie-Jo Shell and I'm an Environmental Engineer with the Permit Section in the Water Management Division of EPA, Region IV in Atlanta.

It has been my responsibility to prepare the draft NPDES permit for the Polk Power Station Project.

On July 30, 1992, Tampa Electric Company filed its initial application for an NPDES permit for the discharge of treated waste water from the proposed Polk Power Station project to an unnamed reclaiming lake that leads to Little Payne Creek.

The Polk Power Station project will be constructed near State Road 37 and County Road 630 in Polk County.

Since the project will primarily generate and transmit electricity by burning coal and we use a steam electric cycle, EPA tentatively determined it to be a new source on January 11, 1994.

EPA noticed this determination on February 17, 1994 and it's not been challenged.

Under the provisions of the Clean Water Act,

a waste water discharge to waters in United States must meet two different sets of criteria.

The first is that the effluent must meet the requirements of the applicable water quality standards.

The proposed facility will have two outfalls which would discharge process waste water covered by an applicable effluent guideline to waters in the U.S.

Outfall 001 will consist of cooling reservoir blow down. Contributing discharges to the cooling reservoir include recirculated cooling water, treated industrial waste water plant effluent, treated sanitary sewage treatment plant effluent, low volume waste, contaminated storm water from industrial areas, ground water seepage and ground water makeup.

Outfall 002 will consist of storm water runoff from areas associated with industrial activity. The receiving stream is an unnamed reclaimed lake that leads to Little Payne Creek.

This water quality is designated as Class III waters which are to maintain -- are to be maintained for recreation, promulgation and maintenance of a healthy, well-balanced population of fish and wildlife.

A draft permit and a fact sheet describing

the rationale for the effluent limits and other permit conditions were prepared by EPA and sent to the Tampa Electric Company and to the Florida Department of Environmental Protection for review.

The Public Notice of EPA's proposed issuance of this permit was published and distributed on February 28, 1994.

Now I'd like to go over Part I of the permit.

Part I contains requirements for discharge temperature, PH, total phosphorus, total ammonia, un-ionized ammonia, dissolved oxygen, oil and grease, total nitrogen, total Kjeldahl nitrogen, total sulfate, total suspended solids, total residual chlorine, total recoverable arsenic, total recoverable beryllium, total recoverable cadmium, total recoverable copper, total recoverable iron, total recoverable lead, total recoverable nickel, total recoverable selenium, total recoverable silver, total recoverable thallium, total recoverable zinc, specific conductance, gross alpha particle activity, carbonaceous biochemical oxygen demand, total hardness and acute whole effluent toxicity.

Part II of the permit contains standard conditions which are included in all NPDES permits.

Part III contains special conditions which

are designed to assure that controls are implemented that will minimize water pollution.

Part IV contains Whole Effluent Toxicity Testing requirements.

And Part V contains best management practices plan requirements.

The Fact Sheet, which is attached after the draft permit, contains the rationale for the permit, as well as other relevant information.

In preparing this draft NPDES permit, proposed limitations and special conditions were based on the application, Florida Water Quality Standards, site specific considerations, best professional judgments, conditions based on the Draft Environmental Impact Statement tentative requirements, and the proposed Conditions of Site Certification prepared by the staff of the Florida Department of Environmental Regulation.

As indicated in the Public Notice, all pollutant limitations and other conditions are tentative and open to comment.

Thank you.

MR. MUELLER: Thank you, Karrie-Jo.

Again, are there any technical questions on the permit for Karrie-Jo that we might answer at this

time?

Okay. If not, I would next like to introduce Mr. Chris Hoberg, who is the EPA Project Manager and Bill Zegel, our Contractor, to give you a brief, very brief over view of the Draft EIS.

Okay, Chris?

MR. HOBERG: Thanks, Heinz.

I am Chris Hoberg and I'm the EPA Project Manager for the Environmental Impact Statement for this proposed project.

Before we hear your comments or maybe comment, singular tonight, I wanted to introduce the Contractor that helped EPA prepare this Environmental Impact Statement and let him provide, as Heinz said, an over view of this EIS and the project in general.

The Contractor that we used was Water and Air Research, Incorporated, commonly known as "WAR," out of Gainesville.

The Contractor was proposed to us by Tampa Electric and was approved by EPA in what is known as a Third Party arrangement.

And in this type of arrangement, EPA directs the Contractor and the applicant compensates the Contractor.

Before we get into the real formal

introduction of Bill Zegel, the President, I thought I would highlight some of the things that EPA thought was important for this particular EIS.

As many of you know probably, that EPA is mandated to examine several environmental consequences of various impacts, specifically, water quality, air quality, noise, hazardous waste; things of that nature and several others.

So, obviously, we looked at those and emphasize those in the EIS.

Also looked at the human health impacts and cumulative impacts and cumulative impacts in this case, was important to us because there are other proposed and existing power plants in the immediate area.

Our impact analysis generally looked at the full build out situation; that is, as Heinz mentioned, 1150 megawatts is what Tampa Electric is proposing by 2010.

So we looked at those impacts, as opposed to just Phase I or Phase II.

The impact analysis also looked at ways of avoiding impact, so avoidance minimization, pollution prevention methods, things of that nature as well as mitigation for some unavoidable impacts. Best example probably would be of Wetland mitigation.

For us already heard tonight from Karrie-Jo that obviously we emphasize the NPDES permit as the NPDES permitting agency and we put a copy of that permit, that draft permit, in the EIS.

And we've also heard from our DOE representative that we also stress the clean coal technology programs since Phase I is scheduled to be a DOE CCT demonstration.

EPA is also very concerned about the full implementation of the NEPA process so as such, we looked at alternatives.

We looked at several alternatives and we looked at project need in detail.

As far as the alternatives, and sub alternatives, we tried to make this section sort of user friendly. That is, we would provide several alternatives and sub alternatives rather than just rejecting them without giving a reason why we rejected them.

We looked at them in more detail and gave some environmental reasons as to why we rejected some and not others.

Also the documentation of the determination for need for power, we certainly -- EPA recognizes the role of the Florida Public Service Commission in this

regard.

And we documented their process and also the process that Tampa Electric used.

And as Bill Zegel will probably tell you this evening, in case you didn't know, that the FPC, at this time, has approved 260 megawatts.

And so any additional construction would need to be also approved by the Florida Public Service Commission if, indeed, Tampa Electric is going to completely build this thing out to 1150 megawatts.

Finally I'll mention two newcomer topics in this EIS. And those are biodiversity which we looked out and environmental justice which we looked at.

Biodiversity basically is the number and kinds of plants and animals in the area that would be affected by this project.

And environmental justice is basically a new program at EPA that is intended to protect minorities and low income groups from being disproportionately impacted by a project such as this one.

Okay. Having said that, I guess I'm finally ready, Bill, to introduce you. So, Dr. Bill Zegel of the -- of Water and Air Research, the President, we'll let him describe some detail of the EIS and its findings.

Bill?

MR. ZEGEL: Thank you, Chris.

The Environmental Impact Statement is structured in the form of presenting the project in the first section moving to describing the existing environment at the site which is about 94 percent, or will be 94 percent mined for phosphate at the time of construction.

And then looking at the Region of the proposed action, and then looking at the impacts, and I'd like to move directly to present you with some information with regard to the impacts at the proposed site.

The major environmental impacts of the Tampa Electric Company's proposed project were assessed, including construction related impacts, operation related impacts, and cumulative impacts.

The cooling reservoir discharges throughout the year would comply with all but the thermal standard for State of Florida Class III surface water quality standards.

And the mixing zone located 250 feet from the point of discharge would be required to reduce the temperature to fewer than three degrees Fahrenheit above ambient temperature in the receiving unmanned

reclaimed lake water body during winter conditions.

The proposed ground water withdrawals and associated draw downs are not expected to affect other water users in the site vicinity.

Impacts to water quality in the Floridan (Phonetic) or intermediate aquifers are not anticipated from the proposed project operations.

Human health risk from radiation exposure during construction is negligible due to the absence of phospho gypsum on the site.

Evaluations of operation related impacts indicate that operation of the proposed power station would not cause or contribute to a violation of any ambient air quality regulations, including consumption or PSD increments or national State of Florida ambient air quality standards.

Analysis indicates that public health in Polk County and adjacent counties would not be jeopardized by breathing the air from the proposed project operations.

This is based on the results of a risk assessment. The total cancer risk for individuals due to direct inhalation of the proposed project air emissions under relatively conservative conditions, is about two cancers per one million persons.

Single events associated with the project may generate significant noise. However, average noise levels contributed by the operation of the proposed Polk Power Station would be similar to the existing noise levels and it would be at relatively low noise levels for nearby residences.

The proposed project construction, including an 860 acre cooling reservoir would result in the loss of approximately 253 acres of Corps of Engineers jurisdictional Wetlands.

These Wetlands are mine cuts and highly-stressed wetlands.

Compensation for this loss will be made by Tampa Electric Company through Wetland Enhancement or creation.

Together with site reclamation, these mitigation measures would result in an overall net increase in open water and wetland habitats over its pre-mining state, and would help restore the area's biodiversity.

Under separate State process, Florida Department of Environmental Protection required reclamation measures would also be implemented at the site.

The proposed wetland mitigation reclamation

and development planned for the proposed Polk Power Station site would remain at -- in 799 acres of wetlands, after reclamation of the site is completed.

And these 799 acres of wetlands represent a net increase of 187 acres of wetlands relative to site pre-mining conditions.

The impacts on the other acreages, as well -- The impacts on the biological components, plants and animals due to construction of the proposed project are tempered, in that the majority of the site currently consists of a damaged ecosystem from mining phosphate ore.

The unmined areas have been highly altered through various disturbances associated with the mining activities.

Clearing vegetation during construction would impact the resident wildlife, although mobile species will be able to relocate to other suitable nearby habitats.

And noise from the construction equipment is expected to have only temporary effects on wildlife.

Adverse effects to local or regional terrestrial and wetland vegetation resulting from power plant operations are not anticipated.

Ground water withdrawals, as we mentioned,

are not expected to result in changes to terrestrial or wetland habitats.

The discharges from the cooling reservoir would meet the Class III standards, as we said, and no adverse biological impacts are expected outside of possibly this thermal mixing zone in the reclaimed lake for any off-site waters.

During operation of the proposed Polk Power Station, pollution prevention and best available control technology procedures would be implemented to minimize air emissions harmful to plants and animals.

The rights of way for the proposed transmission lines and existing transmission lines that would be interconnected, would comply with the State of Florida EMF rule and are not expected to have significant impacts upon adjacent areas and land uses.

The U.S. Fish and Wildlife Service raised concerns regarding the possible presence of red cockaded (Phonetic) woodpecker and Florida scrubjays.

Upon exchange of information and inspection of the site, Fish and Wildlife Service agrees that no threat nor endangered species or species of special concern are expected to be significantly impacted by the proposed project.

In the socioeconomic regime both construction

and operation of the proposed project would have positive socioeconomic impacts.

At the proposed project build out, 210 persons would be employed, the majority of whom are expected to be drawn from the local labor pool.

The total cumulative annual operational payroll is estimated at about 109 million, 1992 dollars, between the years of 1995 and 2010.

Ad Valorem taxes generated by the project for Polk County would increase from 1.9 million in 1996 to 19.6 million in 2011.

A review with the State of Florida Cultural Resources office in the areas affected by the proposed project has led to an initial finding by the State Historic Preservation Officer of no expected impact to known historic or archaeological resources.

The proposed project has included features for impact avoidance such as implementing existing conservation, land management, cogeneration energy management and cogeneration programs rather than constructing additional power plants.

Two; pollution prevention such as conversion of waste sulfur compounds into saleable sulfuric acid.

Pollutant minimization such as use of DOE clean coal technology to reduce emissions of metals,

acid gases and organics from use of coal.

The use of best management practices and pollution prevention conditions in accordance with the requirements of the EPA draft, NPDES permit and the use of best available control technology for air pollution control.

Where impacts cannot be avoided, mitigated measures such as the development of wetlands to replace lost wetlands have been included.

Cumulative impacts affecting the proposed site and surrounding areas were assessed for construction and operation of the full build out of the proposed power station.

Cumulative impact assessments were made for air quality, surface and ground water quality, aquatic and terrestrial ecology, noise, land use, transportation, and secondary induced impacts from construction and operation of the proposed facility.

In the air quality analysis emission from the proposed -- in the air quality analysis, emissions from the proposed Florida Power Corporation, Polk County Power Plant, the newly operational Teco Power Service Power Plant in Hardee County, and the proposed Florida First Processing Hazardous Waste Incinerator are also considered.

No adverse human health effects due to the cumulative emissions of materials found in Polk County Power Station stack gases are anticipated.

Unresolved issues that remain at this time are the permitting action by the Corps of Engineers regarding the dredging and filling of wetlands, the finalization of the transmission line right-of-ways within the designated corridor and the possibility of additional air quality modeling when Phase II and Phase III units are proposed for the power station, to satisfy requests from the Department of Interior.

The EIS action alternatives for EPA for this Environmental Impact Statement are to issue, issue with conditions or deny the NPDES permit for operation of the proposed power station.

EPAs preferred alternative is to issue the NPDES permit with conditions, pending successful completion of the NEPA process.

DOEs action alternatives are to provide or deny costs shared financial assistance.

And DOEs preferred alternative is to provide financial assistance, pending successful completion of the NEPA process.

And that gives you a very brief summary of the impacts that are presented in the document.

There's a lot more information there for folks that would like it and we have an executive summary of the overall document available to you.

Thank you.

MR. MUELLER: Thank you, Bill.

Are there any questions to Bill or Chris, in regard to the EIS or any of the impacts that have been addressed in that document?

If not, again, I'd like to thank both you, Bill, and Chris, for that good over view of a relatively complicated and voluminous document.

I would now like to open it up for any comments that we might have and normally we get started with any public officials in the audience that may want to introduce themselves or possibly make a short statement.

Are there any public officials?

Okay. If not, I have one card here for a possible speaker. Would Jim -- I'm probably going to mess up your last name, Jim, but I'll try. DeGennaro?

Would you like to make a brief comment?

MR. DEGENNARO: Yes, sir. Very good, old name.

MR. MUELLER: Okay. Great.

MR. DEGENNARO: Appreciate it.

MR. MUELLER: If I might ask you, I -- to give your name and your affiliation and any written statement you might have to the Court Reporter, if you can. It would make her transcript a lot easier.

I usually have about two pages of rules, but I thought I'd dispense with them tonight for everyone's sake, so.

MR. DEGENNARO: My name is Jim DeGennaro. I'm the Vice President of Industry Development for the Central Florida Development Council.

We are a public private partnership between the Board of County Commissioners in Polk County and all of the Chambers of Commerce.

So we're County-wide in nature and our main function is to promote Polk County businesses and to recruit new industry to the area and help existing business grow.

The Board of County Commissioners is solidly behind the construction and operation of the Polk Power Station.

They made special provisions in our Comprehensive Plan so this project could be built on the former phosphate mine lands.

The project has received very positive comment throughout the County and its varying

communities.

Polk County is emerging today as Florida's energy center. And there's many reasons for this, why this project should be here.

Number one is the inmigration of the population in the State of Florida. Polk County's bigger than Rhode Island. We have a lot of available land and we have a very good business climate here.

And as we all know, there's a tremendous need for extra energy production in our State to service as we grow into the future.

The project has numerous positive impacts on our County. Our unemployment rate traditionally ranges between eight and ten percent.

This project will bring us, literally hundreds, if not up to a thousand construction jobs and then many permanent jobs. And we sorely need them.

The Florida Department of Commerce has awarded Polk County recently a quick response training grant. They gave that to Polk Community College so that we could train power plant operators for this facility.

The Polk Power Station is one of the greatest opportunities to come to Polk County in many, many years.

We appreciate your thoughtful and thorough review of this project. We are very thankful for the participation of the Department of Energy in this project.

And as we all know, time is money. We hope the whole permitting regulatory process is completed as swiftly as possible so that we can get this very important project built.

Thank you for your time.

MR. MUELLER: Okay. Thank you very much.

Is there anyone else in the audience that would like to speak or ask a question, now is your opportunity. Throw it open.

Okay. No takers?

Okay. Again, I would like to thank every one for coming tonight. And at this point, the official Public Hearing is adjourned.

(Whereupon, the proceedings were concluded at 7:50 p.m.)

* * * * *

CERTIFICATE

STATE OF FLORIDA

COUNTY OF POLK

I, SANDRA L. GRAFF, Court Reporter and Notary Public in and for the State of Florida at Large, do hereby certify that I reported the foregoing proceedings.

I further certify that the foregoing pages, numbered from 1 through 31, inclusive, constitute a true, complete and accurate transcript of said proceedings as contained on the tapes and notes reported by me at said proceedings and transcribed at my direction.

I further certify that I am not of counsel, nor related to any party or attorney involved herein, nor am I financially interested in the outcome of this action.

WITNESS my hand and official seal this 8th day of APRIL, 1994.

Sandra L Graff

NOTARY PUBLIC STATE OF FLORIDA

SANDRA L GRAFF
My Comm Exp. 10/12/97
Bonded By Service Ins
No. CC322986

EPA Responses to Public Hearing Comments

Speaker #1: MR. JAMES J. DEGENNARO; CENTRAL FLORIDA DEVELOPMENT COUNCIL

Thank you for your comments. No response necessary.

Public Comment Letters on DEIS and EPA Responses

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

ATLANTA REGIONAL OFFICE, REGION IV
Richard B. Russell Federal Building
75 Spring Street, S.W.
Atlanta, Georgia 30303-3388

March 2, 1994

Mr. Heinz J. Mueller
Chief - Environmental Policy Section
U.S. Environmental Protection Agency
Region IV
345 Courtland Street, NE
Atlanta, Georgia 30365

Dear Mr. Mueller:

This refers to your memorandum dated February 3, 1994, transmitting the Draft Environmental Impact Statement for the Tampa Electric Company - Polk Power Station project.

Our review indicates there will be no significant adverse impact on any HUD programs as a result of the project.

Thank you for the opportunity to review and comment on your Draft Environmental Impact Statement.

Very sincerely yours,

Warren J. Howze

Warren J. Howze
Director
Program Support Division, CPD

Letter #1: U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT; MARCH 2, 1994; WARREN J. HOWZE; DIRECTOR, PROGRAM SUPPORT DIVISION, CPD

Thank you for your comments. No response necessary.

United States Department of Agriculture
Soil Conservation Service
State Office, Room 248
401 S. E. First Avenue
Gainesville, FL 32601

March 17, 1994

Heinz J. Mueller, Chief
Environmental Policy Section
United States Environmental
Protection Agency
Region IV
345 Courtland Street, N.E.
Atlanta, Georgia 30365

Dear Mr. Mueller:

We have reviewed the Draft Environmental Impact Statement (DEIS) prepared for the Tampa Electric Company-Polk Power Station and have no comments at this time.

Thank you for the opportunity to review this document.

Sincerely,

Niles Glasgow

T. Niles Glasgow
State Conservationist

Letter #2: U.S. DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE; MARCH 17, 1994; T. NILES GLASGOW; STATE CONSERVATIONIST

Thank you for your comments. No response necessary.

MAR 25 1994
CC: Chris Haberg

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE

Southeast Regional Office
9450 Koger Boulevard
St. Petersburg, Florida 33702

March 21, 1993

Ms. Lena Scott
Public Notice Coordinator
U.S. Environmental Protection Agency
345 Courtland Street NE
Atlanta, Georgia 30345

Dear Ms. Scott:

The National Marine Fisheries Service (NMFS) has reviewed the Draft Environmental Impact Statement (DEIS) regarding the Polk Power Station proposed for construction in Polk County, Florida by Tampa Electric Company. Due to location of the affected wetlands and previous alteration from mining activities, we anticipate that living marine resources will not be significantly impacted by the proposed work. Therefore, we have no comments or objections.

If we can be of further assistance, please contact Mr. David N. Dale of our St. Petersburg Field Office at 813/893-3503.

Sincerely,

Edwin J. Kipp for

Andreas Mager, Jr.
Assistant Regional Director
Habitat Conservation Division

cc:
F/SE02
F/SE023-ST PETE

Letter #3: U.S. DEPARTMENT OF COMMERCE, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, NATIONAL MARINE FISHERIES SERVICE; MARCH 21, 1994; ANDREAS MAGER, JR.; ASSISTANT REGIONAL DIRECTOR, HABITAT CONSERVATION DIVISION

Thank you for your comments. No response necessary.

Rec'd
APR 0 1 1994
cc: Chris Hoberg

FLORIDA DEPARTMENT OF STATE
Jim Smith
Secretary of State
DIVISION OF HISTORICAL RESOURCES
R.A. Gray Building
500 South Bronough
Tallahassee, Florida 32399-0250
Director's Office (904) 488-1480
Telecopier Number (FAX) (904) 488-3353

March 28, 1994

Ms. Lena Scott
U.S. Environmental Protection Agency,
Region IV
345 Courtland Street, NE
Atlanta, Georgia 30345

In Reply Refer To:
Denise M. Breit
Historic Sites
Specialist
(904) 487-2333
Project File No. 940607

RE: Cultural Resource Assessment Request
Draft Environmental Impact Statement for the Tampa Electric Company - Polk Power Station
Polk County, Florida

Dear Ms. Scott:

In accordance with the procedures contained in 36 C.F.R., Part 800 ("Protection of Historic Properties"), we have reviewed the referenced project(s) for possible impact to historic properties listed, or eligible for listing, in the National Register of Historic Places. The authority for this procedure is the National Historic Preservation Act of 1966 (Public Law 89-665), as amended.

A review of our files indicates that the site submitted for the Site Certification Application has been previously surveyed and that no cultural resources were located as a result of that survey. Therefore, it is the opinion of this office that this portion of the project will have no effect on historic properties listed, or eligible for listing, in the National Register of Historic Places.

Once the alignment within the transmission line corridor is selected, location maps should be submitted for our review. This will enable us to determine whether the potential exists for unrecorded historic properties to be impacted by the proposed activities.

If you have any questions concerning our comments, please do not hesitate to contact us. Your interest in protecting Florida's historic properties is appreciated.

Sincerely,

Laura A. Kammerer

for George W. Percy, Director
Division of Historical Resources
and
State Historic Preservation Officer

GWP/Bdb

Letter #4: FLORIDA DEPARTMENT OF STATE, DIVISION OF HISTORICAL RESOURCES; MARCH 14, 1994; GEORGE W. PERCY; DIRECTOR, DIVISION OF HISTORICAL RESOURCES, AND STATE HISTORIC PRESERVATION OFFICER

Thank you for your comments.

EPA appreciates your previous coordination with Tampa Electric Company and EPA (see Appendix B) regarding this proposed project. Cultural resources are addressed in Sections 3.10 of this FEIS.

In regard to potential effects on cultural resources at the site proposed by Tampa Electric Company, we note the second paragraph of your comment letter:

> A review of our files indicates that the site submitted for the Site Certification Application has been previously surveyed and that no cultural resources were located as a result of that survey. Therefore, it is the opinion of this office that this portion of the project will have no effect on historic properties listed, or eligible for listing, in the *National Register of Historic Places*.

In regard to potential cultural resource effects along the project transmission line corridors, we note your requested submittal of location maps showing the alignment once finalized. Because this alignment is not yet certain since land access along the proposed alignment remains unclear, Tampa Electric Company will need to coordinate with your Florida SHPO office once their proposed alignment is finalized. The transmission line corridor for such an alignment is discussed in Sections 3.10 of the FEIS.

In addition to the transmission line corridors, interconnection with a prospective natural gas pipeline corridor will be needed by approximately 1999 for proposed natural gas units subsequent to Polk Unit 1. Coordination with your Florida SHPO office for cultural resource effects along the interconnecting alignment for such a pipeline (and with other agencies for other potential impacts) would be the responsibility of Tampa Electric Company, since it would occur after completion of this EIS NEPA process. Interconnection with a prospective natural gas pipeline is discussed in Sections 3.10 of this FEIS.

Similarly, interconnection with a possible fuel oil pipeline may be pursued by Tampa Electric Company if the pipeline becomes available and if Tampa Electric Company considers interconnection cost-effective. If pursued, appropriate coordination by Tampa Electric Company with your SHPO office would be needed for possible cultural resource effects along the interconnection pipeline alignment (as well as coordination with other agencies for other potential impacts). Potential interconnection with a possible fuel oil pipeline is discussed in Sections 3.10 of this FEIS.

In regard to the off-site portion of the railroad spur alignment proposed by Tampa Electric Company adjacent to the project site proposed by Tampa Electric Company, telephone coordination with your office has occurred for this approximately 200-ft alignment. A telephone log dated October 4, 1993 is provided in Appendix B. Your SHPO office may wish additional coordination for this alignment.

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DOCUMENTS DEPARTMENT - KS
THE LIBRARIES
COLORADO STATE UNIVERSITY
FORT COLLINS, CO 80523-1019
(303) 491-1879
FAX (303) 491-1195

March 28, 1994

Mr. Heinz J. Mueller
Environmental Protection Agency
Region IV
345 Courtland St, NE
Atlanta, GA 30365

Dear Mr. Mueller:

If available, please send us one copy of the following document. The citation for it is listed in the February 25, 1994 Federal Register. (We have the citation. Please send the document).

> **Draft Environmental Impact Statement: Tampa Electric--Polk 1150 Megawatt Power Station Construction and Operation**

including all supporting appendices and documents.

Please inform us, before sending, if there is a charge, or if you cannot supply. Please return a copy of this letter with your reply.

Thank you.

Fred C. Schmidt/ak
Fred C. Schmidt
Head, Documents Dept.

FCS/kls

Letter #5: COLORADO STATE UNIVERSITY, DOCUMENTS DEPARTMENT - KS, THE LIBRARIES; FRED C. SCHMIDT, HEAD, DOCUMENTS DEPARTMENT; MARCH 28, 1994

Thank you for your comments.

In response to your request for a copy of the DEIS for the proposed Polk Power Station, we have mailed you a copy of all three volumes of the DEIS shortly after receipt of your letter. We have also placed you on our mailing list for the FEIS. We appreciate Colorado State University's interest in including this EIS in your library system.

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Rec'd
APR 12 1994
cc: Chris Hebert

U.S. Department
of Transportation
Federal Aviation
Administration

Orlando Airports District Office
9677 Tradeport Drive, Suite 130
Orlando, Florida 32827-5397

April 5, 1994

Ms. Lena Scott
Public Notice Coordinator
U.S. Environmental Protection Agency
Region IV
345 Courtland Street, NE
Atlanta, GA 30345

Dear Ms. Scott:

We have reviewed the Draft Environmental Impact Statement (DEIS) entitled "Tampa Electric Company - Polk Power Station" dated February 1994 and have no environmental comments.

A notice of proposed construction will be required by Federal Aviation Regulations (FAR) Part 77, Objects Affecting Navigable Airspace, for an airspace determination on any proposed structures, if any, which would be more than 200 feet above ground level (AGL) at its location. More information is provided in the enclosed Advisory Circular No. 70/7460-2l, Proposed Construction or Alteration of Objects That May Affect the Navigable Airspace.

Thank you for the opportunity to review this document. Contact me at (407) 648-6583 if you need any additional information.

Sincerely,

C. Ed Howard
Plans and Programs Manager

Enclosure

PARTNERS IN CREATING TOMORROW'S AIRPORTS

U.S. Department of Transportation
Federal Aviation Administration

Advisory Circular

Subject: PROPOSED CONSTRUCTION OR ALTERATION OF OBJECTS THAT MAY AFFECT THE NAVIGABLE AIRSPACE

Date: 11/03/88 **AC No.:** 70/7460-2I
Initiated by: ATO-210

1. **PURPOSE.** This Advisory Circular provides information to persons proposing to erect or alter an object that may affect the navigable airspace. It explains the need to notify the Federal Aviation Administration (FAA) before construction begins and FAA's response to these notices as required by Federal Aviation Regulations (FAR) Part 77, Objects Affecting Navigable Airspace

2. **CANCELLATION.** This cancels AC 70/7460-2H, dated November 15, 1985.

3. **BACKGROUND.** The Federal Aviation Act of 1958, as amended, grants the FAA authority to "...require all persons to give adequate public notice, in the form and manner prescribed by the Secretary, of the construction or alteration, or of the proposed construction or alteration of any structure where notice will promote safety in air commerce as well as the efficient use and preservation of the navigable airspace and of airport traffic capacity at public-use airports." To this end, Part 77 of the FAR's was issued prescribing notice to the Administrator of certain proposed construction or alteration.

4. **WHY THIS NOTICE IS REQUIRED.** In administering FAR Part 77, the prime objective of the FAA is to ensure the safety of aircraft and the efficient use of navigable airspace by aircraft. The FAA recognizes that there are varied demands for the use of airspace, both by aviation and nonaviation interests. When conflicts arise out of construction proposals, the FAA emphasizes the need for conserving the navigable airspace. Therefore, early notice of proposed construction or alteration provides the FAA the opportunity to:

a. Recognize potential aeronautical hazards to discourage, prevent or minimize the adverse effects to aviation.

b. Revise published data or issue Notices to Airmen (NOTAM's) to assure that pilots are alerted to airspace changes made as a result of the structure.

c. Recommend appropriate marking and lighting to make such objects visible to pilots.

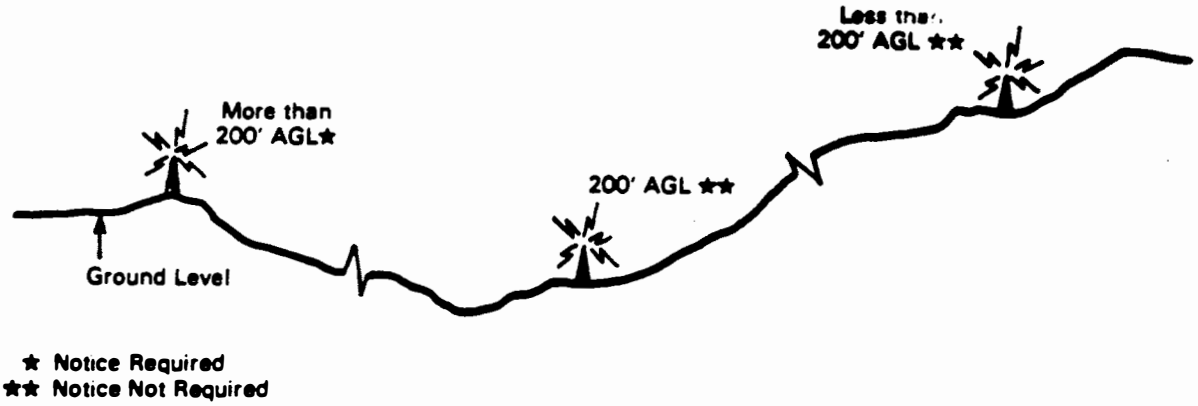
d. Depict obstructions on aeronautical charts for pilotage and safety.

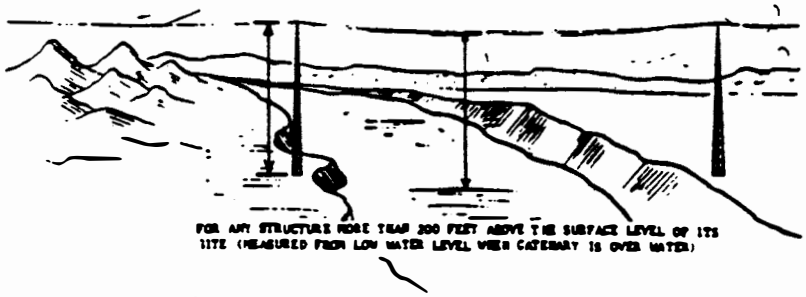
5. WHO MUST FILE NOTICE. Any person or their agent who intends to sponsor construction is required to submit notice to the Administrator if the proposed construction or alteration falls within any of the following categories:

a. **Greater than 200 feet in height.** The proposed object would be more than 200 feet above ground level (AGL) at its location

NOTE.—(See Figure 1).

Figure 1





b. **Near a Public Use Airport, Heliport, Seaplane Base, or Military Airport.** A public use airport, heliport, or a visually marked seaplane base that is listed in the current Airport /Facility Directory, the Alaska Supplement or the Pacific Chart Supplement, or near an airport operated by an armed force of the United States.

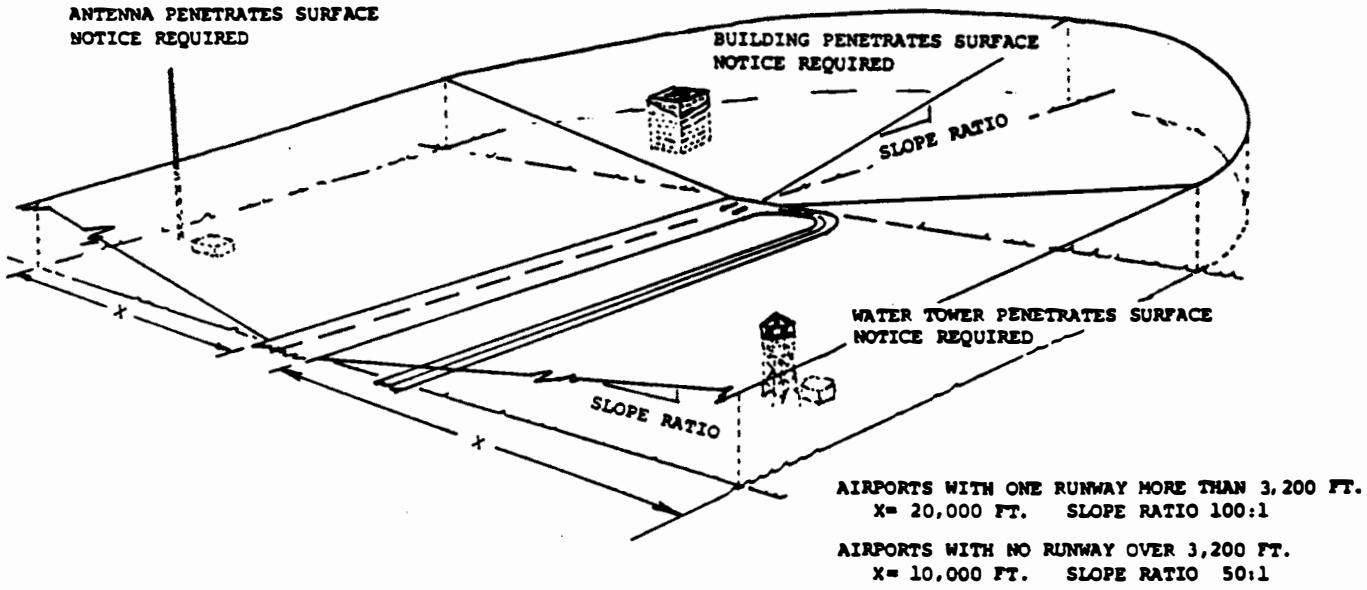
(1) **Airport or Seaplane Base.** The proposed object or alteration would be within:

(a) 20,000 feet of an airport or seaplane base with at least one runway more than 3,200 feet in length and the object would exceed a slope of 100:1 horizontally (100 feet horizontally for each 1 foot vertically) from the nearest point of the nearest runway.

(b) 10,000 feet of an airport or seaplane base having *no* runway more than 3,200 feet in length and the object would exceed a 50:1 horizontal slope (50 feet horizontally for each 1 foot vertically) from the nearest point of the nearest runway.

NOTE.—(See Figure 2)

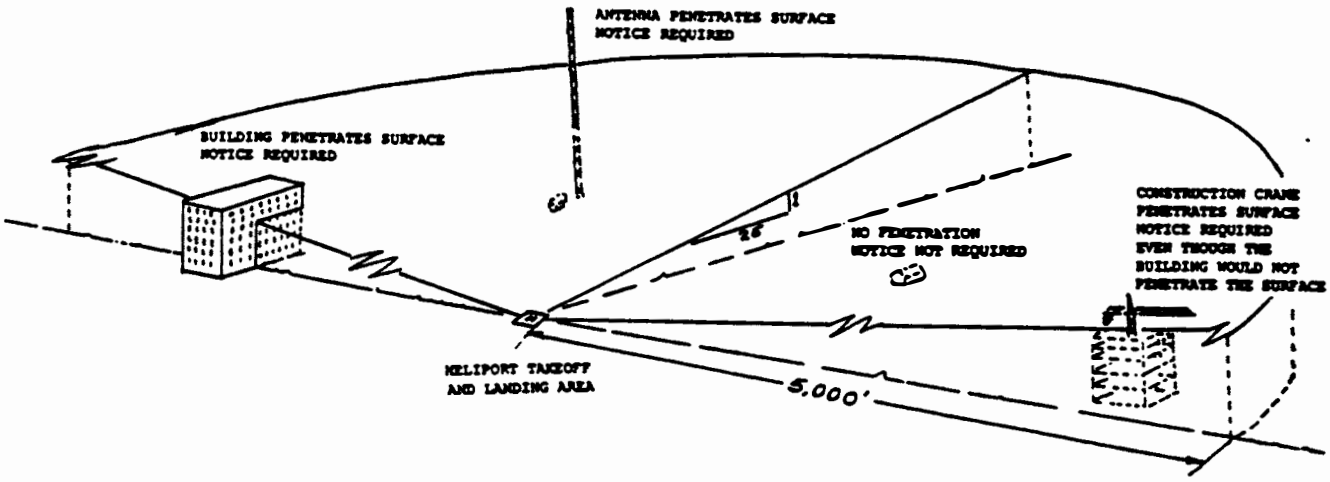
Figure 2



(2) Heliport. The proposed object would be within 5,000 feet of a heliport and would exceed a 25:1 horizontal slope (25 feet horizontally for each 1 foot vertically) from the nearest landing and takeoff area of that heliport.

NOTE.—(See Figure 3)

Figure 3



c. **Highways and Railroads.** The proposed object is a traverse way which would exceed one or more of the standards listed in Subparagraphs a and b above, after the height of the object is adjusted upward as follows:

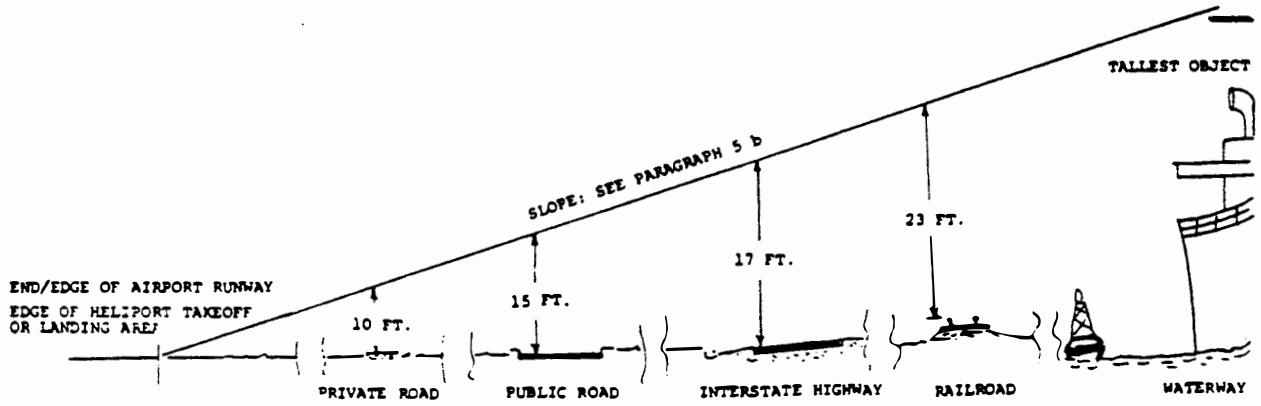
(1) Interstate Highways: 17 feet.

(2) Other public roadways: 15 feet.

(3) Private road: 10 feet or the height of the highest mobile object that would traverse the roadway.

(4) Waterway, railroad or any other thoroughfare not previously mentioned: 23 feet or an amount equal to the highest mobile object that would traverse the waterway, railroad or thoroughfare.

Figure 4



d. **Objects on a Public Use Airport or Heliport.** The proposed construction or alteration would be on an airport or heliport, regardless of height or location, or an airport operated by an armed force of the United States.

e. **When Requested by FAA.** The FAA may request a notice if available information indicates the proposal may exceed an obstruction standard or it is suspected the proposal may cause interference to aircraft or air navigational aids or affect instrument procedures.

6. **KIND OF OBJECTS.** The following are examples of structures requiring notice to the FAA.

a. **Proposed construction or alteration of structures such as:**

(1) Buildings.

(2) Towers.

(3) Roadways.

(4) Overhead communications and transmissions lines as well as the height of the supporting structures.

(5) Water towers and the supporting structure.

b. **Construction equipment or other temporary structures such as:**

(1) Cranes.

(2) Derricks.

(3) Stockpiles of equipment.

(4) Earth moving equipment.

7. **WHEN NOTICE MUST BE FILED.** Notice must be submitted:

a. At least 30 days before the earlier of the following:

(1) The date the construction or alteration is to begin, or

(2) The date the application for a construction permit will be filed.

b. On or before the date the application for construction is filed with the Federal Communications Commission (FCC), if the proposed structure is subject to FCC licensing requirements.

c. Immediately by telephone or other expeditious means, with written notification submitted within 5 days thereafter, if immediate construction or alteration is required as in cases involving public services, health or safety.

d. As early as possible in the planning stage but not less than 30 days before construction will begin. Notice is to be given when the construction or alteration will be located or may have effects that:

(1) Will be on an airport or heliport.

(2) Will be near air navigation facilities (See paragraph 5.e.).

(3) May affect air traffic control operations.

(4) May obstruct air traffic controllers line of sight capability.

(5) May affect air traffic control radar.

(6) May cause electromagnetic interference particularly construction associated with an AM, FM, or TV station including a change in authorized frequency or transmitting power.

(7) May cause transmitted signals to be reflected upon ground-based or airborne air navigation/communications equipment.

8. PENALTY FOR FAILING TO PROVIDE NOTICE. Persons failing to comply with the provisions of FAR Part 77 may be subject to a criminal penalty under Section 902 of the Federal Aviation Act of 1958, as amended.

9. HOW AND WHERE TO FILE NOTICE. Notification should be made on FAA Form 7460-1, Notice of Proposed Construction or Alteration. *Additional information such as charts and/or drawings which accurately depict the proposed construction or alteration should be included to facilitate the FAA's analysis of the project. (See Appendix 1).* The completed form should be mailed to the Manager, Air Traffic Division, at the regional office having jurisdiction over the area within which the construction or alteration will occur. The geographic area of jurisdiction, appropriate mailing address and telephone number is listed on FAA Form 7460-1 and below.

Alaskan Region

(AK)

Alaskan Region Headquarters
Air Traffic Division AAL-530
701 "C" Street, Box 14
Anchorage, AK 99513-0087
Tel. 907-271-5892

Central Region

(NE, IA, MO, KS)

Central Region Headquarters
Air Traffic Division ACE-540
601 East 12th Street
Kansas City, MO 64106
Tel. 816-426-3408

Eastern Region

(NY, PA, WV, VA, DC, MD, DE, NJ)

Eastern Region Headquarters
Air Traffic Division AEA-530
JFK International Airport
Fitzgerald Federal Building
Jamaica, NY 11430
Tel 718-917-1228

Great Lakes Region

(ND, WI, MI, SD, IL, OH, MN, IN)

Great Lakes Region Headquarters
Air Traffic Division AGL-530
2300 East Devon Avenue
Des Plaines, IL 60018
Tel. 312-694-7458

New England Region

(MA, NH, VT, RI, CT, ME)

New England Region Headquarters
Air Traffic Division ANE-530
12 New England Executive Park
Burlington, MA 01803
Tel. 617-273-7152

Northwe .t Mountain Region

(WA, OR MT, ID, WY, UT, CO)

Northwest Mountain Re .n Headquarters
Air Traffic Division A 4-530
17900 Pacific Hwy. S h
C-68966
Seattle, WA 98168
Tel. 206-431-2530

Southern Region

(KY, TN, NC, SC, GA, AL, MS, FL, PR)

Southern Region Headquarters
Air Traffic Division ASO-530
3400 Norman Berry Drive
East Point, GA 30344
Mail Address:
P.O. Box 20636
Atlanta GA 30320
Tel. 404-763-7646

Southwest Region

(NM, TX, OK, AR, LA)

Southwest Region Headquarters
Air Traffic Division ASW-530
4400 Blue Mound Road
Fort Worth, TX 76106
Mail Address:
Department of Transportation
Federal Aviation Administration
Fort Worth, TX 76193-0530
Tel. 817-624-5534

Western-Pacific Region

(HI, CA, NV, AZ, Pacific Islands)

Western-Pacific Region Headquarters
Air Traffic Division AWP-530
15000 Aviation Boulevard
Hawthorne, CA 90260
Mail Address:
P.O. Box 92007
Worldway Postal Center
Los Angeles, CA 90009
Tel. 213-297-1182

10. WHAT THE FAA DOES WITH THE NOTICE.

a. The FAA will acknowledge receipt of the notice by one of the following methods:

(1) A copy of the FAA Form is returned annotated to reflect that the proposal "is not identified as an obstruction...and would not be a hazard to air navigation."

(2) FAA Form 7460-7, Acknowledgment of Notice of Proposed Construction or Alteration, may be issued to indicate:

(a) The proposal is not identified as an obstruction and would not be a hazard to air navigation, or

(b) The proposal is presumed to be a hazard to air navigation pending further study. When this is indicated the acknowledgment will either specify that the FAA has initiated further study, or the proponent may request further study, in which event, the FAA will begin the study when the proponent so advises (See paragraph 10.b.).

b. The FAA acknowledges each notice after initial screening. The outcome of this screening may result in an acknowledgment that the structure would be an obstruction and if the proponent would lower to a specified height it would not be an obstruction. The acknowledgment may also offer the proponent the opportunity to request within 30 days further aeronautical study. If further aeronautical study is initiated, circular notices on FAA Form 7460-8 may be prepared and distributed for comments to those agencies, organizations, or individuals with known aeronautical interests to determine if the proposal would be a hazard to air navigation. State and local aviation authorities as well as various military organizations of the Department of

Defense are also offered the opportunity to comment on the aeronautical effects of the proposal.

c. All responses received by the end of the specified comment period are analyzed by the FAA regional specialists for valid aeronautical comments and objections.

d. The office conducting the study may decide to conduct an informal airspace meeting with interested parties to discuss the effects of the proposal and to gather additional facts or information relevant to the study.

e. The FAA specialists may negotiate with the proponent during the study process to resolve any adverse effect(s) on aeronautical operations. Many times, a minor reduction in height and/or relocation of a proposed structure will eliminate or sufficiently minimize adverse aeronautical effects that would permit the early issuance of a Determination of No Hazard to Air Navigation.

f. After the aeronautical study is completed, the regional office will normally issue a:

(1) Determination of Hazard to Air Navigation, or

(2) Determination of No Hazard to Air Navigation.

11. ASSISTANCE TO CONSTRUCTION PROPONENTS.

a. Airspace specialists are available in each regional office for assistance. Proponents are encouraged to call in advance for appointments. Limited resources often prevent the specialist from responding spontaneously without advanced planning or preparation.

b. Airspace specialists also recommend that, for timely determinations, construction proponents should submit complete and accurate data. United States Geological Survey quadrangle maps are available at nominal costs to aid in determining the geographical coordinates (latitude/longitude) and site elevation above mean sea level from:

U. S. Geological Survey
Reston, Virginia 22092

U. S. Geological Survey
District Branch
P.O. Box 25286, Bldg #41
Denver, Colorado 80225

c. Airport planners are available for assistance with construction proposals on federally obligated airports.

d. Proposals for electronic transmitting devices should include frequency, effective radiated power (ERP), radiation center height (RCAMSL), and antenna characteristics such as number of bays, beam tilt, and null fill.

12. ASSOCIATED PUBLICATIONS. The following publications contain obstruction criteria, marking and lighting standards and specifications for lighting and paint.

a. Federal Aviation Regulations (FAR) Part 77, Objects Affecting Navigable Airspace. This regulation sets forth the requirements for notice to the FAA of proposed construction or alteration and provides standards for determining obstructions to navigable airspace. FAR Part 77 (Stock No. 050-007-00276-9) may be ordered from:

Superintendent of Documents
U. S. Government Printing Office
Washington, DC 20402

b. Advisory Circulars. FAA Advisory Circulars are available free of charge from:

Department of Transportation
Subsequent Publication Section, M-494.3
400 7th Street, SW
Washington, DC 20590

(1) AC 70/7460-1, Obstruction Marking and lighting, describes the standards for marking and lighting structures such as buildings, chimneys, antenna towers, cooling towers, storage tanks, supporting structures of overhead wires, etc.

(2) AC 150/5190-4, A Model Zoning Ordinance to Limit Height of Objects Around Airports, provides a model zoning ordinance to be used as a guide to control the height of objects around airports.

(3) AC 150/5300-2D, Airport Design Standards - Site Requirements for Terminal Navigational Facilities, contains planning information on electronic and visual navigational aids and air traffic control facility siting and clearance requirements that influence the physical layout of airports.

(4) AC 150/5345-1, Approved Airport Lighting Equipment, lists equipment model numbers demonstrated to be in compliance with item (3), and the manufacturers names and addresses.

(5) **AC 150/5345-43, Specification for Obstruction Lighting Equipment,** contains specifications for equipment used in obstruction lighting systems.

c. **Marking Specifications and Standards.** Aviation colors and paint should conform with the following standards and specifications which are available free of charge from:

Business Service Center
General Services Administration
Washington, DC 20405

(1) **Federal Standard Number 595, Color Guide, Ready Mixed Paint.**

(a) Orange Number 12197
(b) White Number 17875
(c) Yellow Number 13538

(2) Federal Specification TI-P-59, Aviation Surface Paint, Ready Mixed, International Orange.

(3) Federal Specification TI-102, Aviation Surface Paint, Oil Titanium Lead-Zinc and Oil, Exterior, Ready Mixed, White and Light Tints.

d. **FAA Forms.** FAA forms are available free of charge from all FAA regional offices and headquarters.

(1) **FAA Form 7460-1, Notice of Proposed Construction or Alteration,** is used to notify the FAA of proposed construction or alteration of an object that may interfere with the navigable airspace.

(2) **FAA Form 7460-2, Notice of Actual Construction or Alteration,** is used to notify the FAA of progress or abandonment, as requested on the form. The FAA regional office routinely includes this form with a determination when such information will be required. The information is used for charting purposes, to change affected aeronautical procedures and to notify pilots of the location of the structure.

13. HOW TO PETITION THE ADMINISTRATOR FOR DISCRETIONARY REVIEW.

a. When a determination is issued under FAR Part 77.19 or Part 77.35 [illegible]en a revision or extension is issued under P[illegible]9(c), you may petition the FAA Administrator for a review if you:

(1) Are the sponsor of the proposed construction or alteration, or

(2) Stated a substantial aeronautical objection to the proposal during an aeronautical study, or

(3) Have a substantial aeronautical objection but were not given an opportunity to state it.

b. The petition must be submitted within 30 days after the issue date of the aeronautical study and must contain a full statement of the basis upon which it is made. Submit an original and three copies .

14. MISCELLANEOUS.

a. **An FAA determination** is a conclusion based on the study of a structure's projected impact on the safe and efficient use of the navigable airspace by aircraft. It should not be construed as an approval or disapproval of the project since only aviation issues are considered.

b. A notice filed with the FAA does not relieve the proponent of compliance with laws, ordinances or regulations of any other Federal, state or local governmental body.

John R. Ryan
Director, Air Traffic Operations Service

DO NOT REMOVE CARBONS

Form Approved OMB No 2120-0001

US Department of Transportation
Federal Aviation Administration

NOTICE OF PROPOSED CONSTRUCTION OR ALTERATION

Aeronautical Study Number

1. Nature of Proposal

A Type: ☒ New Construction ☐ Alteration

B Class: ☒ Permanent ☐ Temporary (Duration _____ months)

C Work Schedule Dates: Beginning 12/21/85 End 06/22/86

2. Complete Description of Structure

A Include effective radiated power and assigned frequency of all existing transmitters or installed AM, FM, or TV broadcast stations utilizing this structure

B Include data and configuration of power transmission lines and their supporting towers in the vicinity of FAA facilities and public airports

C Include information showing site orientation, dimensions, and construction materials of the proposed structure

FM Antenna Tower
ERP - 3,000 Watts
Frequency - 105.5 MHz

(If more space is required, continue on a separate sheet.)

3A. Name and address of individual, company, corporation, etc. proposing the construction or alteration. (Number, Street, City, State and Zip Code)

(202) 426-8777
Area Code Telephone Number

Eleanor J. Williams
D/B/A E. J. Enterprises
P. O. Box 23150
Washington, DC 20026

B. Name, address and telephone number of proponent's representative if different than 3 above.

N/A

4. Location of Structure

A. Coordinates (To nearest second)	B. Nearest City or Town, and State	C. Name of nearest airport, heliport, heliport or seaplane base
	Huntsville, Alabama	Huntsville North Arpt
34° 47' 30" Latitude	(1) Distance to 48 1 Miles	(1) Distance from structure to nearest point of nearest runway 6.2NM
86° 38' 49" Longitude	(2) Direction to 48 East	(2) Direction from structure to airport Northeast

5. Height and Elevation (Complete to the nearest foot)

A Elevation of site above mean sea level	1130
B Height of structure including all appurtenances and lighting (if any) above ground, or water if so situated	201
C Overall height above mean sea level (A + B)	1331

D Description of location of site with respect to highways, streets, airports, prominent terrain features, existing structures, etc. Attach a U.S. Geological Survey quadrangle map or equivalent showing the relationship of construction site to nearest airport(s). (If more space is required, continue on a separate sheet of paper and attach to this notice.)

Structure to be built on top of Drake Mountain. (See attached copy of quadrangle map and copy of Atlanta Sectional)

Notice is required by Part 77 of the Federal Aviation Regulations (14 C.F.R. Part 77) pursuant to Section 1101 of the Federal Aviation Act of 1958, as amended (49 U.S.C. 1101). Persons who knowingly and willingly violate the Notice requirements of Part 77 are subject to a fine (criminal penalty) of not more than $500 for the first offense and not more than $2,000 for subsequent offenses, pursuant to Section 902(a) of the Federal Aviation Act of 1958, as amended (49 U.S.C. 1472(a)).

I HEREBY CERTIFY that all of the above statements made by me are true, complete, and correct to the best of my knowledge. In addition, I agree to obstruction mark and/or light the structure in accordance with established marking & lighting standards if necessary.

Date	Typed Name/Title of Person Filing Notice	Signature
10/22/85	Eleanor J. Williams, Owner	Eleanor J. Williams

FOR FAA USE ONLY — FAA will either return this form or issue a separate acknowledgement

The Proposal:

☐ Does not require a notice to FAA.

☐ Is not considered an obstruction under any standard of FAR, Part 77, Subpart C, and would not be a hazard to air navigation.

☐ Is considered an obstruction under the standards of FAR, Part 77, Subpart C, but would not be a hazard to air navigation.

☐ Should be obstruction ☐ marked ☐ lighted per FAA Advisory Circular 70/7460-1, Obstruction Marking and Lighting.

☐ Obstruction marking and lighting are not necessary.

Remarks:

Supplemental Notice of Construction FAA Form 7460-2 is required only when the project is abandoned, or

☐ At least 48 hours before the start of construction.

☐ Within five days after the construction reaches its greatest height.

This determination expires on _____ unless

(a) extended, revised or terminated by the issuing office.

(b) the construction is subject to the licensing authority of the Federal Communications Commission and an application for a construction permit is made to the FCC on or before the above expiration date. In such case the determination expires on the date prescribed by the FCC for completion of construction, or on the date the FCC denies the application.

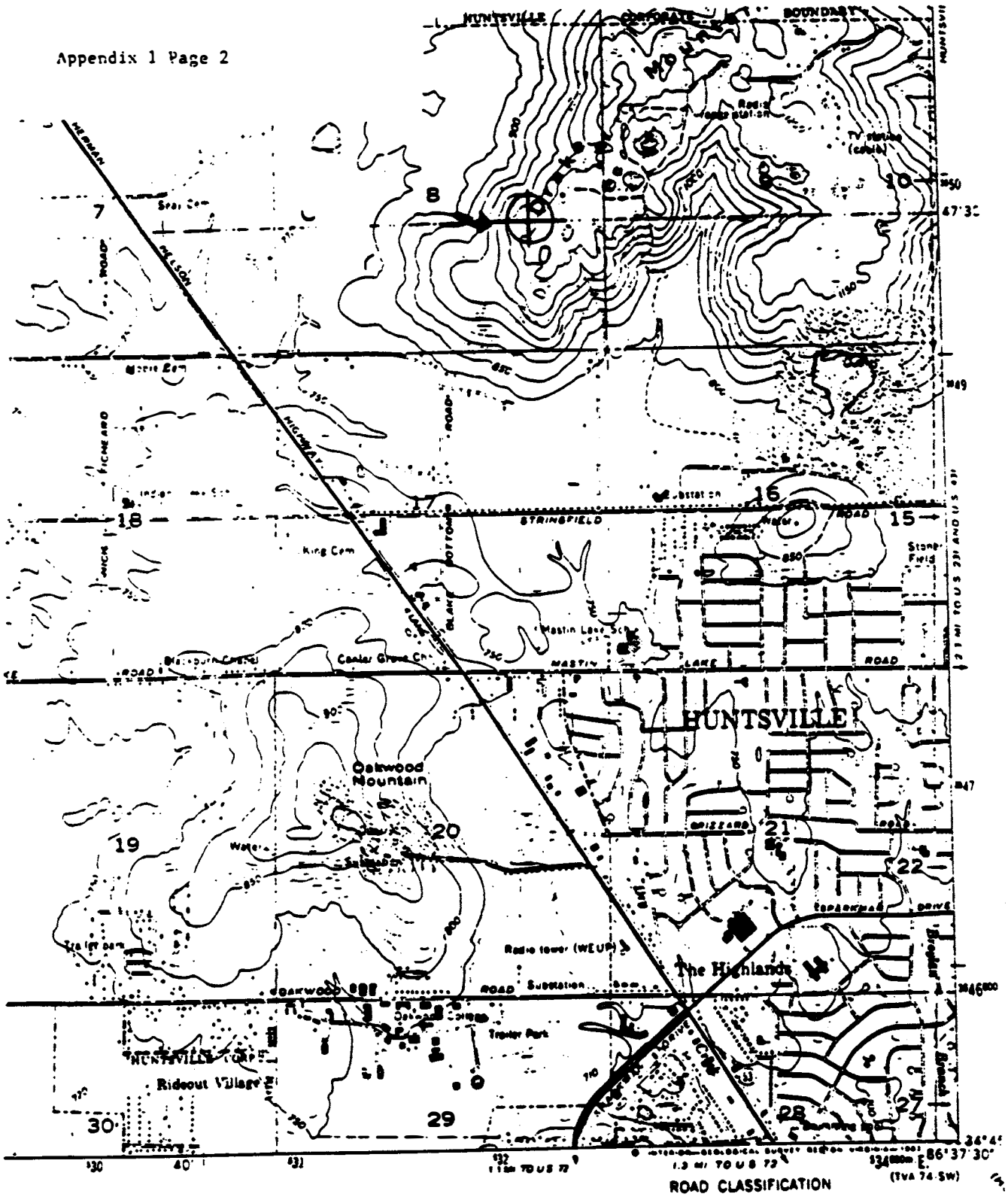
NOTE: Request for extension of the effective period of this determination must be postmarked or delivered to the issuing office at least 15 days prior to the expiration date.

If the structure is subject to the licensing authority of the FCC, a copy of this determination will be sent to that Agency.

Issued by	Signature	Date

FAA Form 7460-1 (6-80)

DO NOT REMOVE CARBONS



ROAD CLASSIFICATION

Primary highway, all weather, hard surface

Secondary highway, all weather, hard surface

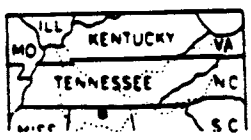
Light-duty road, all weather, improved surface

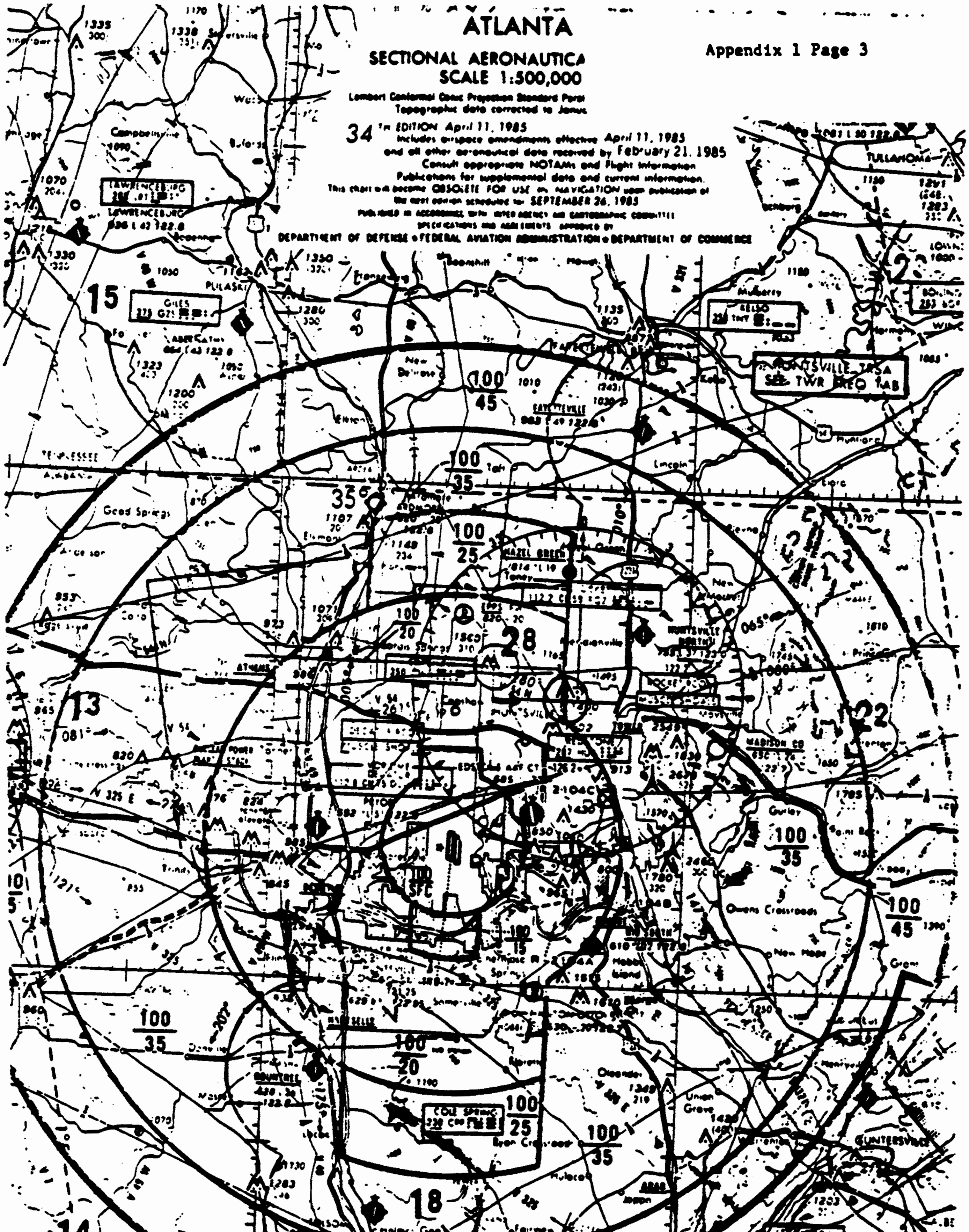
Unimproved road, fair or dry weather

Interstate Route U S Route State Route

JEFF, ALA.
N3445—W8637.5 7.5

1967
PHOTOREVISED 1982
DMA 3853 I SW-SERIES V844




ATLANTA
SECTIONAL AERONAUTICA
SCALE 1:500,000
34TH EDITION April 11, 1985
Includes airspace amendments effective April 11, 1985
and all other aeronautical data received by February 21, 1985
SEPTEMBER 26, 1985
DEPARTMENT OF DEFENSE • FEDERAL AVIATION ADMINISTRATION • DEPARTMENT OF COMMERCE
TULLAHOMA
PULASKI
GILES
HUNTSVILLE TRSA
SEE TWR FREQ TAB
FAYETTEVILLE
Lincoln
TENNESSEE
ALABAMA
Good Springs
HAZEL GREEN
ATHENS
Meridianville
Gurley
Owens Crossroads
New Hope
Oleander
Union Grove
GUNTERSVILLE
Falkville
Eva
COLE SPRING
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13
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18
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Letter #6: FEDERAL AVIATION ADMINISTRATION, ORLANDO AIRPORTS DISTRICT OFFICE, ORLANDO, FLORIDA; U.S. DEPARTMENT OF TRANSPORTATION; C. ED HOWARD, PLANS AND PROGRAMS MANAGER; APRIL 5, 1994

Thank you for your comments.

We note from your comment letter and associated FAA Advisory Circular that Tampa Electric Company is to give notice of proposed construction for proposed structures more than 200 ft above ground level (AGL) for an FAA airspace determination. As indicated in Table 2.3.2-2 in Section 2.3.2.2 of this FEIS, two project structures are proposed to be above 200 ft in height. These are the gasifier structure (300 ft AGL) and the Hot Gas Cleanup (HGCU) structure (279 ft AGL). None of the project exhaust stacks are currently proposed to be above 200 ft in height, although the H_2SO_4 plant thermal oxidizer is predicted to be 199 ft AGL.

By inclusion of your comment letter and associated Advisory Circular in this FEIS, EPA is informing Tampa Electric Company of their need for coordination with the Orlando Airports District Office consistent with FAR Part 77. However, FAA concerns may be resolved or at least partially resolved since Tampa Electric Company has initiated coordination on August 30, 1993, with the FAA Southern Region in Atlanta (College Park), Georgia. The Southern Region has subsequently issued an "Acknowledgement of Notice of Proposed Construction or Alteration" on November 11, 1993, for a structure 300 ft AGL / 140 ft msl / 440 ft AMSL (see attached copy). It should be noted that the 300 ft AGL gasifier structure is still expected to be 300 ft AGL and the highest to be constructed for the proposed Polk Power Station; however, due to Tampa Electric Company design modifications, the HGCU structure listed as 219 ft AGL in the DEIS is expected to be 279 ft AGL. Additional FAA coordination may or may not be needed.

This has been resolved and there is a permit issued from FAA.

RECEIVED

NOV 22 1993

ENVIRONMENTAL PLANNING

U.S. Department of Transportation
Federal Aviation Administration

Southern Region

P. O. Box 20636
Atlanta, Georgia 30320

ACKNOWLEDGEMENT OF NOTICE OF PROPOSED CONSTRUCTION OR ALTERATION

CITY	STATE	LATITUDE/LONGITUDE	MSL	AGL	AMSL
BRADLEY JUNCTIO	FL	27-43-39.00 081-59-27.00	140	300	440

TAMPA ELECTRIC COMPANY
ATTN: A. SPENCER AUTRY
P. O. BOX 111
TAMPA, FL 33601-0111

AERONAUTICAL STUDY
No: 93-ASO-1647-OE

Type Structure: GASIFIER

The Federal Aviation Administration hereby acknowledges receipt of notice dated 08/30/93 concerning the proposed construction or alteration contained herein.

A study has been conducted under the provisions of Part 77 of the Federal Aviation Regulations to determine whether the proposed construction would be an obstruction to air navigation, whether it should be marked and lighted to enhance safety in air navigation, and whether supplemental notice of start and completion of construction is required to permit timely charting and notification to airmen. The findings of that study are as follows:

The proposed construction would not exceed FAA obstruction standards and would not be a hazard to air navigation. However, the following applies to the construction proposed:

The structure should be obstruction marked and lighted per FAA Advisory Circular AC 70/7460-1H, 'Obstruction Marking and Lighting'. CHAPTERS: [X]-3 [X]-4 [X]-5 []-6 []-7 []-8 []-9 []-10 []-11 []-12 [X]-13. Painted/Red Lights

Supplemental notice is required at least 10 days before the start of construction and within five days after construction reaches its greatest height (use the enclosed FAA form).

This determination expires on 05/14/95 unless application is made, (if subject to the licensing authority of the Federal Communications Commission), to the FCC before that date, or it is otherwise extended, revised or terminated.

If the structure is subject to the licensing authority of the FCC, a copy of this acknowledgement will be sent to that Agency.

NOTICE IS REQUIRED ANYTIME THE PROJECT IS ABANDONED OR THE PROPOSAL IS MODIFIED

SIGNED Armando Castro Specialist, Systems Management Branch
(404) 305-5585.
ISSUED IN: College Park, Georgia ON 11/17/93

(b) Each sponsor who proposes construction or alteration that is the subject of a notice under paragraph (a) of this section and is advised by an FAA regional office that a supplemental notice is required shall submit that notice on a prescribed form to be received by the FAA regional office at least 48 hours before the start of the construction or alteration.

(c) Each sponsor who undertakes construction or alteration that is the subject of a notice under paragraph (a) of this section shall, within 5 days after that construction or alteration reaches its greatest height, submit a supplemental notice on a prescribed form to the FAA regional office having jurisdiction over the area involved, if —

(1) The construction or alteration is more than 200 feet above the surface level of its site; or

(2) An FAA regional office advises him that submission of the form is required.

(e) Each person who is required to notify the Administrator by paragraph (b) or (c) of §77.13, or both, shall send an executed copy of FAA Form 7460-2, Notice of Actual Construction or Alteration, to the Manager, Air Traffic Division, FAA Regional Office having jurisdiction over the area involved.

SUPPLEMENTAL NOTICE — General Instructions

For your convenience in meeting Supplemental Notice Requirements of FAR Part 77, this form is set up in two parts. Please ensure all entries are legible throughout the form set.

Submission instructions are contained at the top of each part. Information in Section 2 (Construction Location — Height) is vital for accurate charting and to adjust, if necessary, operational procedures and minimum flight altitudes.

PART 1 - To Report **Actual Start of Construction or Alteration**
PART 2 - To Report **A Structure Reaching Its Greatest Height**
OR
To Report **A Construction/Project Abandoned or Dismantled**

Agency Display Of Estimated Burden For Notice of Actual Construction or Alteration

The public report burden for this collection of information is estimated to average 13 minutes per response.

If you wish to comment on the accuracy of the estimate or make suggestions for reducing this burden, please direct your comments to OMB and the FAA at the following addresses.

Office of Management and Budget
Paperwork Reduction Project 2120-0001
Washington, D.C. 20503

— and —

U.S. Department of Transportation
Federal Aviation Administration
Airspace and Obstruction Evaluation Branch, ATP-240
800 Independence Avenue, S.W.
Washington, D.C. 20591

Please DO NOT RETURN your form to either of these addresses.

FAA Form 7460-2 (1-93)

Form Approved OMB No. 2120-0001

SUPPLEMENTAL NOTICE

Submission Instructions: For Advance Notice of Actual Construction or Alteration. Complete items 1, 2, 3A(1), 3A(2), and 6. If applicable, also complete items 4 and 5. Detach Part 1. Fold and tape at bottom. Mail to the FAA Regional Office for your area. Part 1A is provided for your file.

Aeronautical Study No.
~~XXXXXX-XX-XXXX~~
93-ASO-1647-OE

US Department of Transportation
Federal Aviation Administration

Notice of Actual Construction or Alteration

(Please Type or Print on this Form)

1. Construction

A. Type and Description of Construction
☐ New
☐ Alteration

B. Owner of Structure

2. Construction Location — Height

A. Coordinates *(To hundredths of seconds, if known)*
Latitude 0 ' " N
Longitude 0 ' " W

B. Location *(City, State, include street address if any)*
BRADLEY JUNCTION, FL

C. Construction Heights
Site Elevation _____ Ft. AMSL
Structure Height _____ Ft. AGL
Total Height *(Structure & Site)* Above Mean Sea Level _____ Ft. AMSL

D. Site Elevation Determined By
☐ Actual Survey
☐ USGS 7.5' Quad Chart
☐ Other *(Specify)* _____

E. Reference datum of coordinates
☐ NAD 27
☐ NAD 83
☐ Other *(Specify)* _____

F. Name of Nearest Public-Use or Military Airport *(Include Distance and Direction from the Airport)*

3. Construction Notifications

A. Notification (Notice is Critical to Flight Safety — FAR Part 77 Required)	Date	B. Construction/Project	Date
★ 10 DAYS (1) Construction will start *(Submit at least ~~48 hrs~~ in advance)*		(1) Project Abandoned	
(2) Estimated Completion		(2) Construction Dismantled	
★ (3) Structure Reached Greatest Height *(Submit within 5 days)*			

4. Marking and Lighting

A. Marked
☐ Yes ☐ No ☐ Temporary

B. Lighted
☐ Medium Intensity White ☐ High Intensity White ☐ Red
☐ Dual (Medium Intensity White & Red) ☐ Dual (High Intensity White & Red) ☐ None

5. Antenna Requiring FCC License

A. Call Sign	B. Frequency	C. Date Applied for FCC Construction Permit	D. Date Construction Permit Issued

6. Preparer's Certification

SUBMITTED BY: (If submitted by a proponent's representative, please also complete item B.)

A. Proponent's Representative
Name:
Address:
Tel. No.: *(Include Area Code)*

B. Construction Proponent
Name:
Address:
Tel. No.: *(Include Area Code)*

I hereby certify that the information provided is true, complete, and correct to the best of my knowledge.

Signature	Title	Date

NOTICE is required by Part 77 of the Federal Aviation Regulations (14 C.F.R. Part 77) pursuant to Section 1101 of the Federal Aviation Act of 1958, as amended (49 U.S.C. app § 1501). Persons who knowingly and willfully violate the Notice requirements of Part 77 are subject to a civil penalty of $1,000 per day until notice is received, pursuant to Section 901(a) of the Federal Aviation Act of 1958, as amended (49 U.S.C. app § 1471(a)) as well as a fine (criminal penalty) of not more than $500 for the first offense and not more than $2,000 for subsequent offenses, pursuant to Section 902(a) of the Federal Aviation Act of 1958, as amended (49 U.S.C. app § 1472(a)).

7

Florida Department of Environmental Protection

rec'd
APR 12 1994
cc: Chris Hebert

Lawton Chiles
Governor

Southwest District
3804 Coconut Palm Drive
Tampa, Florida 33619
813-744-6100

Virginia B. Wetherell
Secretary

April 7, 1994

Ms. Lena Scott
Public Notice Coordinator
U.S.E.P.A., Region IV
345 Courtland Street, NE
Atlanta, GA 30345

Re: Tampa Electric Company EIS

Dear Ms. Scott:

Following are comments from the Hazardous Waste Department of the Southwest District of the Florida Department of Environmental Protection on the Draft EIS and Draft NPDES Permit for TECO's proposed Polk County Project. A major concern of this department is the ability to verify environmental compliance once the project is built and operational. We recommend that you include penalties for violations of permit conditions equivalent to or greater than those in Part II of the Standard Conditions for NPDES Permits as is currently used by USEPA. Future enforcement will fall to the State of Florida upon delegation of this program later in 1994 and such permit conditions will further assure our right of inspection for compliance on this site.

In August of 1993 TECO denied the department access to an NPDES discharge point to obtain a water sample at their Gannon Plant during a RCRA inspection. The reason given at the time was that they did not consider sampling at an NPDES discharge point to be a hazardous waste issue. While we did not believe that the levels of hazardous substances would have been at RCRA levels at this point, it was possible there could have been exceedances of the NPDES allowable standards caused by upstream RCRA violations. It is our policy and USEPA policy to conduct multimedia inspections and this denial of sampling access is being addressed in a pending enforcement action as it was a violation of state laws and permit conditions.

TECO typically sends an environmental representative from their main corporate office in Tampa and prohibits inspections from beginning until that person arrives to participate in the inspection. This proposed plant is much further away from their offices than their existing plants, and there are sometimes delays in beginning the inspection even at these closer plants. Unannounced inspections are the policy of FDEP and the element of

surprise is important to assure that the facility is complying with regulations and permit conditions. A time limit for any delay (with penalties) caused by TECO will be necessary so that FDEP can assure compliance with some certainty that violations are not being corrected prior to the inspection or sampling event.

Additional penalties and conditions beyond what currently exist in Florida law are essential in the enforcement sections of the NPDES permit to help assure compliance. We would be sending the wrong message to the vast majority of corporations who go to great lengths to accommodate our inspections and comply with laws and permit conditions if we do not provide additional inspection and compliance safeguards in this publicly subsidized project. If possible, TECO's compliance with all permit conditions and environmental regulations should be linked to their continued funding via the USDOE grant.

In an unrelated item, the catalyst referred to in the reactor beds on page 2-36 and the spent catalyst on page 2-83 of the EIS is not identified. We would like to know what this catalyst is as it could have hazardous waste implications.

Thank you for the opportunity to provide our comments and input.

Very truly yours,

Gary A. Santti

Gary A. Santti, P.E., P.G.
Hazardous Waste Manager
Southwest District

cc: Mike Hickey, SW District Water Program
Hamilton "Buck" Oven, Power Plant Siting, TL

Letter #7: FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION, SOUTHWEST DISTRICT, TAMPA, FLORIDA; GARY SANTTI, HAZARDOUS WASTE MANAGER, SOUTHWEST DISTRICT; APRIL 7, 1994

Thank you for your comments.

EPA supports the need for authorized NPDES, hazardous waste, and other inspections and expects full compliance from Tampa Electric Company for the proposed Polk Power Station and other relevant facilities concerning scheduled or unannounced State of Florida and/or federal inspections. It would seem that provisions and conditions for such inspections would primarily be part of the State of Florida site certification process under the Power Plant Siting Act and state and federal permit compliance authorities. In addition, NPDES permits typically include standard Part II language regarding right of entry and site inspections. The draft NPDES permit for the proposed Polk Power Station presented in Appendix A includes the standard Part II provision.

Regarding the potential EPA inclusion of more stringent conditions regarding penalties than those contained in the standard Part II NPDES permit language and Florida law, we offer the following comments:

First, the standard language on penalties is derived directly from the Clean Water Act and from 40 CFR Part 122, where it is restated for the purpose of including it in permits. EPA will be providing adequate notice to Tampa Electric Company that it will be subject to penalties of up to $10,000 per day administratively and $25,000 per day judicially in the event of a permit violation. These are the maximum penalties allowed under the Clean Water Act.

Next, the standard language on inspections and entry is derived straight from Section 308 of the Clean Water Act. We have been advised by FDEP's Office of General Counsel that Florida Statutes Annotated (F.S.A.) 403.091 provides no less stringent authority in inspections and facility entry than does Section 308. The only difference is that F.S.A. 430.091 codifies rules on consent to inspection and obtaining warrants for inspection, and EPA follows procedures developed in accordance with 1978 Supreme Court decision in *Marshal v. Barlow's, Inc.* The procedures are nearly identical, in that EPA inspectors must obtain consent before entry or have proper warrant to enter.

Your general concerns were contemplated when the Standard Conditions for NPDES Permits were drafted. The NPDES permit process has already addressed the question of notifying a permittee of the maximum consequences should it violate any of the provisions of the issued NPDES permit.

At this time, EPA does not plan to add any additional permit conditions regarding NPDES site inspections beyond the Part II language provided in the draft NPDES permit. The standard Part II provision should be adequate.

As you are aware, EPA has primacy for the NPDES Permit Program for Florida at this time. However, should FDEP wish to request that EPA make a federal NPDES site inspection at the proposed Polk Power Station (or at other facilities in Florida with issued NPDES permits), EPA would consider such requests for good cause. Should such a coordinated inspection eventuate, FDEP representatives would be welcome to accompany EPA during the inspection.

In regard to potentially linking NPDES permit conditions with final approval and continuance of the proposed DOE cost-shared financial assistance under the DOE Clean Coal Technology (CCT) Demonstration Program, the DOE Cooperative Agreement with Tampa Electric Company requires that Tampa Electric Company be in compliance with all applicable federal and state laws with regard to performance under the agreement. This would include state law pertaining to the environment. Failure to comply as required could subject Tampa Electric Company to sanctions by DOE under that agreement. Such sanctions could include termination of the agreement for breach of the agreement's conditions. However, DOE, under this agreement, cannot undertake to be the enforcing agency for the purpose of administering Florida environmental law. Florida law must be enforced, as applicable, by the appropriate Florida agencies and officials. Where a violation of Florida environmental laws is established, DOE will then investigate whether, and to what degree, contract sanctions are appropriate.

Relative to your requested identification of and the possible hazardous waste implications of two references to catalysts in the DEIS, the catalyst referenced on page 2-36 of the DEIS and the spent catalyst referenced on page 2-83 of the DEIS are both vanadium pentoxide (V_2O_5). Vanadium pentoxide is not generally considered toxic. It is recognized as a respiratory and eye irritant as a dust or a fume (OSHA, 1978). It is regulated as a hazardous waste when it is a discarded commercial product, off-specification material, container residue or spill residue (40 CFR 261.33). The spent catalyst removed from the sulfuric acid unit at the proposed Polk Power Station is planned to be returned to the catalyst manufacturer for regeneration. If this is not possible for some reason, the catalyst would be disposed of in a properly permitted landfill.

Occupational Safety and Health Administration (OSHA), 1978. "Occupational Health Guidelines for Vanadium Pentoxide Dust." U.S. Department of Labor, Occupational Safety and Health Administration, September 1978.

6

STATE OF FLORIDA
DEPARTMENT OF COMMUNITY AFFAIRS

2740 CENTERVIEW DRIVE • TALLAHASSEE, FLORIDA 32399-2100

LAWTON CHILES
Governor

LINDA LOOMIS SHELLEY
Secretary

April 13, 1994

Mr. Heinz Mueller
Chief, Environmental Policy Section
U.S. Environmental Protection Agency
Region IV
345 Courtland Street, Northeast
Atlanta, Georgia 30365

RE: Clean Coal Technology Program - Draft Environmental Impact Statement - Tampa Electric Company - Polk Power Station - Polk County, Florida
SAI: FL9402240121C

Dear Mr. Mueller:

The Florida State Clearinghouse, pursuant to Presidential Executive Order 12372, Gubernatorial Executive Order 93-194, the Coastal Zone Management Act, 16 U.S.C. §§ 1451-1464, as amended, and the National Environmental Policy Act, 42 U.S.C. §§ 4321, 4331-4335, 4341-4347, as amended, has coordinated a review of the above-referenced project.

The Department of State (DOS) notes that the site submitted for the Site Certification Application has been surveyed and no cultural resources were identified by the survey. The applicant is required to provide DOS with project location maps once the alignment for the transmission line is selected. Please refer to the enclosed DOS comments regarding the above-referenced project.

Based on the enclosed comments provided by our reviewing agencies, the state has determined that, at this stage, the proposed project is consistent with the Florida Coastal Management Program (FCMP). All subsequent environmental

documents prepared for this project must be submitted to the State Clearinghouse and will be reviewed to determine the project's continued consistency with the FCMP.

Very truly yours,

Linda Loomis Shelley
Secretary

LLS/rk

Enclosures

cc: George Percy, Department of State
Norman Feder, Department of Transportation
Wynnelle Wilson, Department of Commerce

FLORIDA DEPARTMENT OF STATE
Jim Smith
Secretary of State
DIVISION OF HISTORICAL RESOURCES
R.A. Gray Building
500 South Bronough
Tallahassee, Florida 32399-0250
Director's Office (904) 488-1480
Telecopier Number (FAX) (904) 488-3353

March 14, 1994

Ms. Janice L. Hatter, Director
State Clearinghouse
Executive Office of the Governor
Room 1603, The Capitol
Tallahassee, Florida 32399-0001

In Reply Refer To:
Denise M. Breit
Historic Sites Specialist
(904) 487-2333
Project File No. 940715

RE: Cultural Resource Assessment Request
SAI# FL9402240121C
Draft Environmental Impact Statement for the Tampa Electric Company - Polk Power Station
Polk County, Florida

Dear Ms. Hatter:

In accordance with the provisions of Florida's Coastal Zone Management Act and Chapter 267, Florida Statutes, as well as the procedures contained in 36 C.F.R., Part 800 ("Protection of Historic Properties"), we have reviewed the referenced project(s) for possible impact to historic properties listed, or eligible for listing, in the National Register of Historic Places, or otherwise of historical or architectural value.

A review of our files indicates that the site submitted for the Site Certification Application has been previously surveyed and that no cultural resources were located as a result of that survey. Therefore, it is the opinion of this office that this portion of the project will have no effect on historic properties listed, or eligible for listing, in the National Register of Historic Places, or otherwise of historical or architectural value. This portion of the project is also consistent with the historic preservation laws of Florida's Coastal Management Program.

Once the alignment within the transmission line corridor is selected, location maps should be submitted for our review. This will enable us to determine whether the potential exists for unrecorded historic properties to be impacted by the proposed activities.

If you have any questions concerning our comments, please do not hesitate to contact us. Your interest in protecting Florida's historic properties is appreciated.

Sincerely,

for Laura A. Kammerer

George W. Percy, Director
Division of Historical Resources
and
State Historic Preservation Officer

GWP/Bdb
xc: Jasmine Raffington, FCMP-DCA

FLORIDA DEPARTMENT OF TRANSPORTATION

LAWTON CHILES
GOVERNOR

BEN G. WATTS
SECRETARY

NEF-L78-94
March 21, 1994

Ms. Janice L. Alcott, Director
State Clearinghouse
Office of Planning and Budgeting
Budget Management and Planning Policy Unit
Executive Office of the Governor-OPB
Room 411, Carlton Building
Tallahassee, FL 32399-0001

RE: ICAR REVIEW
SAI # 9402240121C
TAMPA ELECTRIC CO/POLK POWER STATION

Dear Ms. Alcott:

District One, Florida Department of Transportation, has reviewed the above-referenced ICAR application, and offers no comments.

The Department reviewed this material earlier during the State-required Site Certification process. As a result of that review, the Department executed a Stipulated Agreement with Tampa Electric Company. The Stipulated Agreement provides for all the conditions necessary for Departmental approval.

Thank you for allowing us the opportunity to review this document. Should you have any questions, please feel free to contact Larry Slayback, Policy Administrator, at Suncom 748-2341.

Sincerely,

Norman E. Feder
District Director

NEF/LGS/km

cc: David A. May, P.E.
Ronnice Vaughn, MS - 28
Ralph Cantral, FCMP Director, FDCA
Tom Deardorff
Frank Meares
Dawn Wolfe

District One Southwest Area Office

P.O. Box 1030
Fort Myers, FL 33902-1030

Regional Service Center
2295 Victoria Avenue - Suite 292
Fax: (813) 338-2353

Phone: (813) 338-2341
SunCom: 748-2341
Fax SunCom: 748-2353

APPENDIX 3

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

FORM 525-010 .
STATE TRANSPORTATION PLANNING

RECEIVED
DISTRICT PLANNING & PROGRAMS
DISTRICT SEVEN

94 MAR -2 AM 10:56

INTERGOVERNMENTAL COORDINATION AND REVIEW
ROUTING SHEET

3/10 ~~second~~ due back to Cair-

DATE: 3/1/94

TO: Norm Feder, D1; Aage Schroder, D2; Marvin Stukey, D3; Joe Yesbeck, D4; Jim Kimbler, D5; Servando Parapar, D6; David Twiddy, D7; B. Ashbaker, Leroy Irwin

SAI#: FL9402240121C

Application Transmitted: Tampa Electric Co./Polk Power Station

Date Response Due to the Clearinghouse: ~~3/14/94~~ EXTENSION to 3/21/94

Please review and comment regarding the attached application in accordance with Department Procedure 525-010-205-b. A letter of response to the Director of the Clearinghouse and this routing sheet should be completed and returned as directed in the procedure.

The following criteria, as appropriate to the project, should be used to evaluate the application and develop your comments:

- Florida Transportation Plan
- Adopted Work Program
- Transportation Improvement Plan (TIP)
- Right of Way Preservation and Advanced Acquisition
- Transit Development Program
- MPO Comprehensive Transportation Plan and 20 year Transportation Plan
- Florida Rail System Plan
- Florida Aviation System Plan
- Local Airport Master Plan
- Florida Seaport Mission Plan
- Environment Commitments
- Unified Planning Work Program
- Level of Service
- Access Management

If comments are warranted based on other criteria, they should be included.

Work Program Item Number: ________________ (if applicable).

RONNICE S. VAUGHN
Central Office ICAR Coordinator - MS #28

TYPE: General Aviation Rail Seaports Environment Transit

RECYCLED PAPER

Sandra Whitmire

Date: 02/28/94
Comment Due Date: 03/14/94
SAI# FL9402240121C

STATE AGENCIES	LOCAL/OTHER	OPB POLICY UNITS
___ Agriculture	___ RPC #1	___ Criminal Justice
___ Board of Regents	___ RPC #2	___ Education
_X_ Commerce	___ RPC #3	___ Environment/C & ED
_X_ Community Affairs	___ RPC #4	___ General Government
___ Education	___ RPC #5	___ Health & Human Srv
_X_ Environmental Reg	___ RPC #6	___ Revenue & Eco. Ana
_X_ Game & Fish Comm	___ RPC #7	___ SCH
___ Health & Rehab Srv	___ RPC #8	_X_ SCH/CON
___ Highway Safety	___ RPC #9	
___ Labor & Employmnt	___ RPC #10	
___ Law Enforcement	___ RPC #11	
___ Marine Fish Comm	___ NWFWMD	
___ Natural Resources	___ SFWMD	
_X_ State	_X_ SWFWMD	
_X_ Transportation	___ SJRWMD	
___ Trans Disad. Comm	___ SRWMD	
___ DER District		
___		
___		

RECEIVED
FEB 28 1994
CENTRAL OFFICE FDOT
ICAR COORDINATOR

The attached document requires a Coastal Zone Management Act/Florida Coastal Management Program consistency evaluation and is categorized as one of the following:

___ Federal Assistance to State or Local Government(15 CFR 930, Subpart F). Agencies are required to evaluate the consistency of the activity.

_X_ Direct Federal Activity (15 CFR 930, Subpart C). Federal agencies are required to furnish a consistency determination for the State's concurrence or objection.

___ Outer Continental Shelf Exploration, Development or Production Activities (15 CFR 930, Subpart E). Operators are required to provide a consistency certification for state concurrence/objection.

___ Federal Licensing or Permitting Activity (15 CFR 930, Subpart D). Such projects will only be evaluated for consistency when there is not an analogous state license or permit.

SEE REVERSE SIDE FOR INSTRUCTIONS AND ADDRESSES FOR RETURN MAILING.

To: State Clearinghouse
Executive Office of the Governor-OPB

Florida Coastal Management Director
Department of Community Affairs

From: FL DEPT. OF TRANSPORTATION
DISTRICT ONE/SWAD
Division/Bureau: FT. MYERS, FL

Reviewer: DAWN WOLFE/LLGS
Date: 3-21-94

EO. 12372	Federal Consistency
☑ No Comment	☑ No Comment/Consistent
☐ Comments Attached	☐ Consistent/Comments Attached
☐ Not Applicable	☐ Inconsistent/Comments Attached
	☐ Not Applicable

STATE OF FLORIDA DEPARTMENT OF COMMERCE
Division of Economic Development

March 3, 1994

Ms. Janice L. Hatter, Director
State Clearinghouse
Office of Planning and Budgeting
Executive Office of the Governor
The Capitol
Tallahassee, Florida 32399-0001

RE: SAI# FL 94 02 24 0121C (E.I.S./Tampa Electric/Polk Power Station)

Dear Ms. Hatter:

We appreciate being asked to review this Draft Environmental Impact Statement (E.I.S.) from the U.S. Environmetal Protection Agency (EPA). Being considered is the construction by Tampa Electric Company of an 1,150-megawatt power electric generating station on a 4,348-acre site in southwestern Polk County, Florida. Construction will have positive economic impacts on employment, earnings, and the tax base.

Based on those portions of the Coastal Zone Management Act of 1972 (16 U.S.C. 1451 et seq.) and the Florida Coastal Management Program (Sec. 380.19-33, F.S.) for which the Department of Commerce has responsibility, we believe the proposed plans and actions are consistent with criteria in Chapter 288, Florida Statutes: positive net impacts on employment and income; social benefits outweigh identifiable social costs; effects on any key Florida industry are not adverse; and official local agency support exists for the project.

Very respectfully,

Wynnelle Wilson

Wynnelle Wilson
Economic Development Policy Coordinator
Bureau of Economic Analysis

WW/rdp

Director's Office 904/488-6300 | Business Assistance 904/488-9357 | Economic Analysis 904/487-2568 | Industry Development 904/488-9360 | Motion Picture and Television 940/487-1100 | International Trade and Development 904/488-6124

COLLINS BUILDING TALLAHASSEE, FLORIDA 32399-2000 FAX 904/487-1407

Wynelle Wilson

Date: 02/28/94
Comment Due Date: 03/14/94
SAI# FL9402240121C

STATE AGENCIES	LOCAL/OTHER	OPB POLICY UNITS
___Agriculture	___ RPC #1	___Criminal Justice
___Board of Regents	___ RPC #2	___Education
_X_Commerce	___ RPC #3	___Environment/C & ED
_X_Community Affairs	___ RPC #4	___General Government
___Education	___ RPC #5	___Health & Human Srv
_X_Environmental Reg	___ RPC #6	___Revenue & Eco. Ana
_X_Game & Fish Comm	___ RPC #7	___SCH
___Health & Rehab Srv	___ RPC #8	_X_SCH/CON
___Highway Safety	___ RPC #9	
___Labor & Employmnt	___ RPC #10	
___Law Enforcement	___ RPC #11	
___Marine Fish Comm	___ NWFWMD	
___Natural Resources	___ SFWMD	
_X_State	_X_ SWFWMD	
_X_Transportation	___ SJRWMD	
___Trans Disad. Comm	___ SRWMD	
___ DER District	___	
___	___	
___		

The attached document requires a Coastal Zone Management Act/Florida Coastal Management Program consistency evaluation and is categorized as one of the following:

___ Federal Assistance to State or Local Government(15 CFR 930, Subpart F). Agencies are required to evaluate the consistency of the activity.

_X_ Direct Federal Activity (15 CFR 930, Subpart C). Federal agencies are required to furnish a consistency determination for the State's concurrence or objection.

___ Outer Continental Shelf Exploration, Development or Production Activities (15 CFR 930, Subpart E). Operators are required to provide a consistency certification for state concurrence/objection.

___ Federal Licensing or Permitting Activity (15 CFR 930, Subpart D). Such projects will only be evaluated for consistency when there is not an analogous state license or permit.

SEE REVERSE SIDE FOR INSTRUCTIONS AND ADDRESSES FOR RETURN MAILING.

To: State Clearinghouse
Executive Office of the Governor-OPB

Florida Coastal Management Director
Department of Community Affairs

From: FLA Dept of Comm
Division/Bureau: EC DEV / BEA

Reviewer: R Peterson
Date: MAR 1, 1994

EO. 12372

☐ No Comment
☐ Comments Attached
☐ Not Applicable

Federal Consistency

☐ No Comment/Consistent
☑ Consistent/Comments Attached
☐ Inconsistent/Comments Attached
☐ Not Applicable

Letter #8: STATE OF FLORIDA, DEPARTMENT OF COMMUNITY AFFAIRS; TALLAHASSEE, FLORIDA; APRIL 13, 1994; LINDA LOOMIS SHELLEY; SECRETARY

Thank you for your comments.

EPA appreciates the Department of Community Affairs' coordination of the state review of the DEIS for the proposed Polk Power Station. We note your conclusion that "based on the enclosed comments provided by our reviewing agencies, the state has determined that, at this stage, the proposed project is consistent with the Florida Coastal Management Program (FCMP)."

We also note the state reviewing agency letters enclosed in your comment letter. These review letters were from the Florida Department of State (Division of Historical Resources; Laura A. Kammerer for George W. Percy, Division of Historical Resources and State Historic Preservation Officer; March 14, 1994) and State of Florida Department of Commerce (Division of Economic Development; Wynnelle Wilson, Economic Development Policy Coordinator, Bureau of Economic Analysis; March 3, 1994), we also note your associated review coordination paperwork.

Based on the review letter from the Division of Historic Resources, we understand from the state SHPO that for the proposed site "it is the opinion of this office that this portion of the project will have no effect on the historic properties listed, or eligible for listing, in the *National Register of Historic Places*, or otherwise of historical or architectural value" and that "this portion of the project is also consistent with the historic preservation laws of Florida's Coastal Management Program." We also note that "once the alignment within the transmission line corridor is selected, location maps should be submitted for our review." EPA has also received this letter (addressed to EPA) directly from the SHPO. This letter and the EPA response is presented in this appendix as Letter #4.

Your review letter from the Florida Department of Transportation indicates a previous departmental review during the state's required site certification process. Specifically, it was stated that "as a result of that review, the Department executed a Stipulated Agreement with Tampa Electric Company" and that "the Stipulated Agreement provides for all the conditions necessary for Departmental approval."

In regard to your agency review letter from the State of Florida Department of Commerce, we note that the department states that "construction will have positive economic impacts on employment, earnings, and the tax base" and that "based on those portions of the Coastal Zone Management Act of 1972 (16 U.S.C. 1451 *et seq.*) and the Florida Coastal Management Program (Sec. 380.19–33, F.S.), for which the Department of Commerce has responsibility, we believe the proposed plans and actions are consistent with criteria in Chapter 288, Florida Statutes: positive net impacts on employment and income; social benefits outweigh identifiable social costs; effects on any key Florida industry are not adverse; and official local agency support exists for the project."

9

FACSIMILE TRANSMITTAL

CDC
Nation l Center for Environmental Health
Special Programs Group (F29)
4770 Buford Highway, NE
Atlanta, GA 30341-3724
(404) 488-7070

ADDRESSEE: Chris Hoberg
EPA (FAB-4)

FACSIMILE NO: (404) 347-5206
TELEPHONE NO: (404) 347-3776

SENDER: Ken Holt

FACSIMILE NO: (404) 488-7075
TELEPHONE NO: (404) 488-7070

DATE: 4/15/94

TRANSMITTAL CONSIST OF { 3 } PAGE(S) EXCLUDING COVER PAGE

COMMENTS: Original mailed this date to Ms. Lena Scott

DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

Centers for Disease Control
Atlanta GA 30341-3724

April 15, 1994

Ms. Lena Scott
Public Notice Coordinator
U.S. Environmental Protection Agency
Region IV
345 Courtland Street, NE
Atlanta, Georgia 30345

Dear Ms. Scott:

We have completed our review of the Draft Environmental Impact Statement (DEIS) entitled "Tampa Electric Company - Polk Power Station." We are responding on behalf of the U.S. Public Health Service. Consistent with our mission, we have focused our review on aspects of the proposed project that have the potential to impact human health.

In general, we find that the DEIS is well written and provides a good discussion of the environmental and related public health aspects of this project. The document allows for a ready understanding of the various potential human exposure pathways associated with both the construction and operation of the proposed facility. In our examination of these potential exposure pathways, we did identify a limited number of concerns that we believe need additional clarification.

For example, the DEIS appropriately examines air emissions using models for both maximum ground level pollutant air concentrations and surface deposition. However, for human exposure consideration, the evaluation appears to be limited to direct inhalation impacts (carcinogenic and non-carcinogenic). It has been suggested that indirect exposure to combustion effluents (e.g. through deposition into or onto the human food chain) may be more significant than direct inhalation exposure. We note that the map on page 3-147 shows crops, pastures, and citrus groves downwind (based upon prevailing easterly wind direction) from the proposed facility. Has consideration been given to possible introduction of site air contaminants into the human food chain by deposition to these areas? We note that such an evaluation was undertaken for impacts to area wildlife.

In a related manner, we are interested in the long-term impacts of the pollutants released from the plant, particularly air-deposited pollutants that may not readily degrade or otherwise be transformed into an innocuous or non-available forms. The heavy metals serve as a good illustration. The DEIS examines such metals based upon an annual deposition to surface vegetation and

then evaluates potential effects on wildlife that feeds upon that vegetation. We wonder if there is any possible significant soil buildup of metals over the anticipated life of the proposed facility or if deposition of plant air emissions (directly and through surface runoff) to local surface waters might slowly elevate sediment mercury, and ultimately fish mercury, levels significantly. It is difficult for us to tell if the PSD permit review process adequately accounts for long-term buildup of such contaminants.

We generally agree with the identification of air pollutants reviewed in this DEIS and believe that the selection of metals and organic "air toxics" is reasonable. We do note, however, that chlorinated dioxins and furans are not addressed. Is it clearly established that the clean coal technology and the other fuels to be used at this facility contain absolutely no chlorine? In the general literature there is some mention of the production of chlorinated dioxins and furans resulting from coal combustion, albeit at low levels. It would be helpful to see the rationale for not including these noted products of incomplete combustion or other information demonstrating that they will be under levels of health concern.

The results of the air modeling are heavily dependent upon the model input assumptions. Emission factors were used to estimate air release rates for the various metals, inorganics, and or anics being evaluated. Some of the assumptions used could be somewhat critical to the final outcome of the evaluation. For example, the hexavalent chromium release seems to be predicated upon the fuel makeup of "2 percent of total chromium for distillate oil and 0.5 percent of total for syngas" (page 4-176). These ratios may not remain constant once the fuel enters the combustion environment. The hexavalent chromium was close enough to the Florida no-threat level that this level could be exceeded if the exhaust hexavalent chromium exceeds 12 percent of total chromium. Is there a data base to support that this level would not be exceeded? Or, is there any plan to sample plant emissions to confirm that the hexavalent chromium, and other emission assumptions (e.g., BaP), are reasonably accurate? (Note: Compliance testing is mentioned, but not detailed.)

We were pleased to see that there will be periodic monitoring of the groundwater since it is clear that the surficial aquifer will be impacted as a result of this facility. However, it is difficult for us to evaluate the adequacy of the proposed monitoring for actual public health protection. It is stated that "primary drinking water parameters would be monitored in on-site wells initially and every 5 years..." (page 4-197). Are the on-site wells to be located in a manner to detect rate and direction of possible contaminant migration off-site? Is there a

local water well user inventory available? Are groundwater migration rates always slow enough that 5 years between monitoring episodes allow an adequate safety margin for protection of off-site water supplies?

We note that the coal gasification process produces a slag by-product that will be marketed for various uses in the general environment. The DEIS characterizes this slag as vitrified and non-leachable. Will there be any quality control verification of non-leachability through the use of TCLP testing? Depending upon the temperatures experienced during the slag vitrification process (which is not described in the DEIS), it is possible that TCLP criteria might be exceeded under some conditions. Also, has radionuclide contamination of the slag been considered or will it be examined at some point?

We appreciate the opportunity to review and comment upon this draft document. Please ensure that we are included on your mailing list to receive a copy of the final EIS and any future draft EAs and Environmental Impact Statements which may indicate potential public health impacts and are developed under the National Environmental Policy Act (NEPA). If you have any questions regarding these comments, you may contact Mr. Harvey Rogers at (404) 488-7070.

Sincerely yours,

Kenneth W. Holt

Kenneth W. Holt, M.S.E.H.
Special Programs Group (F29)
National Center for Environmental Health

cc:
Mr. Harvey Rogers

Rec'd
APR 20 1994

DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

cc: Chris Halsey

Centers for Disease Control
Atlanta GA 30341-3724

April 15, 1994

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Public Notice Coordinator
U.S. Environmental Protection Agency
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We appreciate the opportunity to review and comment upon this draft document. Please ensure that we are included on your mailing list to receive a copy of the final EIS and any future draft EAs and Environmental Impact Statements which may indicate potential public health impacts and are developed under the National Environmental Policy Act (NEPA). If you have any questions regarding these comments, you may contact Mr. Harvey Rogers at (404) 488-7070.

Sincerely yours,

Kenneth W. Holt

Kenneth W. Holt, M.S.E.H.
Special Programs Group (F29)
National Center for Environmental Health

cc:
Mr. Harvey Rogers

Letter #9: DEPARTMENT OF HEALTH AND HUMAN RESOURCES, CENTERS FOR DISEASE CONTROL; ATLANTA, GEORGIA; APRIL 15, 1994; KENNETH W. HOLT, M.S.E.H.; SPECIAL PROGRAMS GROUP (F29), NATIONAL CENTER FOR ENVIRONMENTAL HEALTH

Thank you for your faxed and follow-up mailed comments.

Your letter primarily concerns human health issues relating to direct versus indirect exposure to air emissions, cumulative effects of air-deposited pollutants, presence/absence of chlorinated dioxins and furans, hexavalent chromium levels, adequacy of groundwater monitoring, quality control of the coal gasification slag, and future Centers for Disease Control (CDC) human health reviews. We offer the following comments:

Direct vs. Indirect Exposure

This EIS includes a human health analysis for direct human inhalation exposure to significant air emissions expected from the proposed Polk Power Station. Human health analyses for indirect exposure to the deposition of these air emissions were not performed for Tampa Electric Company's site certification application (SCA) or specifically for this EIS. However, related to the indirect exposure pathway, Industrial Source Complex (ISC2) dispersion modeling was done for the SCA and/or EIS for the proposed project to predict soil deposition of sulfate, nitrate, mercury and beryllium, arsenic, cadmium, total chromium, lead and nickel attributable to the proposed project (see Section 4.12.2.5 and Table 4.12.2-14 of FEIS). The modeling results exhibited low depositional values, although it is difficult to determine the ecological significance of these values and cumulative effects.

In regard to the merits of a direct versus indirect exposure analysis, it is presently not EPA's policy to specifically require consideration of indirect exposure risks. However, the inclusion of an indirect analysis in addition to a direct exposure analysis is evolving within EPA, specifically within the Resource Conservation and Recovery Act (RCRA) program of the Waste Management Division relative to the permitting of hazardous waste incinerators. EPA is becoming more concerned about the indirect exposure pathway relative to human consumption of contaminated meat, milk, and fruits/vegetables. However, although not without predicted impacts, the proposed Polk Power Station was not considered a RCRA site or a hazardous waste incinerator, so that a full direct and indirect exposure analysis was not conducted. This is supported by the fact that the proposed facility is to include a 260-MW integrated coal gasification combined cycle (IGCC) demonstration unit (Polk Unit 1) that is designed to be more efficient and generate less emissions than conventional pulverized coal facilities. In addition, the subsequent units of the proposed by Tampa Electric Company to a full facility build-out capacity of 1,150 MW would use natural gas as the primary fuel (fuel oil as backup), which is "cleaner" than coal or fuel oil used by more conventional facilities.

Air-Deposited Pollutants

It is not anticipated that there would be significant soil buildup of metals over the life of the facility. As indicated above, Table 4.12.2-14 of the FEIS lists the predicted maximum deposition rates of heavy metals (arsenic, beryllium, cadmium, total chromium, lead, mercury, and nickel) based on meteorological conditions for the 1982–1986 period and using ISC2 dispersion modeling. Additional ISC2 dispersion modeling was also performed for sulfate, nitrate, mercury, and beryllium (see Section 4.12.2.5 of the FEIS), specifically to determine sulfate, nitrate, mercury, and beryllium deposition rates

in the Chassahowitzka NWA (see Section 4.5.1.3). The diminutive flushing effects of storm water run-off are not considered for these values.

It would be difficult to predict the ecological significance of mercury deposition in sediments and fish in local surface waters. This is because there is a basic lack of understanding of the mechanisms of mercury transport, deposition, and transformation in the environment. In addition, there is a lack of conclusive data on background mercury levels in the air column, water column, and soils. It is methyl mercury that is bioconcentrated in fish, and can eventually cause adverse human health impacts. However, it is not yet known how to accurately predict this rate of transformation of mercury to this toxic form by microorganisms. Therefore, while mercury levels would slowly elevate as a result of the facility's emissions, the question of whether those levels would individually or cumulatively be elevated enough to create an increased threat to human health is, at this time, unclear. (Also see Section 4.13.1, Cumulative Mercury Impacts.)

Because mercury is an environmental issue in south Florida, several project design and permitting controls should be noted:

- Mercury controls planned for the facility consist of water scrubbing and low operating temperatures (compared with conventional pulverized coal power plants) for the IGCC and the use of clean fuels in other proposed units. The gasification process volatilizes some of the mercury that is naturally present in the coal. Some remains with the slag produced by the process. Volatilized mercury moves with the syngas through the clean-up system. As it cools in the clean-up, mercury is condensed to form particulate matter. A water scrubber to remove particulate matter from the syngas stream is an integral component of the CGCU process. The scrubbed syngas is cooled again prior to entering the acid gas removal system, which results in additional condensation and removal of mercury from the syngas. Thus, upon arrival at the combustion turbine, the syngas is substantially depleted in mercury. Combustion of the syngas produces much less airborne mercury than a comparable pulverized coal facility.

- The conditions in the PSD permit for the proposed 260-MW Polk Unit 1 (copy provided in Appendix D as part of the FDEP Final PSD Determination) allows mercury emissions for the IGCC unit at 0.017 tons/year (tpy) for syngas fuel. This emission rate for mercury is based on 100 percent CGCU operations and up to a 10 percent annual capacity factor firing fuel oil. Mercury emissions for the two-year demonstration is 0.11 tpy on baseload operations firing syngas, with a maximum of 8,760 hours per year of HGCU operations and up to 10 percent annual capacity factor firing fuel oil. Conditions of the permit are based on the Determination of Best Available Technology (BACT), the Determination of Prevention of Significant Determination (PSD) and compliance with New Source Performance Standards (NSPS). As a condition to granting the permit Tampa Electric Company was required by the Florida Department of Environmental Protection (FDEP) to demonstrate that the proposed project would not cause or contribute to an exceedance of any federal or state AAQS, PSD increment, or visibility limit of Florida Ambient Reference Concentration (the FDEP draft Air Toxics Guidelines). These demonstrations were conducted by dispersion modeling techniques approved by the FDEP.

- The other units proposed for the Polk Power Station control mercury by burning clean fuel. The stand-alone CCs and CTs will be fired primarily with natural gas with

distillate fuel oil as a backup fuel source. These fuels are low in mercury content compared with alternative fuels.

Potential impacts of the proposed project on the vegetation, soils, and wildlife of the PSD Class I area were examined by the applicant. The applicant compared maximum concentrations with values described in the literature as having adverse impacts on the various vegetation, soils, and/or wildlife near the proposed facility. Based on this analysis, predicted impacts from the proposed facility are not expected to result in harm or damage to the vegetation, soils, and/or wildlife of the PSD Class I area.

The applicant also performed an analysis of impacts on soils and vegetation, and visibility impairment potential for the region immediately surrounding the proposed facility. The results of these analyses suggest that the proposed facility would not have a significant adverse impact on soils and vegetation, or significantly contribute to any visibility degradation.

Also in regard to cumulative depositional impacts, it should be noted that the PSD permit is only for the Polk Unit 1 increment of the proposed Polk Power Station (i.e., only for the 260-MW IGCC Unit), so that additional permit applications would be needed for the additional units proposed by Tampa Electric Company for a facility full build-out to 1,150 MW.

Furthermore, it should be noted that the U.S. Department of the Interior (DOI) also has expressed concerns regarding cumulative depositional impacts of certain air emissions. In a letter dated February 14, 1994, DOI provided comments to the FDEP on the PSD application and the Technical Evaluation and Preliminary Determination for the proposed Polk Power Station (see DOI letter to FDEP with FDEP cover letter dated February 25, 1994, to Tampa Electric Company in Appendix B, U.S. Department of the Interior). In regard to the Air Quality Related Values Analysis, DOI expressed concern about cumulative depositional effects of sulfate, nitrate, mercury and beryllium and that the DEIS analysis was not cumulative for these pollutants. DOI stated that: "We need to know: (1) the cumulative deposition of pollutants, and (2) the ecological consequences of this deposition," and "We ask that TECO [Tampa Electric Company] be required to perform these analyses when they apply for permits for future phases of their Polk Power Station."

From a NEPA perspective, EPA agrees with the State of Florida that additional modeling to determine potential cumulative depositional effects for sulfate, nitrate, mercury and beryllium (as well as any other reasonable parameters that may need to be monitored), should be modeled for the proposed additional units beyond the 260-MW Polk Unit 1 (if Tampa Electric Company pursues these additional units and the additional need for capacity beyond the approved 220 MW is approved by the Florida PSC). Additional coordination should therefore be conducted by Tampa Electric Company with FDEP during prospective application for such additional units up to 1,150 MW at the Polk Power Station. Based on the February 14, 1994 letter from DOI to FDEP, it appears that the mechanism for resolving the air quality modeling issue has been established for units beyond the 260-MW and up to the 1,150-MW full build-out for the Polk Power Station.

As reference, the chemical properties assumed for modified Illinois No. 6 coal, which is expected to be one source of coal for the proposed Polk Power Station, follows (see Tampa Electric Company SCA-TEC, 1992a).

Assumed Properties of Modified Illinois No. 6 Coal

Property	Maximum Content (on as-received basis)
Proximate Analysis	
Moisture	15.00 percent*
Ash	11.00 percent
Sulfur	3.05 percent
Volatile matter	32.20 percent
Fixed carbon	42.20 percent
Heating value	11,035 Btu/lb (minimum)
Ultimate Analysis	
Moisture	15.00 percent
Carbon	58.70 percent
Hydrogen	4.00 percent
Nitrogen	1.11 percent
Chlorine	0.20 percent
Sulfur	3.05 percent
Ash	11.00 percent
Oxygen	7.90 percent
Trace Elements	
Arsenic (As)	12.59 ppm
Beryllium (Be)	4.73 ppm
Cadmium (Cd)	1.93 ppm
Chromium (Cr)	28.00 ppm
Fluoride (F)	81.00 ppm
Mercury (Hg)	0.28 ppm
Lead (Pb)	4.70 ppm

* Minimum moisture content is 7 percent on an as-received basis.

Note: Percentages for proximate and ultimate analyses do not add to 100 percent since assumed properties are based on a combination of contents for several coals.

Source: Tampa Electric Company, 1992 (originally appeared as SCA Table 3.3.1-1; currently appears as FEIS Table 2.3.4-1).

Radian Corporation, 1992. Multipathway Risk Assessment for the Georgetown Cogeneration Facility. Research Triangle Park, North Carolina.

U.S. Environmental Protection Agency (EPA), 1989. Estimating Air Toxics Emission from Coal and Oil Combustion. EPA-450/2-001. Research Triangle Park, North Carolina.

Chlorinated Dioxins and Furans

Chlorinated dioxins and furans were initially considered but eliminated from the human health analyses for the following reasons:

- All hydrocarbons, except methane, are decomposed in the high temperature, reducing (oxygen deficient) environment of the proposed Texaco gasifier; hence, dioxins/furans are not expected to exist in the gas. This conclusion is consistent with data collected at a Shell gasification plant (similar to the proposed Texaco gasifier in all respects relevant to this discussion) and reported by Baker (1993), who stated that:

  > Very few organic species are present in the syngas because of the severe conditions achieved with pressurized, oxygen-blown, dry-feed, entrained-bed gasification. Heavy hydrocarbons, and organic compounds in general, do not survive; thus, virtually only C^1 molecules are detected in the syngas. In fact, besides methane, which appears in the syngas at part-per-million levels, only low part-per-billion traces of other light hydrocarbons are present in the syngas, along with part-per-billion levels of two C^1 molecules, namely formaldehyde and methyl mercaptan. No polycyclic organic material (POM per Title III of the 1990 CAAA [Clean Air Act Amendments]) or phenolic material was detected in the syngas at the part-per-billion level; furthermore, no POM or phenolic material was ever detected in SCGP-1 [Unit 1 of Shell Coal Gasification Plant] wash water.

- Furthermore, even if trace amounts of organic material that possibly could be considered as dioxins/furans precursors did survive the gasifier's high temperature, reducing conditions, the large amount of hydrogen available in the gasifier precludes the formation of any chlorinated dioxins or furans.

- The chlorine available in the coal is expected to be approximately 0.2% by weight. The chlorine exits the gasifier principally in the form of hydrochloric acid (HCl) and is removed in a wet scrubbing process where it reacts with ammonia, forming an ammonium chloride brine solution stored in the brine storage cells. More specifically, in the case of the proposed CCT IGCC demonstration for the Polk Power Station, the wet scrubbing process would remove virtually all of the chlorine. In fact, based on a 0.2% chlorine content in the feed coal, the HCl concentration in the quench water would be much lower (by two orders of magnitude) than the water's HCl solubility. Hence, if minuscule amounts of potential dioxins/furans hydrocarbon precursors did escape the gasifier, they would have little (if any) chlorine with which to react. The large amount of hydrogen available in the fuel gas would continue to prevent the formation of clorinated dioxins or furans, prior to the removal of the chlorine in the water scrubber.

- Finally, in the unlikely event that any dioxin/furans precursors or chlorinated dioxins/furans survive the gasifier and the scrubber, they would be decomposed in the 2400°F gas turbine combustor.

In summary, polycyclics like chlorinated furans and dioxins should not exist in the high temperature, reducing environment of the proposed Texaco gasifier, the clean fuel gas, or the combustion process and the conditions are not conducive to their formation anywhere in the process.

The IGCC gasification process should not be confused with the combustion process of a municipal waste incinerator. The gasification process is an oxidation process where more oxygen is available than is used and organics such as chlorinated dioxins/furans can be formed during the cool down phase at temperatures below 750°F. The gasification process occurs in a reducing environment at high temperatures where oxidation is incomplete and formation of organics would generally not be expected.

References

Baker, D.C., 1993. Projected Emissions of Hazardous Air Pollutants from a Shell Coal Gasification Process/Combined Cycle Power Plant (presented at the conference: Coal Utilization and the Environment, sponsored by the journal FUEL, Orlando, FL, May 18–20, 1993).

Hexavalent Chromium

Data available from EPA, regarding hexavalent chromium emissions indicate a database supporting a lower ratio than used in the DEIS. The hexavalent chromium (Cr^{+6}) to total chromium (Cr^{T}) ratio (H/T) for distillate oil firing has been measured ranging from 0.35% to 0.48% (EPA, 1989). A 2.0% H/T was reported in risk analysis for a Washington, D.C., cogeneration facility (Radian, 1992). The more conservative 2.0% ratio was used for the IGCC CT emission impact analysis. The syngas is produced from bituminous coal in comparatively low temperature, reducing environment when compared to a commercial boiler. For bituminous coal firing, EPA has published emission factors with H/T ranging from 0.001% to 0.33% for commercial/industrial boilers (EPA, 1989). A more conservative 0.5% was used for the syngas emission calculation.

In regard to compliance testing for hexavalent chromium and other emission assumptions, DOE requires a detailed Environmental Monitoring Plan for all CCT projects. Air emissions, including emissions of chromium and other metals, would be measured and the results reported quarterly.

References

Radian Corporation, 1992. Multipathway Risk Assessment for the Georgetown Cogeneration Facility. Research Triangle Park, North Carolina.

U.S. Environmental Protection Agency (EPA), 1989. Estimating Air Toxics Emission from Cal and Oil Combustion. EPA-450/2-89-001. Research Triangle Park, North Carolina.

Groundwater Monitoring

In regard to your groundwater human health concerns, it should be noted that a survey of wells within two miles of the perimeter of the proposed Polk Power Station was conducted. These include three mining wells and 110 residential wells. The mining wells provide water to transport matrix from the mining site to beneficiation and water for operation of the beneficiation plants. The residential wells are used for drinking water and other household uses. Tables and maps excerpted from the site certification application (SCA: TEC, 1992a) presenting available information on the residential wells are appended at the end of this response for letter #9 from CDC (Note: Accordingly, table and figure numbers relate to the SCA as opposed to this FEIS). This information was gathered by Tampa Electric Company contractor by conducting a local survey to identify nonpermitted wells located within two miles of the perimeter of the site. Of those wells for which information is available, the

casing diameter is generally 2 or 4 inches, and the depth is between 25 and 420 ft. The production wells, communities, and municipalities nearest the proposed site were identified in the FEIS (p. 4-62).

It should be noted that the adjacent residential wells that are used for drinking water take water from a deeper aquifer. This deeper aquifer is isolated from the surficial aquifer by a thick clay layer. Therefore, it is unlikely that potential contamination of the surficial aquifer would cause rapid contamination of nearby wells.

The effects on the surficial aquifer would be due to dewatering during construction and recharge of the aquifer due to seepage once the proposed construction would be completed. During dewatering, page 4-55 of the FEIS states that, "Temporary drawdowns greater than 0.5 ft in the surficial aquifer would not extend to any residences or crop/grove land uses identified on the land-use map" (i.e., FEIS Figure 3.5.2-2). Page 4-56 of the FEIS states that, "Since the surficial aquifer in the site would not be used for potable water supply purposes, and due to the confining layer between the aquifers, the temporary surficial aquifer drawdowns would not affect drinking water supplies and other uses of deeper aquifer systems in the proposed Polk Power Station site area." Specifically, this unaffected area would conservatively include the proposed site.

Upon completion of the proposed construction, the impact to the surficial aquifer would be from recharge to the aquifer due to seepage from the ponds. Page 4-71 of the FEIS describes the modeling used to predict "...a net average annual seepage of approximately 240,000 gpd from the reservoir into the surficial aquifer," and that, "This additional groundwater recharge would stabilize the water table in the vicinity of the site, and enhance recharge to the streams in the area." The water level in the reservoir is to be maintained at 136 ft NGVD, which should "normalize" the groundwater depression in potentiometric surface, caused by groundwater discharge to the phosphate pits, as indicated on page 3-79 of the FEIS. The surficial aquifer is not generally used as a source in this area, but does serve to recharge surface depressions creating permanent surface water features.

Page 4-71 also states that, "The reservoir water quality is predicted to meet all primary drinking water standards." Also, the reservoir water would be analyzed in accordance with NPDES permitting daily for certain parameters and at least twice a year for metals and other toxic chemicals. This, in conjunction with periodic measurement of the water table, should minimize the threat of contamination from the reservoir, while the five-year schedule for monitoring hazardous compounds in groundwater, although it appears long, should be acceptable.

A groundwater monitoring program has been developed and would be implemented for the operation of the proposed project in accordance with applicable FDEP regulatory requirements under Chapter 17-28, Part VII, Florida Administrative Code. The preliminary Groundwater Monitoring Plan is currently being revised in accordance with FDEP instructions to include more parameters and precise locations of wells. A copy of this plan is appended at the end of this response for letter #9 from CDC. EPA recomends that Tampa Electric Company amends or supplements this groundwater monitoring plan with field groundwater measurements of pH, specific conductance, total organic carbon, and total organic halogen.

The monitoring wells are located around the property and appear to be positioned such that they should be capable of detecting contaminant migration. Quarterly sampling is intended to detect changes in basic water quality with ample warning time for corrective action.

Impact to the Floridan, the drinking water aquifer in this area, would be due to the massive withdrawal proposed for operation of the site. The effect to the drinking water supply, therefore, would come

from diminished supply rather than risk of contamination. This concern is discussed on page 4-242 of the FEIS in Section 4.13.3 addressing "Cumulative Groundwater Resources Impacts." However, proposed project groundwater withdrawals are within the criteria of the SWFWMD. Given the long-range effects of growth and water consumption, it is pertinent that groundwater levels are not allowed to be reduced to unacceptable levels for proposed power station water uses and cumulatively for other local uses. In the project area, the increased lowering of the potentiometric surface has three major potential impacts: it induces salt water encroachment along the coastal zone; it affects the salinity, and thus the ecosystem, of surface waters along the coastal zone; and it provides the mechanism for subsidence in the karst limestone. Moreover, should these impacts eventuate, they are irreversible.

References

Tampa Electric Company (TEC), 1992a. Site Certification Application for Tampa Electric Company (TEC) Polk Power Station Project. Prepared by Environmental Consulting and Technology, Inc., and United Engineering and Constructors, Inc. Submitted to Florida Department of Environmental Regulation, Tallahassee, Florida Volumes I-VII.

Coal Gasification Slag

With respect to the issue of the slag by-product and the toxicity characteristic leachate procedure (TCLP) testing, the definitions of "solid waste" and "recycle" versus "reclaim" under appropriate sections of 40 CFR 261 are important. These federal regulations designate that a solid waste exhibits the characteristic of toxicity if the extract from a representative sample of the waste contains any of the contaminants listed in Table 1 of 40 CFR 261.24 at the concentration equal to or greater than the respective values given in that table. The test methodology is the TCLP, or approved equivalent methods. A solid waste which "fails" the TCLP test is considered a RCRA hazardous waste by the characteristic of toxicity. If a material "fails: the TCLP test but does not meet the regulatory definition of "solid waste," it is not a RCRA hazardous waste because it does not first meet the criteria of "solid waste."

In accordance with 40 CFR 261.2(e), materials are not solid waste when recycled if they meet the criteria set forth in 40 CFR 261.2(e)(1)(i)(ii) and (iii). These regulations include reuse as an "ingredient in an industrial process to make a product," "Used or reused as effective substitutes for commercial products," or "returned to the original process from which they are generated...as a substitute for raw material feedstock." To satisfy these regulations, the material must not be "reclaimed" which is defined in 40 CFR 261.1(c)(4) as "processed to recover a usable product, or if it is regenerated." Examples are recovery of lead values from spent batteries and regeneration of spent solvents.

Tampa Electric Company proposes to "recycle" (as opposed to "reclaim") the slag for the Polk Power Station. Specifically, Tampa Electric Company plans to market the slag, which would be used in asphalt for roads and in concrete among other uses. Determinations will need to be made by Tampa Electric Company if the slag is defined as "solid waste" per the above regulations, and if so, if it passes or fails TCLP testing. This will determine if the slag is hazardous or nonhazardous. If the slag is defined as hazardous solid waste, it would be deposited in a secure landfill designed and permitted for that purpose.

Although individual TCLP testing and/or solid waste determinations will need to be made specific to the proposed Polk Power Station, it might be mentioned that slag generated by the Cool Water Generation Station (a currently inactive gasification plant near Los Angeles in Daggett, CA) was

certified as nonhazardous in California. Specific information on the characteristics and use of slag from a Texaco gasifier can be found in the following papers:

Clark, Wayne N., 1987. Cool Water: Economically Competitive and Environmentally Superior Electric Power Production. Presented at the Benelux Association of Energy Economists' Symposium. The Hague, Netherlands. April 22, 1987.

Radian Corporation and Tennessee Valley Authority. 1989. Long-term Leaching Tests with Coal Gasification Slag. EPRI Report GS-6439. July 1989.

Katagiri, K. 1990. Commercial Application of Slag from Texaco Coal Gasification Plant in Ube Ammonia. May 1990 (paper available from Texaco).

de Paz, E.F., Wakefield, E.O., and Najjar, M.S. 1988. Characterization and Utilization of Slag from the Texaco Gasification Process. August 1988 (paper available from Texaco).

In regard to potential radioactivity of the slag, levels of radium-226 can be expected. In this regard, EPA has noticed a final rule entitled "National Emission Standards for Hazardous Air Pollutants; Radionuclides; Final Rule and Notice of Reconsideration" at 40 CFR Part 61 on December 15, 1989. Specifically, Section E on page 51671 discusses "Coal-Fired Utility and Industrial Boilers." In this section, EPA concluded that:

> Therefore, EPA has determined that current levels of radionuclide emissions from coal-fired boilers represent a level of risk that protects the public health with an ample margin of safety.

However, depending on the recycled use of the slag that Tampa Electric Company proposes to sell, other regulations may apply.

Future CDC Reviews

EPA has ensured that CDC is on our FEIS mailing list for this proposed project, and we will mail a copy of the FEIS directly to your Atlanta office for your review. We appreciate your review of this and other NEPA documents for proposed projects.

Table 2.3.3-4. Summary of Non-Permitted Residential Wells Within 2 Miles of the Tampa Electric Company Polk Power Station Site Boundaries

Number	Name	County	Quarter	Quarter	Section	Town-ship	Range	Casing Diameter (inches)	Casing Depth (ft)	Well Depth (ft)	Wells Present
1,2	Mulberry Welding	P	SW	NW	3	32S	23E	4	90	--	1
3	Mr. Sharpe	P	SE	NE	5	32S	23E	4	--	--	1
3A	Mr. Sharpe	P	SE	NE	5	32S	23E	4	--	--	1
4	Ray Albritton	P	SW	NE	5	32S	23E	2	46	156	1
5	N/A	P	NW	SE	5	32S	23E	--	--	--	1
6	David Wheeler	P	NW	SE	5	32S	23E	4	--	240	1
6A	David Wheeler	P	NW	SE	5	32S	23E	2	--	25	1
7	N/A	P	NW	SE	5	32S	23E	--	--	--	1
8	C. Perry	P	NW	SE	5	32S	23E	4	--	200	1
9	T. Morris	P	NW	SE	5	32S	23E	4	--	--	1
9A	T. Morris	P	NW	SE	5	32S	23E	2	--	--	1
10	N/A	P	NW	SE	5	32S	23E	--	--	--	--
11	N/A	P	NW	SE	5	32S	23E	--	--	--	--
12	N/A	P	NW	SE	5	32S	23E	--	--	--	--
13	Mark Spivey	P	NW	SE	5	32S	23E	2	--	88	1
14	Milla	P	NW	SE	5	32S	23E	--	--	--	--
15	Simpsons	P	NW	SE	5	32S	23E	2	--	30	1
16	N/A	P	SW	SE	5	32S	23E	2	--	--	1
17	Cochran	P	SW	SE	5	32S	23E	--	--	--	--
20	N/A	P	SE	NW	5	32S	23E	--	--	--	--
21	N/A	P	SE	NW	5	32S	23E	--	--	--	--
22	N/A	P	NE	NW	5	32S	23E	--	--	--	--
23	N/A	P	NE	SW	5	32S	23E	--	--	--	1
24	N/A	P	SW	NW	5	32S	23E	--	--	--	--
25	N/A	P	SW	NW	5	32S	23E	--	--	--	--
26	McNeil	P	SW	NW	5	32S	23E	2	--	87	1
26A	McNeil	P	SW	NW	5	32S	23E	2	--	35	1

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Table 2.3.3-4. Summary of Non-Permitted Residential Wells Within 2 Miles of the Tampa Electric Company Polk Power Station Site Boundaries (Continued, Page 2 of 5)

Number	Name	County	Quarter	Quarter	Section	Township	Range	Casing Diameter (inches)	Casing Depth (ft)	Well Depth (ft)	Wells Present
27	James Gant	P	SE	NW	5	32S	23E	2	--	--	1
28	N/A	P	SW	NW	5	32S	23E	--	--	--	--
29	N/A	P	NW	SW	5	32S	23E	--	--	--	1
30	N/A	P	NW	SW	5	32S	23E	--	--	--	--
31	Rick Strawbridge	P	NW	SW	5	32S	23E	2	--	--	1
32	N/A	P	NW	SW	5	32S	23E	--	--	--	--
33	N/A	P	SW	NW	5	32S	23E	--	--	--	--
34	Fowler	P	NE	SE	6	32S	23E	2	--	--	1
35	Borden Pearce	P	SE	NE	6	32S	23E	2	--	84	1
35A	Borden Pearce	P	SE	NE	6	32S	23E	1.5	--	94	1
38	N/A	P	SE	NE	6	32S	23E	--	--	--	--
39	N/A	P	NE	SE	6	32S	23E	--	--	--	--
40	N/A	P	SE	NE	6	32S	23E	--	--	--	--
41	N/A	P	NW	NE	6	32S	23E	--	--	--	--
42	N/A	P	NW	SE	6	32S	23E	--	--	--	--
43	N/A	P	SW	NE	6	32S	23E	--	--	--	--
44	N/A	P	SW	NE	6	32S	23E	--	--	--	--
45	N/A	P	SW	NE	6	32S	23E	--	--	--	--
46	N/A	P	NW	SE	6	32S	23E	4	--	--	1
47	N/A	P	NW	SE	6	32S	23E	2	--	--	1
48	Nancy Walls	P	SW	NE	6	32S	23E	4	--	--	1
49	N/A	P	SW	NE	6	32S	23E	--	--	--	--
50	N/A	P	NW	SE	6	32S	23E	--	--	--	--
51	N/A	P	NE	SW	6	32S	23E	2	--	--	1
52	N/A	P	NE	SW	6	32S	23E	2	--	--	1
53	N/A	P	NE	SW	6	32S	23E	4	--	--	1
54	Starling	P	SW	NW	6	32S	23E	--	--	--	1

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Table 2.3.3-4. Summary of Non-Permitted Residential Wells Within 2 Miles of the Tampa Electric Company Polk Power Station Site Boundaries (Continued, Page 3 of 5)

Number	Name	County	Quarter	Quarter	Section	Township	Range	Casing Diameter (inches)	Casing Depth (ft)	Well Depth (ft)	Wells Present
55	N/A	P	NW	SW	6	32S	23E	--	--	--	--
56	N/A	P	NW	SW	6	32S	23E	2	--	--	1
57	N/A	P	SW	NW	6	32S	23E	--	--	--	--
58	Cochran	P	SW	NW	6	32S	23E	2	--	--	1
58A	Cochran	P	SW	NW	6	32S	23E	2	--	--	1
59	George Pope	P	SW	NW	6	32S	23E	4	--	80	1
60	Carmin Howell	P	NW	SW	6	32S	23E	4	--	--	1
61	N/A	P	NW	SW	6	32S	23E	2	--	--	1
62	O'Neal	P	NW	SW	6	32S	23E	2	--	--	1
63	Simmons	P	SW	NW	6	32S	23E	4	--	230	1
64	N/A	P	SW	NW	6	32S	23E	2	--	--	1
65	N/A	P	SW	NW	6	32S	23E	4	--	--	1
66	N/A	H	NE	SE	1	32S	22E	--	--	--	--
68	N/A	H	NW	SE	1	32S	22E	2	--	--	1
69	N/A	H	NE	NE	12	32S	22E	2	--	--	1
70	N/A	P	SW	SW	6	32S	23E	--	--	--	
71	N/A	P	SW	SW	6	32S	23E	2	--	--	1
72	N/A	P	SE	SW	6	32S	23E	--	--	--	--
73	N/A	P	NE	NW	7	32S	23E	--	--	--	--
74	N/A	P	SE	SW	6	32S	23E	2	--	--	1
75	Alderman	P	SW	SE	6	32S	23E	--	--	--	1
75A	Alderman	P	SW	SE	6	32S	23E	--	--	--	1
76	N/A	P	NW	NE	7	32S	23E	--	--	--	--
77	N/A	P	NE	NE	7	32S	23E	--	--	--	--
78	N/A	P	NE	NW	8	32S	23E	--	--	--	--
79	N/A	P	SE	SW	5	32S	23E	--	--	--	--
80	N/A	P	NE	NW	8	32S	23E	--	--	--	--

Table 2.3.3-4. Summary of Non-Permitted Residential Wells Within 2 Miles of the Tampa Electric Company Polk Power Station Site Boundaries (Continued, Page 4 of 5)

Number	Name	County	Quarter	Quarter	Section	Township	Range	Casing Diameter (inches)	Casing Depth (ft)	Well Depth (ft)	Wells Present
81	N/A	P	SW	SE	5	32S	23E	--	--	--	--
83	N/A	P	SW	SE	5	32S	23E	--	--	--	--
84	N/A	P	SW	SW	4	32S	23E	--	--	--	--
85	N/A	P	SW	SW	4	32S	23E	--	--	--	--
86	N/A	P	SW	SW	4	32S	23E	--	--	--	--
87	N/A	P	SE	SW	4	32S	23E	--	--	--	--
88	N/A	P	SE	SW	4	32S	23E	--	--	--	--
89	N/A	P	SE	SW	4	32S	23E	--	--	--	--
90	N/A	P	SE	SW	4	32S	23E	--	--	--	--
91	N/A	H	NE	NE	12	32S	22E	--	--	--	--
92	N/A	H	SE	NE	12	32S	22E	--	--	--	--
93	N/A	H	SE	NE	12	32S	22E	--	--	--	--
94	N/A	H	NE	SE	12	32S	22E	4	--	--	1
95	N/A	H	NE	SE	12	32S	22E	4	--	--	1
96	Rick Jackson	H	NE	SE	12	32S	22E	4	--	380	1
96A	Rick Jackson	H	NE	SE	12	32S	22E	4	--	420	1
97	N/A	H	SW	SE	12	32S	22E	4	--	--	1
98	N/A	H	SW	SE	12	32S	22E	4	--	--	1
99	N/A	H	SW	SE	12	32S	22E	2	--	--	1
100	Tucker	H	SE	SW	12	32S	22E	4	--	--	1
100A	Tucker	H	SE	SW	12	32S	22E	2	--	--	1
101	N/A	H	SE	SW	12	32S	22E	2	--	--	1
102	N/A	H	SW	SW	12	32S	22E	2	--	--	1
103	N/A	H	SW	SW	12	32S	22E	4	--	--	1
104	N/A	H	SW	SW	12	32S	22E	--	--	--	--
105	N/A	H	SW	SW	12	32S	22E	--	--	--	--
106	N/A	H	SW	SW	12	32S	22E	--	--	--	--

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Table 2.3.3-4. Summary of Non-Permitted Residential Wells Within 2 Miles of the Tampa Electric Company Polk Power Station Site Boundaries (Continued, Page 5 of 5)

Number	Name	County	Quarter	Quarter	Section	Township	Range	Casing Diameter (inches)	Casing Depth (ft)	Well Depth (ft)	Wells Present
107	N/A	H	SW	SW	12	32S	22E	4	--	--	1
110	N/A	H	SE	NE	14	32S	22E	--	--	--	--
112	N/A	H	SE	NE	14	32S	22E	--	--	--	--
113	Thornto (or) Lamb	P	--	--	35	31S	23E	4	68	240	1
114	Thornto (or) Lamb	P	--	--	35	31S	23E	4	--	--	--
115	Wayne Lamb	P	SE	SE	1	32S	23E	4	76	224	1
116	Guy Lamb	P	--	--	--	32S	23E	4	73	228	1
117	J. Bennett	P	--	--	11	32S	23E	8	--	--	--

Note: Retained, but questionable:
20 - Gate locked, no mail box, no visible structure.
21 - Gate locked, no mail box, no visible structure.
22 - Gate locked, no mail box, no visible structure.
39 - No one home, windows broken out.
NA = name not available, residence with no individual home during survey.
-- = no data available.
P = Polk County.
H = Hillsborough County.

Source: ECT, 1992.

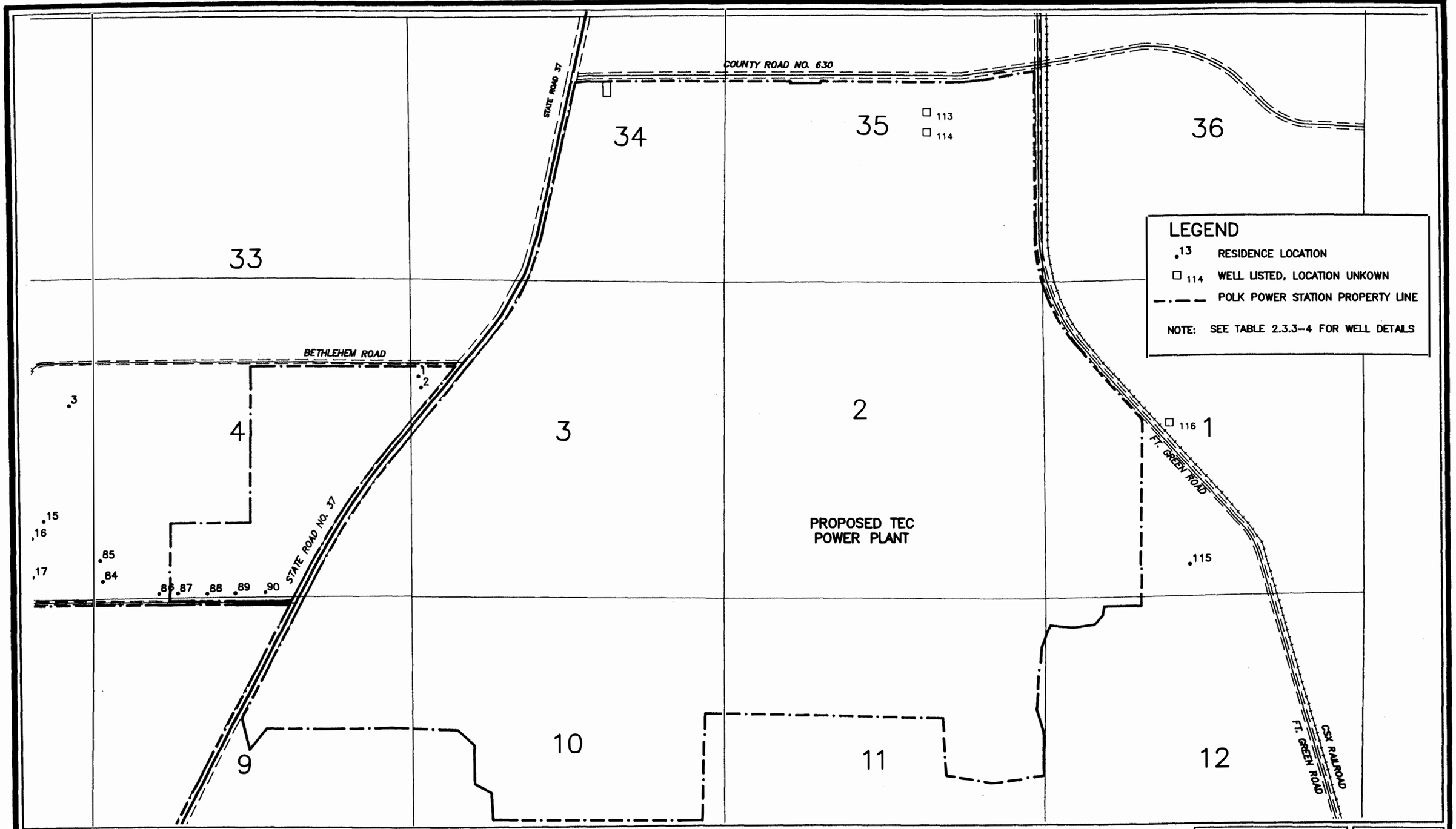

FIGURE 2.3.3-2.

RESIDENTIAL WELL SURVEY MAP (EAST)

Source: ECT, 1992.

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

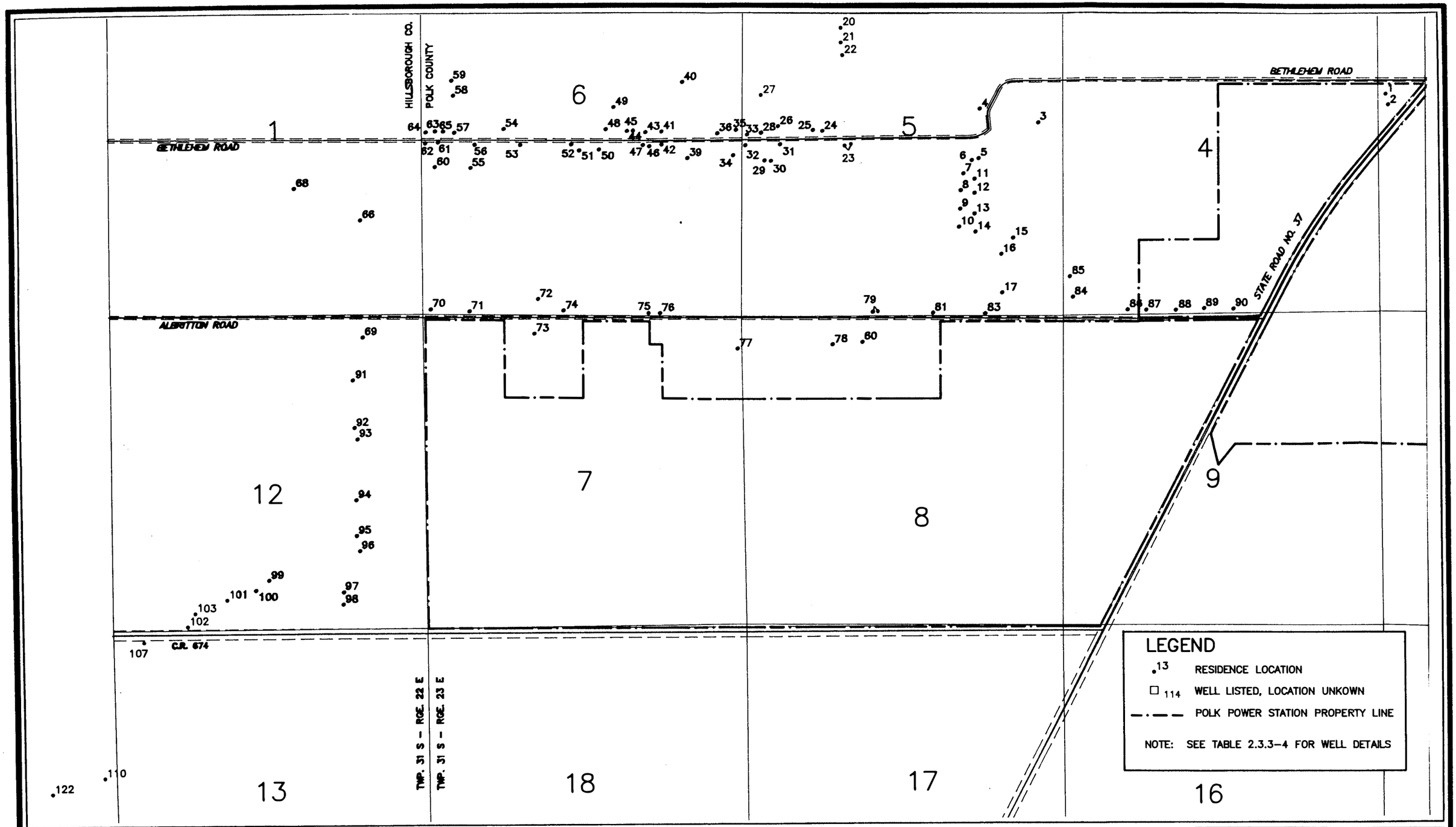

FIGURE 2.3.3-3.

RESIDENTIAL WELL SURVEY MAP (WEST)

Source: ECT, 1992.

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

GROUNDWATER MONITORING PLAN
POLK POWER STATION
TAMPA ELECTRIC COMPANY

APPLICATION INFORMATION

1. **Hydrogeological, physical, and chemical data for the site, including:**

   a. **Direction and rate of groundwater flow and background groundwater quality;**

      SCA Section 2.3.2 Subsurface Hydrology

   b. **Porosity, horizontal, and vertical permeability for the aquifer(s) and the depth to, and lithology of, the first confining bed(s);**

      SCA Section 2.3.2 Subsurface Hydrology

   c. **Vertical permeability, thickness, and extent of any confining beds;**

      SCA Section 2.3.2 Subsurface Hydrology

   d. **Topography, soil information, and surface water drainage systems surrounding the site;**

      SCA Section 2.3.1 Geohydrology
      SCA Section 2.3.4 Surficial Hydrology

2. **Waste disposal rate and frequency, chemical composition, method of discharge, pond volume, spray-field dimension, or other applicable site specific information;**

      SCA Section 3.5 Plant Water Use
      SCA Section 3.6 Chemical and Biocide Waste
      SCA Section 3.7 Solid and Hazardous Waste

3. **Toxicity of waste/waste characterization;**

      SCA Section 3.6 Chemical and Biocide Waste
      SCA Section 3.7 Solid and Hazardous Waste

4. **Present and anticipated wastewater volume, seepage rate to the receiving groundwater, physical, chemical, microbiological (whichever is applicable) characteristics of the leachate;**

SCA Section 5.2 Effects of Chemical and Biocide Discharges

5. **Disposal system water balance;**

SCA Section 5.5 Sanitary and Other Waste Discharge

6. **Present and reasonably expected future pollution sources located within one mile radius of the site;**

(a) Numerous clay settling ponds and associated features;

(b) Florida First Processing, Limited Partnership;

* See Figure 11.7.8-1 for locations.

7. **Inventory depth, construction details, and cones of depression of water supply wells and monitor wells located within one mile radius of the site or potentially affected by the discharge;**

SCA Section 2.3.3 Site Water Budget and Area Uses

8. **Site specific economic and feasibility considerations;**

SCA Section 7.0 Economic and Social Effects of Plant Construction and Operation
SCA Section 8.0 Site and Design Alternatives

9. **Chronological information on water levels in the monitor wells and water quality data on water supplies collected from the water supply and monitor wells;**

SCA Section 2.3.2 Subsurface Hydrology
SCA Section 5.3.2 Impact to Water Supplies - Groundwater

10. **Type and number of waste disposal facilities within the installation;**

SCA Section 5.4 Solid/Hazardous Waste Disposal Impacts

11. **Chronological information on surface water flows and water quality upstream an downstream from the site;**

SCA Section 2.3.4 Surficial Hydrology

12. Construction and operation details of disposal facilities;

SCA Section 5.2 Effects of Chemical and Biocide Discharges
SCA Section 5.4 Solid/Hazardous Waste Disposal Impacts
SCA Section 5.5 Sanitary and Other Waste Discharges

13. History of construction and land development in the vicinity of the site.

SCA Section 2.3.5 Vegetation/Land Use
SCA Section 9.0 Phosphate Mining Reclamation Plan Amendments

MONITORING PROGRAM

1. Monitored Parameters:

Groundwater samples will be collected, transported, and analyzed in accordance with FDER Quality Assurance protocol. The parameters to be monitored at the Polk Power Station include:

PRIMARY DRINKING WATER STANDARDS

- **Inorganic Constituents (mg/L)**

Arsenic, As	0.05
Lead, Pb	0.05
Fluoride, F	4.0

SECONDARY DRINKING WATER STANDARDS

- **Inorganic Constituents (mg/L)**

Chloride, Cl	250
Manganese, Mn	0.05
Sulfate, SO_4	250
Total Dissolved Solids, TDS	500

- **Miscellaneous Parameters**

pH (Laboratory)	ns

2. MONITOR LOCATIONS:

Monitoring locations will include sampling of the surficial aquifer at GW-3 (existing background) and proposed groundwater monitoring stations GW-A, GW-B, and GW-C (Figure 11.7.8-2). Proposed monitor well construction details are presented in Figure 11.7.8-3.

3. MONITORING FREQUENCY

Monitor stations GW-3, GW-A, GW-B, and GW-C are proposed to be monitored quarterly.

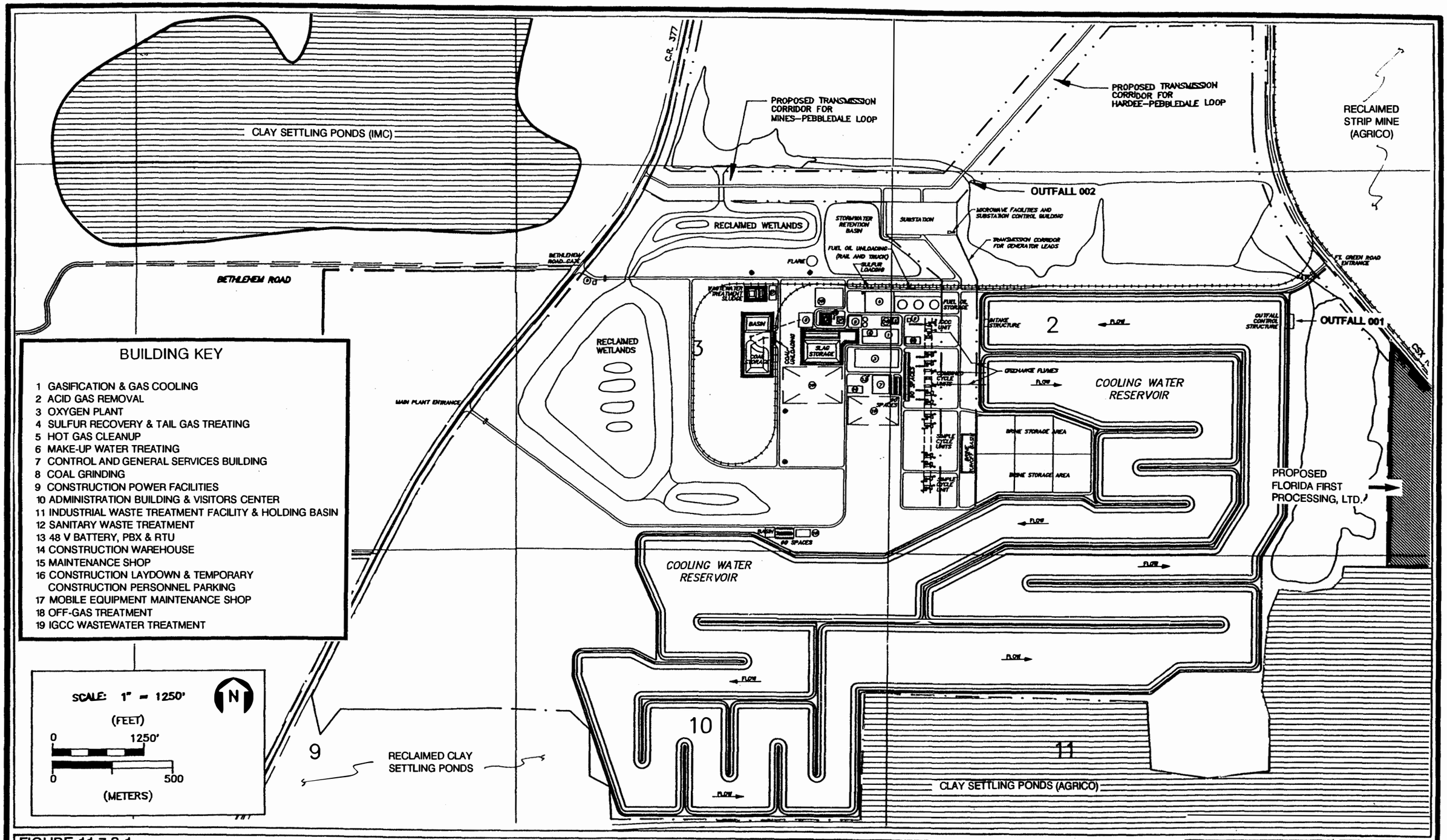

FIGURE 11.7.8-1.

EXISTING AND FUTURE POTENTIAL POLLUTION SOURCES

Sources: UE&C, 1992. ECT, 1992.

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

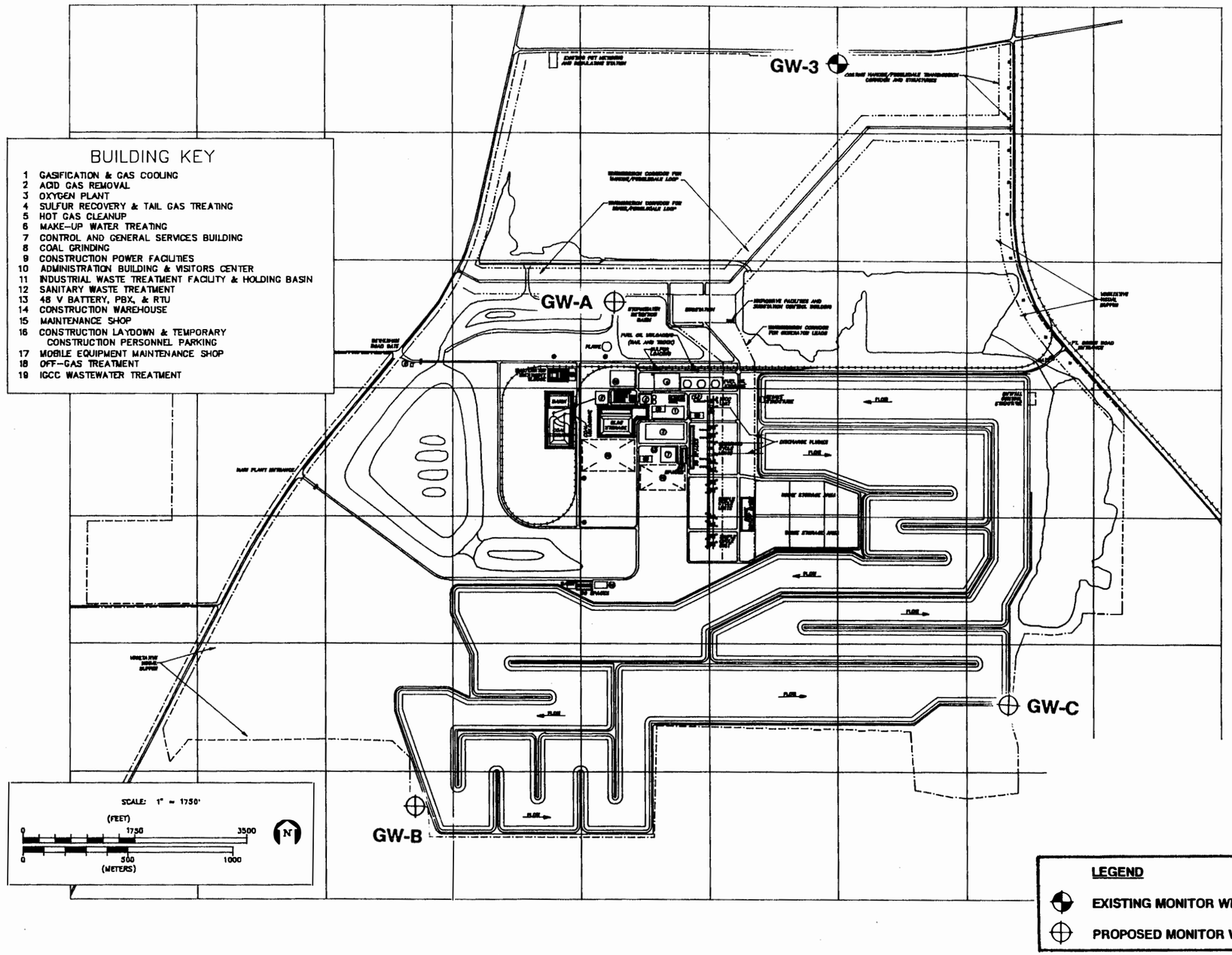

FIGURE 11.7.8-2.

PROPOSED GROUNDWATER MONITORING PROGRAM STATION LOCATION MAP

Sources: UE&C, 1992. ECT, 1992.

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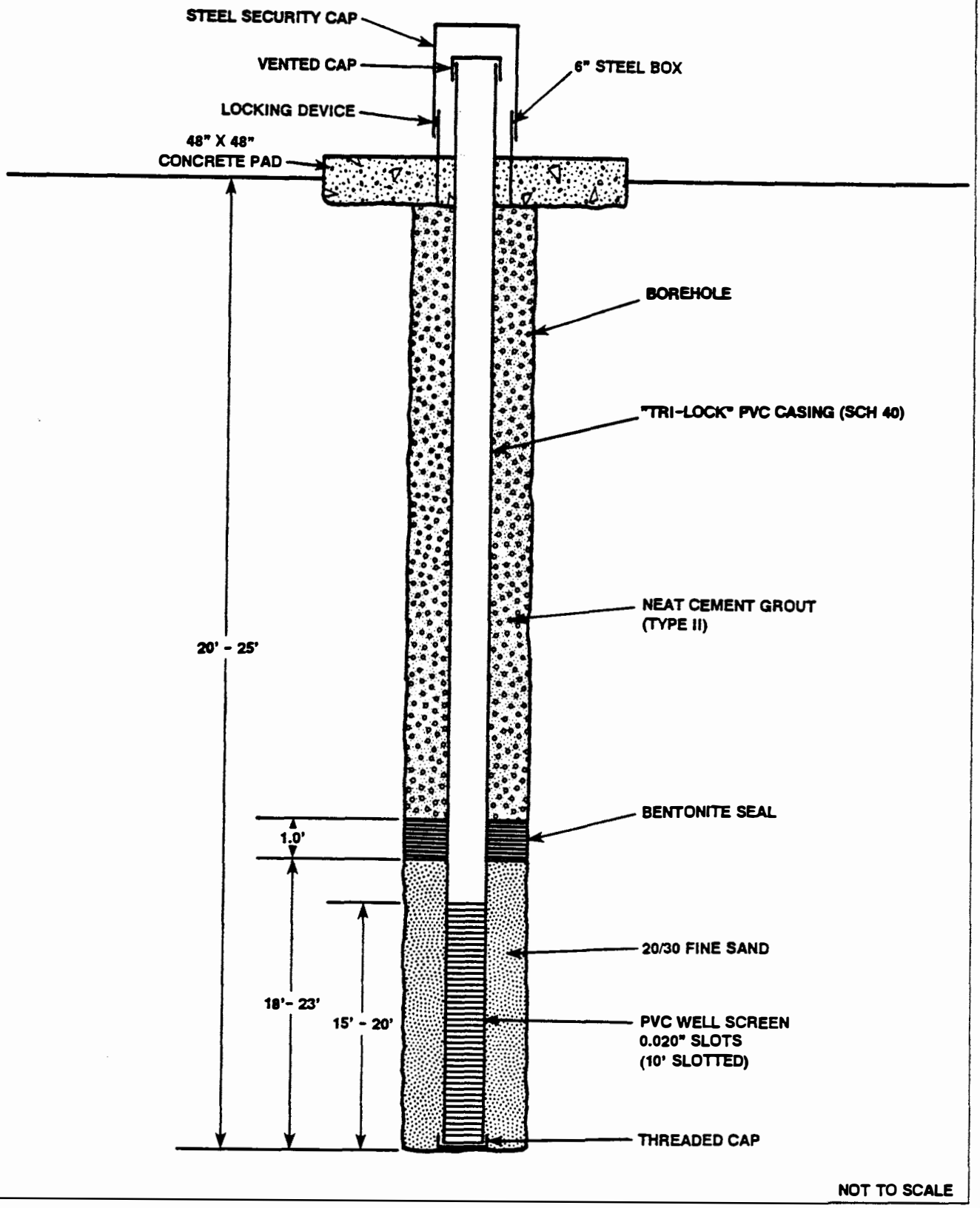

FIGURE 11.7.8-3.
PROPOSED GROUNDWATER MONITORING PROGRAM
MONITOR WELL CONSTRUCTION: SURFICIAL AQUIFER

Sources: UE&C, 1992. ECT, 1992.

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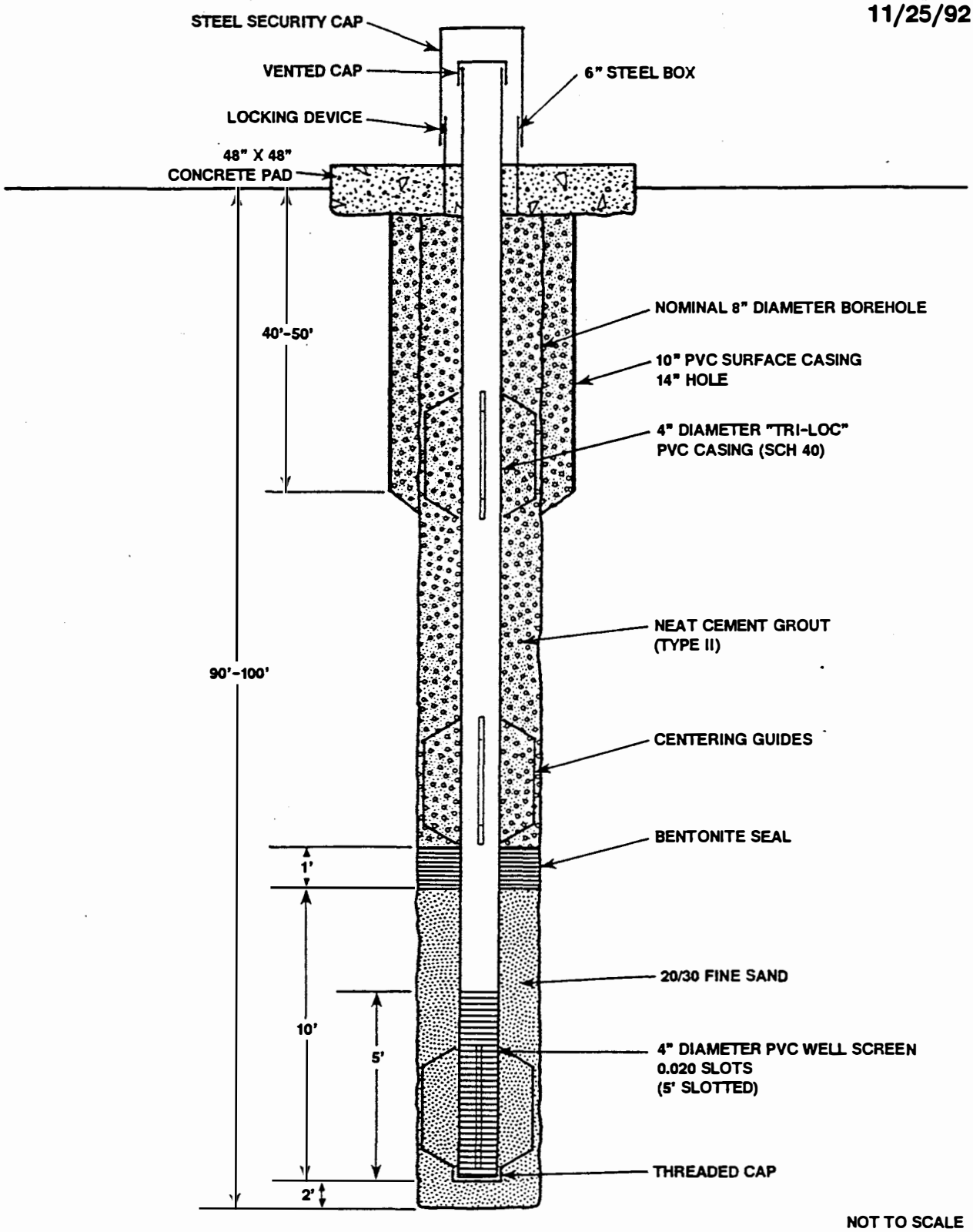

NOT TO SCALE

FIGURE 11.7.8-4 (Rev. 1, 11/25/92)
PROPOSED GROUNDWATER MONITORING PROGRAM
MONITOR WELL CONSTRUCTION:
UPPER INTERMEDIATE AQUIFER
Source: ECT, 1991.

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