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LIBERTY - COOLIDGE

230-kV TRANSMISSION LINE

ARIZONA

Final Environmental Impact Statement

U.S. Department of Energy

1983



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230-kV TRANSMISSION LINE
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Final Environmental Impact Statement

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Responsible Official:

WILLIAM A. VAUGHAN

**Assistant Secretary
Environmental Protection, Safety,
and Emergency Preparedness**



FINAL
ENVIRONMENTAL IMPACT STATEMENT (EIS)
LIBERTY-COOLIDGE 230-kV
TRANSMISSION SYSTEM UPGRADE
DOE/EIS-0100-F

Prepared By:

Western Area Power Administration

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Western Area Power Administration
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Boulder City, Nevada 89005
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ABSTRACT:

Western Area Power Administration (Western) proposes to upgrade electrical transmission capability between the Liberty and Coolidge Substations. The facility will provide additional capacity to help meet forecasted power needs and to enhance system reliability. Alternatives considered were no action, alternative transmission systems, energy conservation, and the proposed action with routing alternatives. Major impacts of the proposed action would be the impacts on aesthetic resources, cultural resources, land use, and agricultural resources.



P R E F A C E

The Environmental Impact Statement (EIS) prepared for the Liberty-Coolidge Transmission System Upgrade comprises the Draft Environmental Impact Statement (DEIS) (DOE 1983) and this document, Final Environmental Impact Statement (FEIS). The two volumes are intended to be reviewed together.

The DEIS, issued in June 1983, contains a statement of purpose and need, a discussion of the scoping process and project-related studies, a discussion of alternative actions, and an environmental analysis of the affected environment and environmental consequences of the proposed action. The DEIS underwent extensive public review by governmental agencies, organizations, and individuals during an official comment period that included public hearings.

This document, the FEIS, contains:

- o A comprehensive summary of the DEIS and FEIS.
- o A description of the public review process, comments from letters and hearings on the DEIS and Western Area Power Administration's responses to comments.
- o Corrections and revisions of data in the DEIS.

Copies of the FEIS have been sent to all agencies, organizations, and individuals listed in Chapter 7 of the DEIS, and to all agencies, organizations, and individuals who have since requested copies.



SUMMARY

INTRODUCTION

The Western Area Power Administration (Western) is proposing to upgrade electrical transmission capability between the Liberty and Coolidge Substations. The project plan is to construct a new 230-kV transmission line (double circuit with the existing Parker-Phoenix 161-kV line) from the Liberty station to the Phoenix station, and to upgrade the existing Phoenix-Coolidge 115-kV transmission line to 230-kV from Phoenix to Coolidge. This Environmental Impact Statement (EIS) was prepared in compliance with the National Environmental Policy Act (NEPA) and the President's Council on Environmental Quality (CEQ) regulations for implementing NEPA.

PURPOSE AND NEED

The existing Phoenix-Coolidge 115-kV transmission line is an integral part of the Western system serving southern Arizona. As reported in the 1980 Arizona Loads and Resource Report, Western has the need to increase transmission capacity into southern Arizona to meet the demands generated by the Central Arizona Project (CAP) (108 MW) and by customer load growth (100 MW). Present capacity is limited to 325 MW, while identified capacity requirements are proposed at 423-433 MW.

The proposed action would serve the following purposes: (1) capacity would be available to supply CAP requirements; (2) capacity would be available to meet anticipated customer growth needs; (3) system and service reliability would be increased; (4) safety conditions would be improved and maintenance costs would be reduced; and (5) a contribution to energy conservation would be made by reducing line losses (see DEIS Chapter 1).

SCOPING AND PROJECT-RELATED STUDIES

In accordance with NEPA rules and regulations, as well as other environmental policies and procedures, regional and corridor-specific studies were conducted for the study area outlined in Figure S-1 of the DEIS. Studies were divided into three broad categories: Natural Resources, which investigated such areas as water resources, wildlife, vegetation, and earth resources; Human Resources, which investigated such areas as land use, aesthetic resources, and socio-economic impacts; and Cultural Resources, which investigated pre-historic, historic, Native American, and architectural resources. A separate report has been prepared for cultural resources.

As required by CEQ and NEPA regulations, a project scoping and public involvement process was undertaken. Activities undertaken prior to the preparation of the EIS included a preliminary environmental assessment, agency contacts, the formation of a project Task Force and Cultural Resources Investigation Peer Review Panel, and a series of public meetings. Additionally, a concerted effort was made to contact and inform the general public of the planning process and progress. Public planning workshops were held and nearly 7,500 letters were sent to potentially affected landowners.



PUBLIC REVIEW PROCESS

Comments were solicited from a wide variety of federal agencies, state agencies, local governments, organizations, and individuals. Approximately 150 copies of the DEIS were distributed. In addition, three public hearings were held in Coolidge, Sacaton, and Avondale, Arizona.

In response, 19 letters were received commenting on the DEIS and six (6) people spoke at the public hearings. Responses to specific comments received in letters and hearings are included in this FEIS (Chapter 1).

ALTERNATIVES INCLUDING THE PROPOSED ACTION

As required by NEPA, alternatives to the proposed action were considered as a part of the study for meeting the stated needs. Four general alternatives were considered: no action; alternative systems and/or technologies; the proposed action with routing alternatives; and energy conservation.

The no-action alternative has been interpreted to mean that no new transmission facilities would be constructed by Western. Western would, however, rebuild and/or refurbish the existing 115-kV system in place. Inspection programs conducted by Western in June of 1978 revealed that 42 percent of the wood poles on the existing Phoenix-Coolidge line were exhibiting signs of shell rot or other structural fatigue. Rebuilding the existing line (no action) would require the replacement of rejected poles. Structurally unsound poles would be removed by either direct pulling from the ground or by cutting 12 to 18 inches below ground level. New poles would be installed as replacements. While such an effort would result in a rebuilt 115-kV transmission system, the action would not meet the needs for additional transmission capacity.

In order to meet stated needs, an examination was made of alternative delivery systems utilizing facilities of other utilities. Although several other utilities, including Salt River Project, Arizona Public Service, and the San Carlos Irrigation Project, maintain and operate lines in the study area, none have the capacity of transferring the power required. In brief, there are no existing or planned transmission facilities owned by other utilities that Western could use to meet the stated need (Arizona Power Authority, 1980).

Underground transmission cable systems for 230-kV are commercially available. Therefore, it is technically feasible to consider underground transmission as an alternative to overhead 230-kV transmission lines for limited applications. Except in urban areas, where right-of-way acquisition for overhead lines may be very expensive or impossible to obtain, it has historically been considerably more economical to construct transmission lines overhead rather than underground.

Replacement of the 115-kV line by a 230-kV line with a larger conductor will result in a substantial energy and capacity savings over the life of the line. The savings, however, are not great enough to offset the increased demand.



DESCRIPTION OF PROPOSED ACTION

Western proposes to construct, operate, and maintain a 230-kV transmission line between the Liberty Substation in Maricopa County, Arizona and the Coolidge Substation in Pinal County, Arizona. Construction of the 230-kV line as proposed will allow for removal of part (34.0 miles) of the existing 115-kV Phoenix-Coolidge transmission line and part (20.0 miles) of the existing 115-kV Phoenix-Maricopa transmission line.

The proposed transmission line will be designed and built by Western. Construction will be accomplished by Western construction forces or a private contractor. Construction of the line will be accomplished by sequential operations of surveying, clearing, foundation installation, structure erection, conductor installation, and cleanup.

THE AFFECTED ENVIRONMENT

The study area lies within the upper Sonoran Desert region, with most areas averaging less than 10 inches of annual precipitation. Temperatures are frequently over 100°F from May through September and freezing seldom occurs in winter. Located in the Basin and Range Physiographic Province, the area is characterized by steep mountains rising from flat alluvial valleys of the Gila, Salt, and Agua Fria Rivers.

Water resources of the study area are rather limited, as would be expected in an arid environment. Three major rivers flow across portions of the area: the Gila, Salt, and Agua Fria Rivers. Each of the rivers is regulated by various types of structures for irrigation and flood control, leaving portions of the streambeds dry or nearly so during most periods of the year.

The study area is a complex mosaic of plant communities which form a broad transition zone between two recognized subdivisions: the Lower Colorado Valley and the Arizona Upland. Native vegetation is generally desert scrub, although some riparian vegetation occurs as a narrow strip along the rivers. No federally listed threatened or endangered species occur in the study area. Arizona state laws protect some species of cacti.

Wildlife habitat consists primarily of desert scrub vegetation, riparian zones, mesquite bosques, and agricultural-residential areas. The habitat supports large numbers of birds, and affords living environments for many desert mammals such as the coyote, jackrabbit, and pocket mice.

The study area is a montage of privately and publically administered lands. The Gila River Indian Community comprises the single largest block of land within the area. Lands on the reservation are either held in trust for the Tribe, or held in trust for individual allottees. Land use in the study area encompasses all possible uses, however, the vast majority of the land is either devoted to agricultural production or is vacant. Although the study area includes land within the corporate limits of several communities, only scattered residential areas lie adjacent to the alternative alignments.



The study area is rich in cultural resources. Most of the resources are closely associated with the river environs and are located on or are in close proximity to the Gila River Indian Community. A complete listing of known cultural resource sites is listed in Section 3.0 of the DEIS. The sites range in size and complexity from limited activity loci to major Hohokam villages (Snaketown). Snaketown is, in fact, designated as a National Landmark. Based on present levels of understanding, most of the identified resources could yield information important to the prehistory or history of the area.

ENVIRONMENTAL CONSEQUENCES

Environmental consequences were assessed by comparing the proposed project with the existing environment. Mitigation strategies to reduce or eliminate impacts were considered and factored as a part of the study process. Impacts remaining after mitigation are considered environmental consequences of the proposed action.

Potential impacts to earth resources are considered to be low and of short-term duration. Accelerated soil erosion could occur in the vicinity of new access roads.

Water resources are not expected to be negatively impacted by the proposed action. Mitigation (usually spanning sensitive areas) will reduce impacts to negligible levels.

Vegetative and wildlife resources are also expected to be minimally affected. Short-term impacts during construction may occur, but impacts will be localized and of low severity.

Land use impacts are most significant as they relate to human values. Long-term impacts to agricultural uses and removal of cropland from production will occur. Potential significant impacts can also be identified for scattered residences throughout the area and for the Stellar Air Park (Alternative 1).

Visual impacts are considered to be adverse and long-term. Visual intrusion would continue throughout the life of the project. Limited mitigation, in the form of neutral conductor and non-reflective structure color, will be undertaken.

Impacts to cultural resources would be permanent and long-term. Varying levels of significance have been and can be attached to the resources in the area. Some, such as Snaketown, would be difficult if not impossible to mitigate. Other sites of smaller density and size may be mitigated by such techniques as spanning or data recovery.

Electrical effects to human, plant, and animal life were considered during the study. No significant impacts are expected as a result of corona and/or electric field effects. Adverse effects on agriculture are not anticipated because field strengths from the proposed action are below levels where effects have been observed. Western employs grounding practices and other mitigative techniques which minimize potential dangers from induced currents and voltages, and secondary shocks.



PROPOSED ACTION

Based upon analyses completed for all discipline sectors, public input, and mitigation potentials, an "environmentally preferred" route has been identified.

The proposed action (85.0 miles) originates at the Liberty Substation and would follow the existing Parker-Phoenix No. 2 161-kV transmission line in an easterly direction to a point near the existing Phoenix Substation (51st Avenue). The existing structures would be rebuilt to accommodate both the existing 161-kV line and the proposed Liberty-Coolidge 230-kV transmission line.

At a point south of the Phoenix Substation, the proposed route will be double-circuited with the existing 115-kV Phoenix-Maricopa transmission line (replacing the existing Phoenix-Coolidge 115-kV transmission line) in a southerly direction for approximately 7.5 miles. The proposed action will then turn southeasterly, generally following the existing Phoenix-Coolidge 115-kV corridor to the intersection of the existing Arizona Public Service (APS) Ocotillo-Santa Rosa transmission corridor. The proposed action will generally parallel the APS corridor for approximately 15.0 miles in a southerly direction to Farrell Road. Turning east, the route parallels Farrell Road for approximately 12.0 miles to old Highway 93. The route parallels Highway 93 to the southern boundary of the Gila River Indian Community where it continues in an easterly direction for approximately 4.0 miles. At this point, the proposed action follows a circuitous route through the Sacaton Mountains to a point one mile north of Val Vista Boulevard and one mile east of Overfield Road. The route then parallels the section line to the intersection with the existing Western Coolidge-Saguaro transmission line. From this point, the proposed route will be double-circuited with the existing Coolidge-Saguaro line to the Coolidge Substation.

As a part of the proposed action, Western would remove approximately 20.0 miles of the Phoenix-Maricopa 115-kV and double-circuit it with the new Liberty-Coolidge line along the alignment of the APS Ocotillo-Santa Rosa corridor (40th Street in Phoenix) to Farrell Road. In addition, the proposed action would allow for the removal of approximately 35.0 miles of the existing Phoenix-Coolidge 115-kV line. Line removal would total 55.0 miles and new right-of-way acquisition would total approximately 31.0 miles. Removal of lines from existing corridors will be undertaken in accordance with applicable guidelines and procedures including an extensive cultural investigation so as to minimize potential harmful effects. Long-term impacts following line and structure removal would be beneficial.

The location of the proposed action is described in Section 1.0 of this document (map included).



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1.0 PUBLIC COMMENTS AND AGENCY RESPONSES

INTRODUCTION

Public comments on the Draft Environmental Impact Statement (DEIS) were solicited from governmental agencies, organizations, and individuals. Responses were received in both written and oral form. Nineteen written responses were received and six people commented at the public hearings.

Issues raised by the public have been responded to in Tables 1-1F, 1-2F, and 1-3F. Where possible, issues from letters and hearings have been summarized. Letters that could not be easily summarized are reproduced in full.

PUBLIC REVIEW PROCESS AND PROCEDURES

The DEIS was filed with the Environmental Protection Agency and released to the public on 27 June 1983. Notices of filing and dates and locations of public hearings were published in the Federal Register on 7 July 1983 and revised on 1 August 1983, and in local newspapers beginning 8 August 1983. The public comment period expired on 29 August 1983.

Approximately 150 copies of the DEIS were sent to various agencies and individuals for review and comment (DEIS, Section 7.0). In response, 19 letters commenting on the DEIS were received by Western. Copies of the responses and transcripts of the public hearings may be inspected at the Boulder City, Nevada Area Office, Western Area Power Administration. Please call (702) 293-8844 for arrangements to view the documents.

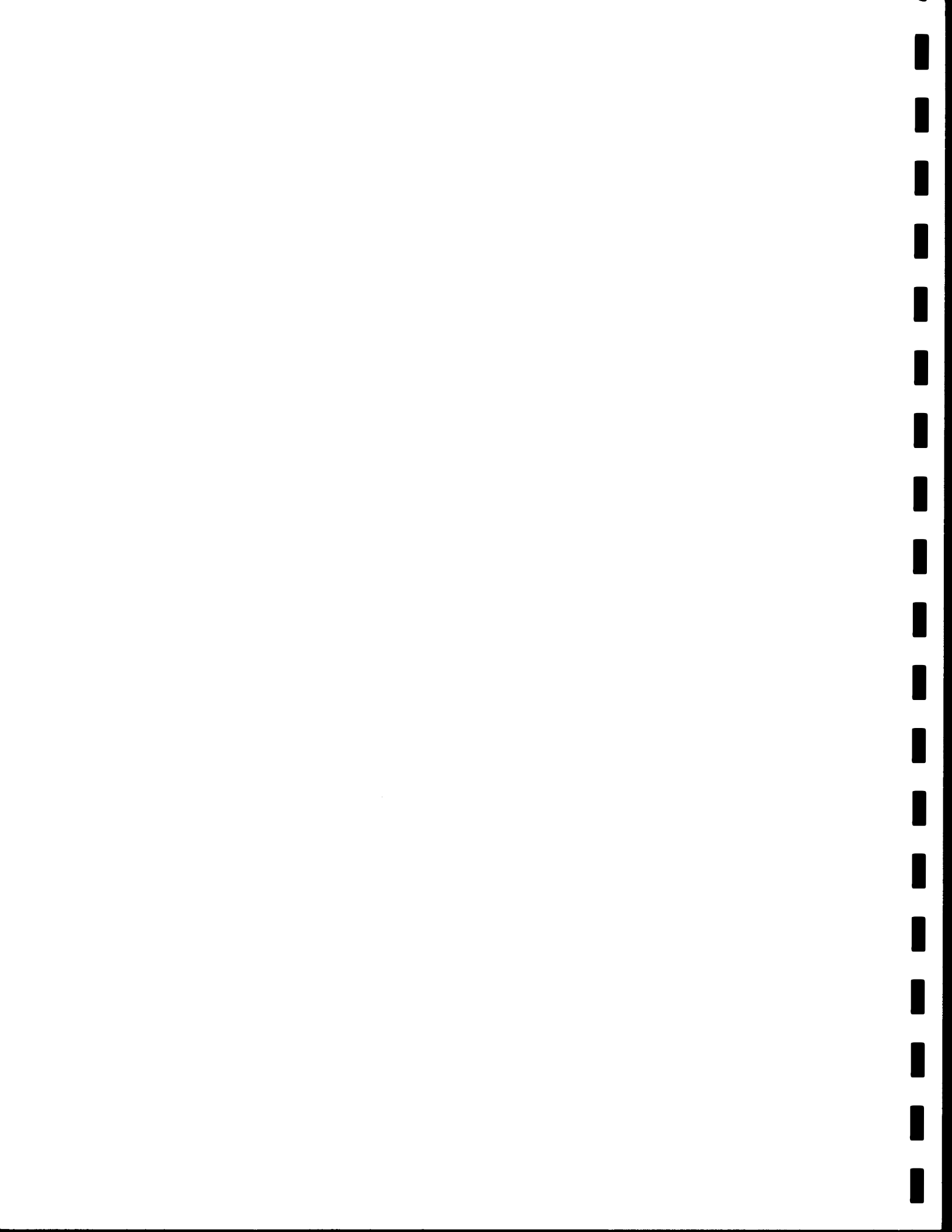
Formal public hearings on the DEIS were conducted by Western in Coolidge, Arizona; Sacaton, Arizona; and Avondale, Arizona. The hearings were held on the evenings of August 15, 16, and 17, 1983, respectively. A total of two people spoke in Coolidge; four people spoke in Sacaton; and no one commented at the Avondale meeting.



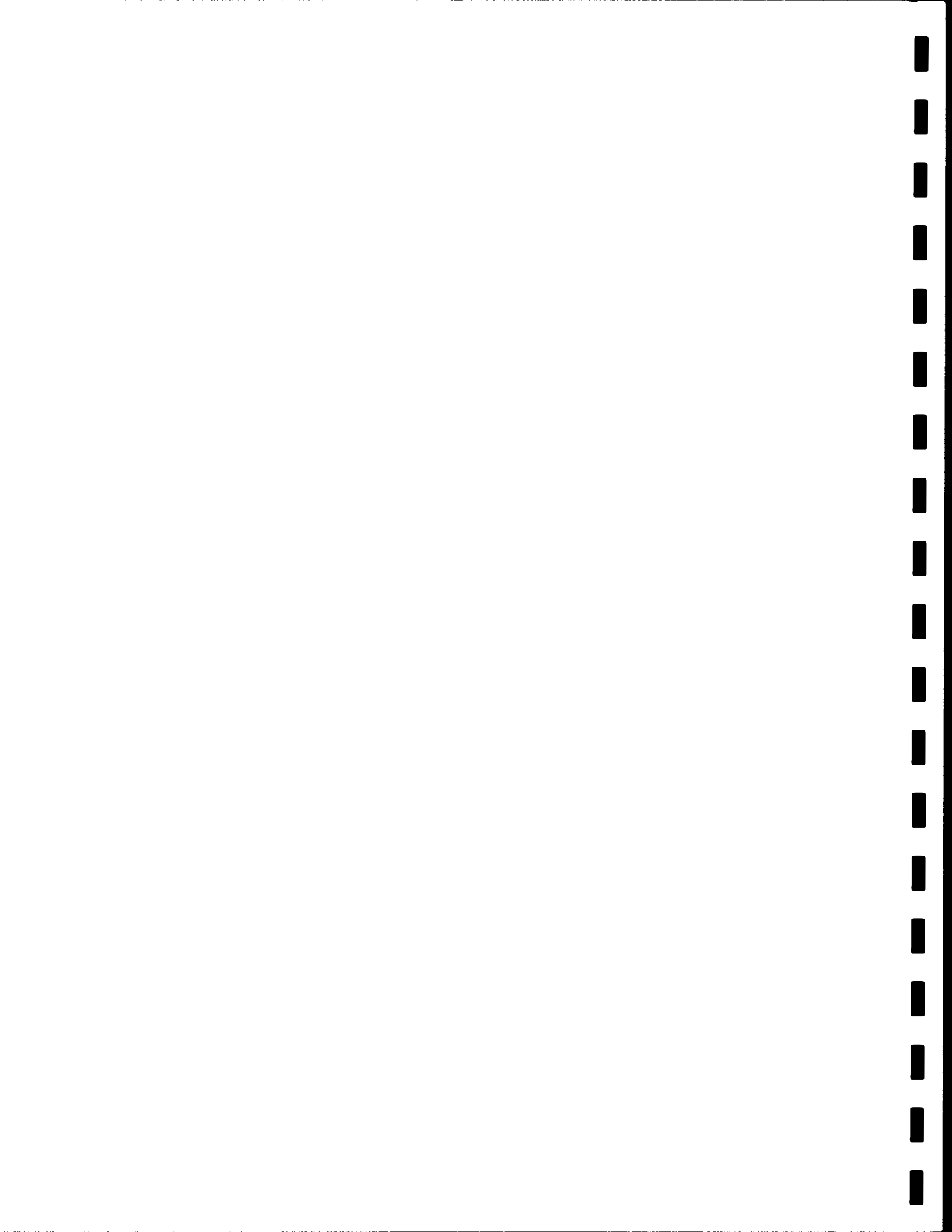
TABLE 1-1F

DRAFT ENVIRONMENTAL IMPACT STATEMENT
Summaries of Letters and Responses

COMMENT NO.	FROM	ISSUE/CONCERN	RESPONSE
1a	Arizona State Clearinghouse	Signoff.	None.
1b	Arizona Mineral Resources Department	No comments.	None
1c	Arizona Natural Heritage Program	No comments.	None.
1d	Arizona State Land Department	No comments.	None.
1e	Arizona Indian Affairs Commission	No comments.	None.
1f	Maricopa Association of Governments	No comments.	None.
1g	Transportation Planning Office Maricopa Association of Governments	No comments.	None.
1h	Central Arizona Association of Governments	No comments.	None.
1i	Arizona Agriculture and Horticulture Department	Requires 30 day notification prior to construction to allow for survey of protected native plants.	Comment has been noted and will be complied with.
2	USDI, Bureau of Indian Affairs, Phoenix Area Office	"Our office has been an active participant in drafting this document. We, therefore, offer no additional comments at this time."	None.
3	City of Chandler	"The proposed action does not pose problems that we had identified previously; therefore, we withdraw previous objections to your project."	None.



COMMENT NO.	FROM	ISSUE/CONCERN	RESPONSE
4	USDA, Forest Service Region 3	"No National Forest System lands are involved in the proposal in any of the alternatives or recommendations considered."	None.
5	John McCain Congress of the United States House of Representatives	No comments.	None.
6	Advisory Council on Historic Preservation Western Division	"Western is to be commended for the sensitivity to and consideration of cultural resources at the earliest planning stages of this proposed undertaking." Anticipate consultation between the Council and Western for Section 106 compliance.	Western is consulting with the Advisory Council and will complete the consultation process as required by 36 CFR Part 800.4.
7	Rio Salado Development District	Development plans still under preparation. "...suggest a close communication and coordination as the design continues."	Comment has been noted and continued coordination will occur.
8	USDI, National Park Service Casa Grande Ruins	Concern about potential visual intrusion. Suggests review and coordination with Advisory Council.	Proposed action will double-circuit with Coolidge-Saguaro. New structures will be placed in the existing right-of-way and will replace existing structures. Coordination with the Advisory Council has taken place and will continue to occur.
9	City of Phoenix	Although no Phoenix City Council action is anticipated, they will continue to coordinate with Western.	None.



COMMENT NO.	FROM	ISSUE/CONCERN	RESPONSE
10	Arizona Agricultural Aviation Association	Opposed to routing powerline through or in immediate vicinity of crop-producing land when alternate routes over nonfarm lands are available. Presents hazards to agricultural aircraft.	The proposed action will cross or be placed adjacent to approximately 15 miles of previously uncrossed farmland. Approximately 10 miles of existing corridor crossing farmland will be removed. Hazard markers will be placed on the transmission line as deemed appropriate.
11	U.S. Department of Housing and Urban Development	The document omits studies analyzing potential impacts of low level radiation on residential land uses adjacent to the transmission line and electrical effects of the line on radio and TV receivers. Potential visual impacts.	Electrical effects were addressed in the DEIS (4-36 to 4-39). No adverse impacts are expected. Western will construct and maintain the line in such a manner that potential influence discharges are kept below accepted limits. The proposed action will cause a visual intrusion to the landscape for the life of the project (DEIS 4-24). Mitigation measures including neutral structure and conductor coloring, and select structure placement will be undertaken to lessen visual intrusions.
12	The Wildlife Society, Arizona Chapter	Specific comments.	Reproduced and responded to in Table 1-2F.
13	Howard H. Karman, representing Daley and Bogle Farms, Inc.	Specific comments.	Reproduced and responded to in Table 1-2F.
14	Arizona Game & Fish Department	Specific comments.	Reproduced and responded to in Table 1-2F.
15	U.S. Environmental Protection Agency	Specific comments.	Reproduced and responded to in Table 1-2F.



<u>COMMENT NO.</u>	<u>FROM</u>	<u>ISSUE/CONCERN</u>	<u>RESPONSE</u>
16	USDA, Soil Conservation Service	No comments.	None.
17	Bureau of Geology and Mineral Technology, State of Arizona	Specific comments.	Reproduced and responded to in Table 1-2F.
18	USDOJ - Office of the Secretary, Pacific Southwest Region	Specific comments.	Reproduced and responded to in Table 1-2F.
19	Department of Health and Human Services	Specific comments.	Reproduced and responded to in Table 1-2F.

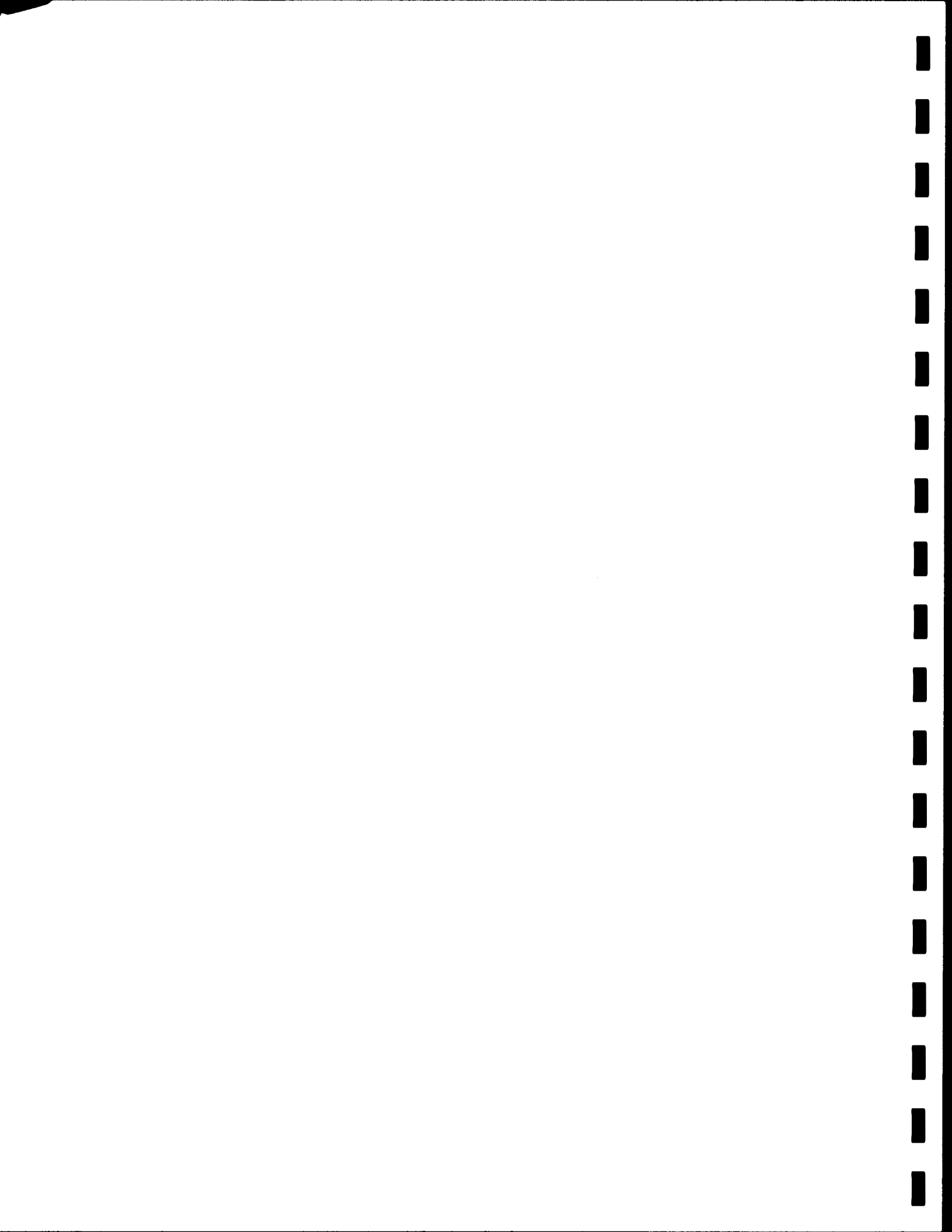
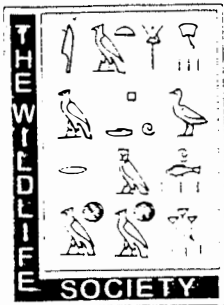


TABLE 1-2F

DRAFT ENVIRONMENTAL IMPACT STATEMENT

Complete Letters and Responses



THE WILDLIFE SOCIETY, ARIZONA CHAPTER
2222 W. Greenway Rd.
Phoenix, AZ 85023
942-3000 Ext. 254

17 August 1983

Ref: G1010
EIS-0100-D

OFFICIAL FILE COPY		
RECEIVED AUG 22 1983		
Action: _____		
Action Taken: _____ (Initials)		
Date	Initials	To
8-23-83	C. Saylor	10700
		1000
		0005
		2000

Western Area Power Administration
ATTN: Chuck Saylor
P.O. Box 200
Boulder City, NV 89005

The EIS referred to above has been reviewed by the Chapter and after discussion with wildlife professionals who interacted with WESTERN at the ground level and checking the document, we concur with the selection of the Proposed Action corridor. The minor exceptions we found are listed below. Following are our general comments regarding projects of this type:

2.2 Description of Alternatives (page 2-1)

The description of "No Action" needs to be more detailed. Justification consisted of noting that a "stated need" would not be fulfilled. Was that need substantiated by sources other than utility companies and those directly involved? State planning agencies or independent companies have data for support. Certainly, other sources of growth and need could have been referenced.

2.6 Routing Alternatives (page 2-13, last paragraph)

One of the criteria used in determining route corridors was the avoidance of diagonals. However, Alt. 2, 3, and 4 are for all practical purposes diagonal for the majority of their length.

3.2.5 Wildlife (3-9, 1st paragraph)

WESTERN recognizes the wildlife value of riparian and wetland habitats and should consult the wildlife professionals in the affected area for site-specific mitigation. Each site should be considered separately as to on-site mitigation possibilities.

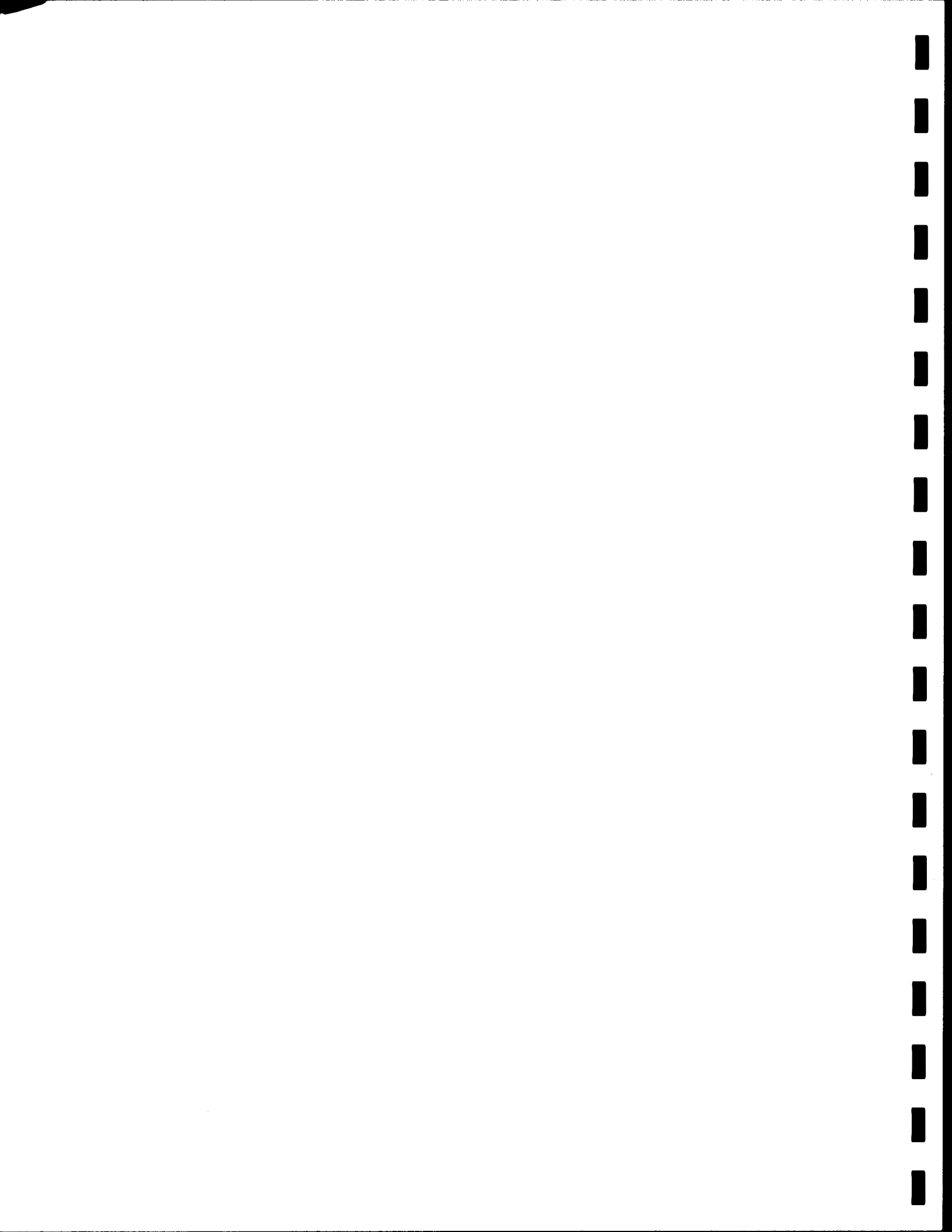
Route 1 avoids the riparian areas better, but adequate mitigation for the Proposed Action should present no significant impact to wildlife.

As stated, No Action means that no new transmission facilities would be constructed by Western. As detailed, however, in Section 1.0 of the DEIS, the existing 115-kV transmission line does not have the capacity to serve future growth needs including Central Arizona Project pumping requirements. Documentation for this need is found in the 1980 Arizona Loads and Resource Report compiled by Arizona Public Service, Salt River Project, Tucson Electric Power, Arizona Electric Power Cooperative, Arizona Power Authority, and Western.

Alternative routes 2, 3, and 4 all follow a general northwest to southeast (diagonal) alignment across the Gila River Indian Community. An additional siting criteria (DEIS 2-15) is the use of existing corridors. The diagonal crossing as described is in fact the alignment of the existing Phoenix-Coolidge 115-kV transmission line. As part of the proposed action, portions of the Phoenix-Coolidge 115-kV transmission line will be removed (DEIS Figure 4-1).

Generally, Western, as permitted and ruling distances allow, will span riparian areas potentially affected by the proposed action. Attention is called to the DEIS (4-48) for a discussion of mitigation strategies.

1-6F



(3-10, 5th paragraph)

The lack of information on Gila monsters and desert tortoises is regrettable, reflecting on the low levels of support funding available for scientific undertakings. As new information becomes available, WESTERN should consider minor modifications in the right-of-way maintenance as outlined by consultation.

4

4

Western will consider minor right-of-way modifications to the proposed action as new information becomes available concerning species or subspecies (i.e., Gila monster and desert tortoise), whose status in Arizona may be in jeopardy in the foreseeable future.

4.2.5 Wildlife (4-9, Proposed Action)

The conclusion of no significance appears to be hasty. WESTERN noted a lack of information on most wildlife populations in the area. Hard data are necessary for conclusions to be rendered. Little or no significant impact is expected or is unlikely is more realistic.

5

5

No response necessary.

(4-9, 2nd paragraph)

Collision possibilities could be reduced with the adequate use of orange aviation line devices, versus required only (as noted in 4.6, page 4-46).

6

6

No response necessary.

4.5 Electrical Effects (4-37, Health and Safety)

We assume that the design of the lines will incorporate "raptor-proofing". The establishment of structures will likely be followed by use as perch sites, and possibly as nesting structures.

7

7

Electrocution of birds perching on powerlines does occur. Electrocution results from simultaneous contact with two conductors (wires), a fact which causes most such incidents to be associated with power distribution lines (lines generally having a capacity of less than 69-kV). The distances between conductors of high-voltage lines (DEIS, Figures 2-2, 2-3, 2-4, 2-5) are greater than the wingspans of most birds, making electrocutions unlikely.

Thank you for the opportunity to comment on the written EIS. The Chapter supports the local wildlife professionals' choice of the Proposed Action. We commend WESTERN for the professional job by staff and consulting agencies in preparing the document.

Sincerely,

Richard A. Ockenfels
Richard A. Ockenfels
President-Elect

Conservation Affairs Committee: RAO, JPH



1-8F

CENTRAL

RECEIVED
JUN 26 1983

JUL 13 LIA 1000
5-29-83 C. Doyle 1015
CDB
2000
2300

Mr. Charles Saylor
Area Environmental Officer
United States Department of Energy
Western Area Power Administration
Post Office Box 200
Boulder City, Nevada 89005

Dear Mr. Saylor:

As you are aware, my clients own Sections 5 and 6, Township 5 South, Range 4 East of the Gila and Salt River Base and Meridian, Pinal County, Arizona, bordered on the North by Farrell Road, over which the power line your agency proposes to construct will pass if either the "Proposed Action" route or the "Alternative 5" route is chosen. As a consequence, if so constructed, the power line will pass over my clients' property for two miles.

1. They will jointly suffer the loss of approximately 100 acres of prime farm land, if a right-of-way or easement 400 feet wide is required.

Standard design features (DEIS 2-28) will require a 100-foot right-of-way width. Computed over a two-mile distance, the right-of-way required would approximate 24 acres. Generally, the landowner can use the land within the easement area, except for actual structural sites, for any purpose, including farming, that does not interfere with Western's rights.



2. Even if they retain title to the fee, the land beneath the power line will not be able to be farmed, since it will not be possible to do aerial application of fertilizers, insecticides and other agricultural chemicals.

2

3. They will suffer a decrease in value of their remaining farming property, resulting both from having a smaller farming parcel, and from the existence of the unsightly pole line which will be created.

3

4. They will experience additional costs in all future farming operations because of the foreshortened rows, since all irrigation on these farms takes place from a south to north direction.

4

5. They will experience additional costs in all future farming operations because of the additional cost of aerial application, due to the additional risks taken by the applicators when flying in the vicinity of the power line.

5

6. Since two large electrical distribution lines already exist on the west end of the west farm, that farm will be hemmed in on two sides by power lines, making it exceedingly difficult to farm.

6

7. Alternative Route 3 crosses with a new utility corridor much less developed agricultural land (by 10.4 miles); is substantially shorter (by 13 miles); requires the acquisition of much less new right-of-way (by 26.6 miles); and as a result, using the least costly construction method as a base criteria, would result in a savings, in construction costs alone, of \$950,300.00. Also a substantial savings would result from the need not to acquire additional right-of-way. (Assuming a base cost of \$1,000.00 per acre for right-of-way acquisition, and the need to acquire a 100 foot right-of-way over 26.6 miles, the savings would amount to an additional \$665,000.00.)

7

My clients ask that this letter be made a part of the record of comments in connection with the Draft

8

2 [See comment 1 above.

3

The right-of-way will be appraised in accordance with the Uniform Appraisal Standards for federal land acquisition. The appraisal considers all conditions that result in a decrease in value to the easement area and to the remaining property. There are also provisions in the easement contract to provide for payment for damages to crops and improvements that result from construction or operation of the transmission line. Factors that might affect farming and its operation should be brought to the attention of the appraisers at the time of appraisal so that adequate compensation can be made in accordance with applicable laws and regulations governing federal land acquisition, including the Uniform Relocation Assistance and Real Property Acquisition Act of 1970 (Public Law 91-646).

4 [See comment 3 above.

5 [See comment 3 above.

6 [See comment 3 above.

7 [Your comment has been noted.

8 [Your comment has been noted.



Environmental Impact Statement, and that every consideration be given to Alternative Route 3 in place of the proposed route crossing their lands.

Very truly yours,

Howard B. Karman

cc: Mr. Duane B. Daley
1500 North Markdale
Villa 55
Mesa, Arizona 85201



BRUCE BABBITT, Governor

MEMBERSHIP:
CHARLES F. ROBERTS, O.D., Stables, Chairman
FRANK FERGUSON JR., Yuma
FRANCES W. WERNER, Tucson
CURTIS A. JENNINGS, Scottsdale
JOHN J. GISH, Flagstaff

Director
BUD BRISTOW

Deputy Director
ROGER J. GRUENEWALD



ARIZONA GAME & FISH DEPARTMENT

2222 West Greenway Road Phoenix, Arizona 85023 942-3000

REGION VI
7200 East University
Mesa, Arizona 85207 981-9400
August 2, 1983

Mr. Chuck Saylor (G1010)
Western Area Power Administration
P. O. Box 200
Boulder City, Nevada 89005

RE: Draft Environmental Impact
Statement (DEIS)
Liberty - Coolidge
230-kV Transmission Line

Dear Mr. Saylor:

The Arizona Game and Fish Department has reviewed the above-referenced document and the following comments are provided.

We found the document's analysis of the existing natural resources to be an accurate description of the current biological scene.

We do, however, have several recommendations which involve the Environmental consequences portion of the DEIS; they are as follows:

- A joint onsite review of any disturbance to riparian areas should occur between Department and Construction Personnel prior to construction activities.
- Any displaced or injured wildlife, especially state listed species, should be delivered to the Department for proper disposition.
- Utilization of chemical herbicides for corridor maintenance must be coordinated with the Department and evaluated on case by case basis.

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Action Taken			
Date	Initialed	To	
8-9-83	C. Saylor	1000	0005

- 1 [An on-site review has been planned by Western as part of the mitigation strategies to be undertaken. Western will coordinate with Arizona Game and Fish as appropriate.
- 2 [Your comment has been noted and will be complied with.
- 3 [Herbicides are not generally used in Arizona, however, herbicides used by Western are those registered with the Environmental Protection Agency in compliance with the Federal Pesticide Control Act of 1972 and other Federal regulations. If chemical herbicides should be necessary, their use will be coordinated with the Arizona Game and Fish Department as required.

1-111F



Mr. Chuck Saylor
Western Area Power Administration

Page 2
August 2, 1983

Additionally, total acreages for each vegetation type, depicting temporary and permanent losses should be included. This would better enable the Department to determine the adequacy of the proposed compensation.

4

Regarding the selection of a preferred alternative, our Department supports the Proposed Action.

5

We appreciate the opportunity to review and comment on this action.

Sincerely,

Bud Bristow, Director

James E. Burton

James E. Burton
Habitat Evaluation Specialist
Mesa Regional Office

JEB:ljg
cc: Planning and Evaluation Branch,
Phoenix Headquarters

4

Your comment has been noted. Information can be provided during acquisition negotiations.

5

Your comment has been noted.

1-12F





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX
215 Fremont Street
San Francisco, Ca. 94105

AUG 29 1983

R. A. Olson
Area Manager
Western Area Power Administration
P.O. Box 200
Boulder City, Nevada 89005

Attn: Mr. Chuck Saylor (G1010)

Dear Mr. Olson:

The Environmental Protection Agency (EPA) has reviewed the Draft Environmental Impact Statement (DEIS) titled LIBERTY-COOLIDGE 230-KV TRANSMISSION LINE, ARIZONA. We have the enclosed comments regarding this DEIS.

We have classified this DEIS as Category LO-2 (lack of objections - insufficient information). The classification and date of EPA's comments will be published in the Federal Register in accordance with our public disclosure responsibilities under Section 309 of the Clean Air Act.

We appreciate the opportunity to review this DEIS. Please send four copies of the Final Environmental Impact Statement (FEIS) to this office at the same time it is officially filed with our Washington, D.C. office. If you have any questions, please contact Loretta Kahn Barsamian, Chief, EIS Review Section, at (415) 974-8188 or FTS 454-8188.

Sincerely yours,

Charles W. Murray, Jr.
Charles W. Murray, Jr.
Assistant Regional Administrator
for Policy, Technical, and
Resources Management

Enclosures

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To: (Name)			
From: (Name)			
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1-13F



Water Quality Comments

1. Although the upper Sonoran Desert region averages less than 10 inches of annual precipitation (p. 3-1), rain most likely falls during short periods of time, thus subjecting the study area to flash flooding. The FEIS should discuss construction and post-construction impacts to water quality and compliance with State-Federal water quality standards, with regard to the above mentioned climatic conditions.
2. The FEIS should discuss the wastewater treatment capabilities of the service area and other water quality issues, with respect to the anticipated population increase to be served by the transmission line; mitigation measures should also be provided.

Air Quality Comments

On p. 3-1, Section 3.2.1 states, "Air quality in the study area is generally good, with the exception of occasional high concentrations of particulate matter as a result of localized blowing dust." In lieu of that statement (and the one following), the FEIS should state that as a result of those "occasional high concentrations" most of the monitoring stations in the Phoenix Metropolitan Area were in violation of both the annual and the 24-hour particulate standards in 1981, and that the Phoenix Area has therefore been designated as a Nonattainment Area for particulates. The FEIS should also state that the Phoenix Area has been designated as a Nonattainment Area for carbon monoxide and ozone. We do not consider air quality in the study area to be "generally good."

404 (b) Permit Comments

Our understanding, based on discussions with the U.S. Fish and Wildlife Service, is that if the transmission lines cross over wetlands, these areas will be "spanned" so that towers will not be placed in the wetlands. The Final FEIS should address mitigation for wetlands protection.

Herbicide/Pesticide Comments

Any chemical herbicides used for vegetative control or manipulation must be registered with the EPA and the label directions and instructions must be followed. In addition, all applicable state regulations on pesticides should be followed. The FEIS should address the use of any herbicides or pesticides.

1 The proposed action is expected to have little or no significant impact on water quality standards. Construction activities will be scheduled during dry periods of the year. Areas which will be disturbed will be reseeded as appropriate.

2 Because population changes due to the Proposed Action are expected to be negligible, the additional demand for public sector expenditures is expected to be equally insignificant (DEIS 4-28). It is anticipated that local indigenous personnel will comprise the majority of the construction team required to build the proposed action. Thus, no significant changes in population, and, therefore, no significant increases in demands on local services, are anticipated.

3 The greater Phoenix area has been designated as a Nonattainment Area for particulates, carbon monoxide, and ozone. Annual mean concentrations for particulate matter exceeded established standards at all recording sites in the Phoenix area for the year ending 1982. Regarding long-term trends, it appears that a gradual decline during the past six years has occurred. Ozone concentrations were lower in 1982 than at any time since 1976. Only three exceedances of the standard were detected in 1982. In 1982, carbon monoxide levels declined significantly at all monitoring sites. Twenty exceedances of the 8-hour standard were recorded at the Roosevelt Street site in 1982.

3 On page 3-1 (DEIS), replace last two sentences of Section 3.2.1 with the following:

"That portion of the study area located in Maricopa County is within the Phoenix Nonattainment Area for air quality. Annual mean concentrations for particulate matter exceeded established standards in 1982. Standards for ozone and carbon monoxide were exceeded 3 and 20 times, respectively, in 1982. No monitoring sites were located within the Pinal County portion of the study area; however, readings at Maricopa were within acceptable levels."

4 Western will adhere to the mitigation strategy of spanning wetland areas. Permits, if required, will be secured prior to construction.

5 Chemical herbicides and pesticides are not generally used in Arizona. Should it be necessary, however, agents used by Western are those registered with the Environmental Protection Agency in compliance with the Federal Pesticide Control Act of 1972 and other Federal rules and regulations.



EIS 'CATEGORY' CODES

Environmental Impact of the Action

LO—Lack of Objections

EPA has no objection to the proposed action as described in the draft impact statement; or suggests only minor changes in the proposed action.

ER—Environmental Reservations

EPA has reservations concerning the environmental effects of certain aspects of the proposed action. EPA believes that further study of suggested alternatives or modifications is required and has asked the originating Federal agency to reassess these aspects.

EU—Environmentally Unsatisfactory

EPA believes that the proposed action is unsatisfactory because of its potentially harmful effect on the environment. Furthermore, the Agency believes that the potential safeguards which might be utilized may not adequately protect the environment from hazards arising from this action. The Agency recommends that alternatives to the action be analyzed further (including the possibility of no action at all).

Adequacy of the Impact Statement

Category 1—Adequate

The draft impact statement adequately sets forth the environmental impact of the proposed project or action as well as alternatives reasonably available to the project or action.

Category 2—Insufficient Information

EPA believes that the draft impact statement does not contain sufficient information to assess fully the environmental impact of the proposed project or action. However, from the information submitted, the Agency is able to make a preliminary determination of the impact on the environment. EPA has requested that the originator provide the information that was not included in the draft statement.

Category 3—Inadequate

EPA believes that the draft impact statement does not adequately assess the environmental impact of the proposed project or action, or that the statement inadequately analyzes reasonably available alternatives. The Agency has requested more information and analysis concerning the potential environmental hazards and has asked that substantial revision be made to the impact statement.

If a draft impact statement is assigned a Category 3, no rating will be made of the project or action, since a basis does not generally exist on which to make such a determination.



State of Arizona
Bureau of Geology and Mineral Technology

Geological Survey Branch
845 N. Park Ave., Tucson, Arizona 85719
(602) 626-2733

July 20, 1983

Mr. Chuck Saylor (G1010)
Western Area Power Administration
P. O. Box 200
Boulder City, NV 89005

Dear Mr. Saylor:

We appreciate the opportunity to comment on the Liberty-Coolidge 230-kv Transmission Line, Draft Environmental Impact Statement. Our focus is on the geologic framework, geologic processes, and earth resources portion of the statement. We note that our organization does not appear on the list of State Agencies to whom this report was sent.

Three sentences (page 3-3) are devoted to the subject of "Minerals" in "The Affected Environment" section. In the "Environmental Consequences" section no mineral commodity is recognized by name and impact is disposed of by the repetitious comment: "Some minerals may be unrecoverable for the life of the project due to accessibility." Considering that the study area appears to exceed 700 square miles in area, we wonder if the statement isn't deficient in the subject of "minerals".

An obvious explanation for this deficiency is that there are few references on the subject. Actually, there is only one that generally applies and it does not appear in the "References Cited" section. Much of the project area is on the Gila River Indian Reservation and the omitted reference is: "Mineral Deposits of the Gila River Indian Reservation, Arizona, our Bulletin #179 prepared by Dr. Eldred D. Wilson." I am enclosing a copy of this readily available publication.

Figure 3-1; Earth Resources, lists four sources of information and only one of these, Schumann (1974), is listed in "References Cited". There is no way to locate these items without complete citation of source.

Because this is an "impact" statement, perceived impacts should be clearly described. Such statements as: "Some minerals may be unrecoverable for the life of the project due to accessibility" needs clarification and embellishment. What affects access to minerals? What minerals? What determines whether or not this is a significant impact?

The concern for "minerals" should include the future demands of an expanding, voracious Phoenix metropolitan region. It may be desirable to state that a detailed inventory of minerals does not exist. Nevertheless, there should

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Given terminus points, in this case Liberty and Coolidge, a study area or geographic region of interest is first identified. The area selected has to be large enough to include all reasonable alternative routes and yet concise enough to lend itself to practical environmental planning techniques.

Within the study area, disciplines are studied from a broad perspective. Detailed analyses of such elements as geology and minerals occurs as corridors (routes) are identified. From best available sources of information, it appears that only minor disturbances to potential sand and gravel operations might occur along any of the routes.

References were inadvertently omitted from the final text. The following citations should be added:

Cooley, M. E. 1967. Arizona highway geologic map: Arizona Geological Society, Tucson.

Darton, N. H., C. Lausen, and E. D. Wilson. 1924. Geologic map of the state of Arizona: Arizona Bureau of Mines, Phoenix.

Moore, R. T. and R. J. Varga. 1976. Maps showing nonmetallic mineral deposits in the Phoenix area, Arizona: U. S. Geological Survey, Miscellaneous Investigations Series, Map 1-845-J.

Western will seek to acquire a 100-foot wide easement in perpetuity for construction of the proposed action. Mining and/or quarrying activities would be prohibited within the right-of-way, thus making minerals in the area inaccessible. Sand and gravel appear to be the minerals most likely to be affected; however, the impact is considered to be small due to the vast amounts of material available and the relatively small sections that would be inaccessible as a result of transmission line placement.

A detailed minerals inventory does not exist for the study area. It should be noted, however, that the primary concern of the EIS is the impact that the possible corridors might have on the environment. For minerals and geology, the impact or area of influence has been narrowly defined to include the 100-foot wide easement or right-of-way for each alternative.



July 20, 1983

Mr. Chuck Saylor
Western Area Power Administration

Page 2



be no reason for not including a three-dimensional geologic framework overview that includes: (1) the concept of shallowly buried, out-of-sight, potentially mineralized bedrock, and, (2) a range of possible industrial minerals indigenous to both bedrock and basin fill-alluvial geologic framework.

We recognize that the treatment of "minerals" is a difficult subject, especially for those not familiar with either the territory or the literature. If we might be of possible service to you in this or other matters dealing with "things geologic", please contact us.

Again, we appreciate having this opportunity to comment.

Sincerely,

H. Wesley Peirce

H. Wesley Peirce
Principal Geologist

HWP:eb

1-17F





UNITED STATES
DEPARTMENT OF THE INTERIOR

OFFICE OF THE SECRETARY
PACIFIC SOUTHWEST REGION
BOX 36098 • 450 GOLDEN GATE AVENUE
SAN FRANCISCO, CALIFORNIA 94102
(415) 556-8200

ER 83/857

August 22, 1983

Mr. Charles Saylor, Area Manager
Western Area Power Administration
Boulder City Area Office
Post Office Box 200
Boulder City, Nevada 89005

Dear Mr. Saylor:

The Department of the Interior has reviewed the draft environmental impact statement for the proposed Liberty-Coolidge 230 kV transmission line in Maricopa and Pinal Counties, Arizona.

For the most part, the document adequately and accurately describes the environmental impacts of the proposed action and alternatives. Following are our specific comments.

Specific Comments

The joint utilization of the right-of-way with Arizona Public Service between the Liberty Substation area and the Phoenix Substation (Associated Activity II, p. 1-5) should be analyzed as an alternative. Under alternative systems (p. 2-2) it states ". . . there are no existing or planned transmission facilities owned by other utilities that Western could use to meet the stated need."

Page 1-9, Institutional Issues, second issue: the meaning of the phrase "only substantively" is unclear. It appears to render the statement useless.

The Direct Current Overhead Systems (p. 2-2) states that DC lines generally have to be in excess of 300 miles to make them economically competitive. We understand that DC transmission lines can be economically justified for distances considerably shorter than 300 miles with the availability of new solid-state components.

The Standard Design Features, paragraph 2, page 2-28, states "A 50-foot right-of-way would require structure placement every 700 to 800 feet." This does not appear to agree with Table 2-2.

The cultural resources section (pp. 3-39 and 4-28) should include an evaluation of potential conflicts upon the traditional religious practices and beliefs of Native Americans in accordance with the American Indian Religious Freedom Act (Public Law 95-341). Ethnographic concerns are mentioned in Table 4-8. Figure 3-8 should show alternative corridors as are depicted on other resource maps in Chapter 3.

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Action: _____ (Initials)

Date: 8-25-83 Initials: [Signature] To: [Signature]

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1 As stated, the need of this project is to deliver increased and more reliable power to the Coolidge substation in order to meet growing demand in southern Arizona. Arizona Public Service (APS) intends to construct a transmission facility from their El Sol substation to the West Phoenix substation. Accordingly, discussions were held concerning possible joint utilization of right-of-way between Western and APS. Said right-of-way would, however, extend only from the Agua Fria River to 43rd Avenue and would not, therefore, meet the stated objective of delivering power to the Coolidge area.

2 The process employed by Western to select a proposed course of action and to develop the Environmental Impact Statement meets or exceeds the Arizona Corporation Commission's Transmission Line Siting and Certification requirements. Western, as a Federal agency, is not, however, required to file a request for a certificate of environmental compatibility with the State. Comments concerning the project and the EIS have been solicited from appropriate State agencies.

3 Direct current lines may be justified for systems considerably less than 300 miles on the basis of less line losses, synchronization problems, var control, and forcing power to flow against a parallel alternating current (AC) system. However, the only condition that applies to this project is line losses and the savings due to less losses is not sufficient to offset the increased cost of construction.

4 The 50-foot right-of-way and ruling span referred to in paragraph two, section 2.8, Standard Design Features, pertains to single circuit, single shaft steel or concrete structures. H-frame and lattice structures would require a 100-foot right-of-way because the conductors could not be stacked. The crossarms on these structures are approximately 35 feet and with conductor sway laterally, it would be possible for the conductor to be off a 50-foot right-of-way. The table is correct.

5 Ethnographic concerns were incorporated into the total evaluation process. The DEIS states on page 3-41, ". . . there needs to be a strong concern for cultural heritage . . . concept of heritage is associated with cemeteries, archaeological and historic sites, and with some of the shrines and religious places." As a part of this study, Western contracted with the Gila River Indian Community for the preparation of an Ethnographic Report. Reference: Kite, A. 1982. Ethnographic Report: Liberty to Coolidge (Arizona) Transmission Line Upgrade. Gila River Indian Community, Sacaton.

1-18F



Page 3-42, section 3.4.3., Wilcox quote: a sentence or line appears to be missing from the first part of this quote.

Table 4-1 is confusing. How can mitigative potential be very high under Class V which has essentially no concern or impact? If there is no concern or impact, there is nothing that needs mitigation.

Figure 3-1 indicates that the proposed route will cross an area of subsidence and fissures (Farrell Road south of Camp Rivers and northeast of Ak-Chin Indian Reservation), yet it is stated that such areas will be avoided (p. 4-3). If the line will indeed cross a hazardous area, precautionary measures should be discussed.

None of the alternative routes appears to conflict with the development of mineral resources.

Route 5 appears to have less impact on wildlife habitat and threatened and endangered plants than other alternative routes. To lessen the loss of wetland habitat, Route 5 could be modified to include Alternative A from Liberty Substation to Phoenix Substation. Where possible, public access should remain open to riparian areas along the river drainages, as these areas provide excellent hunting opportunities near Phoenix.

Page 4-22, Land Ownership, states "Members of the Gila River Indian Community (GRIC) have a great reverence for the land and in particular, hold the mountains in high esteem. Intrusive modifications to the land (throughout their Community) are generally incompatible with these values (Section 3.3.7.1)." Section 3.3.7.1 discusses income and not the values of the Gila River Indian Community.

The statement indicates that unavoidable adverse impacts may result from maintenance of the proposed transmission line corridor, mentioning application of herbicides as one such impact (p. 4-48). There should be a more thorough analysis of the potential magnitude of the impact of herbicides on water resources, indicating methods which may be used in applying the herbicides, precautions to be taken in their use, plans in the event of accidental spills, and any other mitigating measures. This discussion should include mention of typical depths to ground water.

In accordance with the CEQ Regulations (40 CFR 1502.16(e)), the environmental consequences section (Chapter 4) should include a discussion of the "energy requirements and conservation potential of various alternatives and mitigation measures."

We noticed that in Section 7.0, List of Agencies, Organizations, and Persons receiving a copy of the EIS, the Arizona Game and Fish Department was omitted. If they did not receive a copy of the EIS, we recommend one be provided to them.

- 6 [On page 3-42 of the DEIS, the first sentence of the Wilcox quote should be removed and replaced as follows: "No site in this area, except possibly the Casa Grande, merits national monument status more than Snaketown. The physical setting is evocative, its many large trash mounds and the embankments of the large ballcourt looming up in the otherwise flat desert landscape."
- 7 [The intent of the table is to illustrate relative importance of the potential impact and the capacity to mitigate potential conflict.
- 8 [As indicated on Figure 3-1 in the DEIS, fissures do occur within the study area. The location as referenced illustrates a generalized area where fissures have been known to occur. No known fissures are known to be located along the route of proposed action. If fissures are encountered, they can and will be mitigated primarily by spanning and/or minor shifts in alignment.
- 9 [We agree.
- 10 [As an alternative, Route 5 was seriously considered as were all routes. As described in the DEIS (page 4-45), Route 5 is, from a total environmental perspective, not as environmentally compatible as the proposed action.
- 11 [The reference to Section 3.3.7.1 should be deleted.
- 12 [Western does not generally use chemical herbicides and pesticides in Arizona. Should it be necessary, however, agents used by Western are those registered with the Environmental Protection Agency in compliance with the Federal Pesticide Control Act of 1972 and other Federal rules and regulations. Compliance is also assured with State and/or local laws. Chemicals used by Western have generally short residual effects and are point specific in nature.
- 13 [Upgrading the system as proposed will reduce line losses over that currently experienced. However, the conservation will not provide an alternative to the project as the amount of power that will flow on the line will only contribute to serving current load with a small amount of growth. Energy conservation is discussed in the DEIS in both Chapters 1 and 2.
- 14 [A copy of the DEIS was sent to the Arizona Game and Fish Department.



Pages 4-29 and 4-30 discuss the removal of the existing line through "Snake-town" and the least impacting methods seem to be recognized. We suggest that the road that now follows the existing alignment be allowed to revegetate and be blocked off in suitable places, especially from the Interstate 10 access.

15

We appreciate the opportunity to review and comment on this draft statement. If you have any questions regarding these comments, please contact me.

15

For cultural resource protection, one area is planned for closure; and another bypass around the closure area is already being used. The Bureau of Indian Affairs has an exiting transmission line parallel to the one being removed. We cannot close a common use access road used by others.

Sincerely,



Patricia Sanderson Port
Regional Environmental Officer

cc: Director, Office of Environmental Project Review, DOI
Regional Director, Fish and Wildlife Service
Director, Geological Survey
Regional Director, Bureau of Mines
Regional Director, Bureau of Reclamation
State Director, Bureau of Land Management, Arizona





Centers for Disease Control
Atlanta GA 30333
(404) 452-4257
September 22, 1983

Dear Mr. McPhail:

We have reviewed the Draft Environmental Impact Statement (EIS) for the Liberty-Coolidge 230kV Transmission Line, Arizona. We are responding on behalf of the U.S. Public Health Service and are offering the following comments for your consideration in preparing the final document.

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NO REPLY NECESSARY.

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The Draft EIS states that the Western Area Power Administration will continue to monitor studies performed to determine the effects of audible noise and electrostatic and electromagnetic fields in order to determine whether these effects are significant (4-47). The Final EIS should describe the proposed options if these studies associate electrical transmission with adverse human health effects.

The Final EIS should provide in more detail the potential hazards to air craft involved in aerial application of fertilizers, seeds, and sprays. Mitigation strategies need to be developed.

If any chemical control measures will be used for vegetation control, what herbicides will be considered, how will they be applied, and in what quantities? Will use of these herbicides be limited to the tower areas or will they be used throughout the entire length of the rights-of-way?

During the clearing phase, the DEIS listed "controlled burning of debris." Has consideration been given to using chipping methods instead and scattering the mulching material over graded and newly seeded areas to help replace organic soil material and provide protective cover until vegetation can stabilize the soils from erosion?

We appreciate the opportunity to review the Draft EIS. Please send us one copy of the final document when it becomes available. Should you have any questions about these comments, please call Ms. Gailya Walter of our staff at FTS 236-4095.

Sincerely yours,

Frank S. Lisella, Ph.D.
Chief, Environmental Affairs Group
Environmental Health Services Division
Center for Environmental Health

Specific studies to determine the effects of noise and electrostatic and electromagnetic fields are not planned for the Liberty-Coolidge project. As a general practice, however, Western supports and monitors research conducted in this area. Findings and recommendations will be applied across the entire Western system. At the present time, studies indicate that no detectable effects result from voltages of the size proposed for this line (230-kV).

To effectively fulfill their need, agricultural pilots involved in aerial application of fertilizers, seeds, and sprays fly at very low altitudes. Any obstruction causes a potential conflict. Transmission lines tend to be extremely bothersome due to poor visibility. Western will place reflective navigation aids on transmission lines where said lines cross regulated airspace. Western will also make available to the Arizona Agricultural Aviation Association detailed maps illustrating the location of the new line.

Chemical herbicides and pesticides are not generally used in Arizona by Western. If necessary, however, agents used are from those registered with the Environmental Protection Agency in compliance with the Federal Pesticide Control Act of 1972. Use of chemical agents is generally limited to structure area.

As appropriate, mulching practices can be employed. Said practice has not, however, been widely used in central Arizona due to the arid environment and the scarcity of dense vegetation. Extensive clearing is usually not required.



TABLE 1-3F
DRAFT ENVIRONMENTAL IMPACT STATEMENT
Public Hearing Comments and Responses

Speaker No.	Name	Issue/Concern	Response
<u>Coolidge, Arizona - August 15, 1983</u>			
1	Franklin Barnes	Would prefer single-pole structures and consolidation of lines. Increase ground clearance if possible.	Western will work with the landowners in an effort to minimize impacts. Present design standards call for a consolidation of the Coolidge-Saguaro and Liberty-Coolidge lines onto the same structure. All ground clearances meet or exceed minimum standards.
2	C. R. Skousen	Recommend a single-pole, double-circuit structure. Also recommend that new structures be placed in same location as existing structures to facilitate access.	Western will work with the landowners in an effort to minimize impacts.
<u>Sacaton, Arizona - August 16, 1983</u>			
3	Joe Manuel	Indian request for block of hydro-power.	Your comment has been noted.
4	Mike Pettit	Does the line cross allotted lands? (1)	(1) Yes. The new portion of the proposed action has been sited so as to avoid crossing allotted lands. However, the old (existing) right-of-way crosses allotted land in the northwest portion of the community. See DEIS Figure 3-6 for reference.
		Is the tribe benefiting from the proposed action? (2)	(2) See DEIS Section 1.0, Purpose and Need for Proposed Action.



Speaker No.	Name	Issue/Concern	Response
5	Bill Rhodes	Can the tribe tap the new line? (3)	(3) Yes. Preliminary discussions have already occurred between Western, San Carlos Irrigation Project, and the Bureau of Indian Affairs.
		What happens when the EIS is finalized? (4)	(4) Once the EIS is finalized, it is encumbant upon Western to obtain the necessary right-of-way, to construct the facility, and to deliver power.
		Has right-of-way been acquired? (5)	(5) No. Right-of-way acquisition has not begun and will not begin until the EIS is finalized.
		What kind of monetary fee would be paid to the Tribe? (1)	(1) Appraisals would be made of all land rights required and fair market value will be paid for the rights acquired. Acquisition will be in accordance with the Uniform Relocation Assistance and Land Acquisition Policies Act of 1972.
		Is there a fee to be paid for the right-of-way? (2)	(2) Yes. See response to (1) above.
		How long would the right-of-way be acquired? (3)	(3) Western will acquire the right-of-way in perpetuity.
6	Ted Lewis	What type of structures will be used? (4)	(4) Varying structure types could be used. See DEIS Figures 2-2, 2-3, 2-4, and 2-5. No decision as to type has yet been made, however, Western will work with landowners to minimize impacts.
		Has the Bureau of Indian Affairs commented on this project?	A letter of comment was received from the Bureau of Indian Affairs. However, the Bureau of Indian Affairs did serve on the project task force and provided appropriate comment as the siting analyses and EIS process were developed.



2.0 DESCRIPTION OF THE PROPOSED ACTION

The Proposed Route (Figure 1-F) exits the Liberty Substation on the north for 0.25 mile to utilize the existing west-east 161-kV Parker-Phoenix No. 2 line right-of-way located approximately 0.25 mile south of and parallel to Lower Buckeye Road. The proposed 230-kV Liberty-Coolidge line will be double circuited with the Parker-Phoenix No. 2 line for this portion of the upgrade. At a point west of Cotton Lane, the Proposed Route (continuing on the Parker-Phoenix No. 2 right-of-way) begins to take a southeasterly direction, crossing the Southern Pacific Railroad and State Highway 85, approximately 0.25 mile west of Reams Road. At the intersection of the alignments of Reams and Broadway Roads (no physical intersection exists) the Proposed Route parallels the north side of Broadway Road for nearly 1.5 miles to a point 0.25 mile west of Litchfield Road. Here the Proposed Route begins to follow a gradual northeasterly diagonal to a point approximately 0.25 mile east of the alignment of El Mirage Road and 0.5 mile north of Broadway Road (just north of the Estrella Substation). At this point the Proposed Route turns due east to parallel the midway alignment between Lower Buckeye and Broadway Roads. This alignment is followed for approximately 9.25 miles to its intersection with the Phoenix-Maricopa 115-kV and Phoenix-Coolidge 115-kV parallel rights-of-way (approximate combined ROW width of 200 feet). The Proposed Route will turn south at this intersection, located approximately 0.5 mile east of 51st Avenue, to double circuit with the Phoenix-Maricopa line (the proposed double circuit line would occupy the right-of-way vacated by the Phoenix-Coolidge and Phoenix-Maricopa line removal). These existing rights-of-way follow the approximate alignment of 47th Avenue, south for a distance of 2.75 miles. Here the Proposed Route takes a southwestern diagonal to a point just north of Baseline Road, approximately 0.25 mile east of 51st Avenue. At this point the Proposed Route turns south to parallel 51st Avenue for approximately 4.0 miles. Reaching a point at the extreme western edge of the South Mountains, near the intersection of the Gila River Indian Community (GRIC) boundary, the Proposed Route takes a gradual southeast diagonal alignment for approximately 1.5 miles.

The route of Proposed Action continues along the existing Phoenix-Coolidge 115-kV transmission right-of-way as it follows a northwest to southeast diagonal across the GRIC for approximately 7.5 miles. Here the Proposed Route turns due east to follow the north field edge of an agricultural area for 2.75 miles. At this point, the Proposed Route turns south to parallel the existing APS Ocotillo-Santa Rosa transmission corridor for 7.0 miles. At this point, the route turns southwest for approximately 1.0 mile to a point located at the center of the Southwest Quarter of Section 25, Township 3 South, Range 3 East. The proposed route then turns due south for approximately 5.25 miles to the intersection of the existing Phoenix-Maricopa line. At this point, the route utilizes the right-of-way of the Phoenix-Maricopa line to the intersection of Farrell Road. Turning east, the Proposed Route follows the Farrell Road alignment for approximately 12.0 miles to old Highway 93. At this point, the Proposed Route turns southeast to parallel the highway alignment for 3.5 miles to the southern boundary of the GRIC. The Proposed Route then turns east to parallel the boundary for 4.0 miles. At this point, the Proposed Route turns generally southeast to take a circuitous route around some higher elevated areas of the Sacaton Mountains. The Proposed Route passes through a saddle of the Sacaton Mountains and then turns east to parallel the section line located 1.0 mile north of Val Vista Boulevard. The Proposed Route follows this alignment for 5.0 miles to its



intersection with the Western Coolidge-Saguaro transmission line. The Proposed Route will be double-circuited with this existing corridor for 4.5 miles to the Coolidge Substation (north 1.5 miles to Highway 87; east 1.5 miles to Kenworthy Road; north 0.5 mile then east 1.0 mile to the Substation).

Service will be provided to the Lone Butte Substation via a 115-kV tap from the rerouted existing Phoenix-Maricopa line. The tap line will utilize the existing Phoenix-Maricopa right-of-way from the intersection of the APS Santa Rosa-Ocotillo line to the Lone Butte Substation, a distance of approximately one mile.

The total length of the Proposed Route is 85.0 miles. It will require the acquisition of approximately 31.1 miles of new right-of-way corridor. This route may allow removal of a 20.0-mile portion of the Western Phoenix-Maricopa transmission corridor which could be double-circuited with the new Liberty-Coolidge system to Farrell Road. In addition, a 35.0-mile-long portion of the existing Phoenix-Coolidge 115-kV corridor through the GRIC could be removed with the construction of the new Liberty-Coolidge 230-kV line.



3.0 ERRATA AND CHANGES

Cover page, line five:

change "DOE-EIS-0010-D" to "DOE-EIS-0100-D".

Page S-1, line fourteen:

change "424-434" to "423-433".

Page S-3, paragraph 3, line four:

change "District" to "Project".

Page 1-5, numbered paragraph 3,

last sentence should be changed to: "Tucson Phase A is scheduled for completion in 1987."

Page 1-5, numbered paragraph 4,

last sentence should be changed to: "The Department of Energy Record of Decision will follow. Tucson Phase B is scheduled for completion in 1989."

Page 2-2, paragraph 2, line four:

change "District" to "Project".

Figure 2-3

Note:

The minimum clearance for 230-kV systems is 108 inches and 77 inches for 115-kV systems. Concrete backfill should be 6-inch minimum on all sides of pole.

Figure 2-7 has been revised.

Page 3-1, Section 3.2.1:

replace last two sentences with the following: "That portion of the study area located in Maricopa County is within the Phoenix Nonattainment Area for air quality. Annual mean concentrations for particulate matter exceeded established standards in 1982. Standards for ozone and carbon monoxide were exceeded 3 and 20 times, respectively, in 1982. No monitoring sites were located within the Pinal County portion of the study area; however, readings at Maricopa were within acceptable levels."

Page 3-35, paragraph 2, line eight:

change "modifica-tions" to "modifications".



Page 3-42, indented quote,
replace first sentence beginning with "No site in this area, . . ." with the following:

"No site in this area, except possibly the Casa Grande, merits national monument status more than Snaketown. The physical setting is evocative, its many large trash mounds and the embankments of the large ballcourt looming up in the otherwise flat desert landscape."

Page 4-14, first heading:
delete the numeral 5.

Page 4-22, paragraph 6, line four:
the reference to Section 3.3.7.1 should be deleted.

Page 4-39, paragraph 1, line one:
change "evironmentally" to "environmentally".

Page 4-50, paragraph 4, line five:
change "utilizaiton" to "utilization".

Page 6-2, paragraph 2, line three:
change "Pinnalce" to "Pinnacle".

Page 7-1, under State Agencies, line eight:
change "Arizaon" to "Arizona".

Page 7-2, under Local Agencies and Others:
add "City of Chandler".

Page 8-1, Human Resources, add the following citations:

Cooley, M. E. 1967, Arizona highway geologic map: Arizona Geological Society, Tucson.

Darton, N. H., C. Lausen, and E. D. Wilson. 1924. Geologic map of the state of Arizona: Arizona Bureau of Mines, Phoenix.

Moore, R. T. and R. J. Varga. 1976. Maps showing nonmetallic mineral deposits in the Phoenix area, Arizona: U. S. Geological Survey, Miscellaneous Investigations Series, Map 1-845-J.

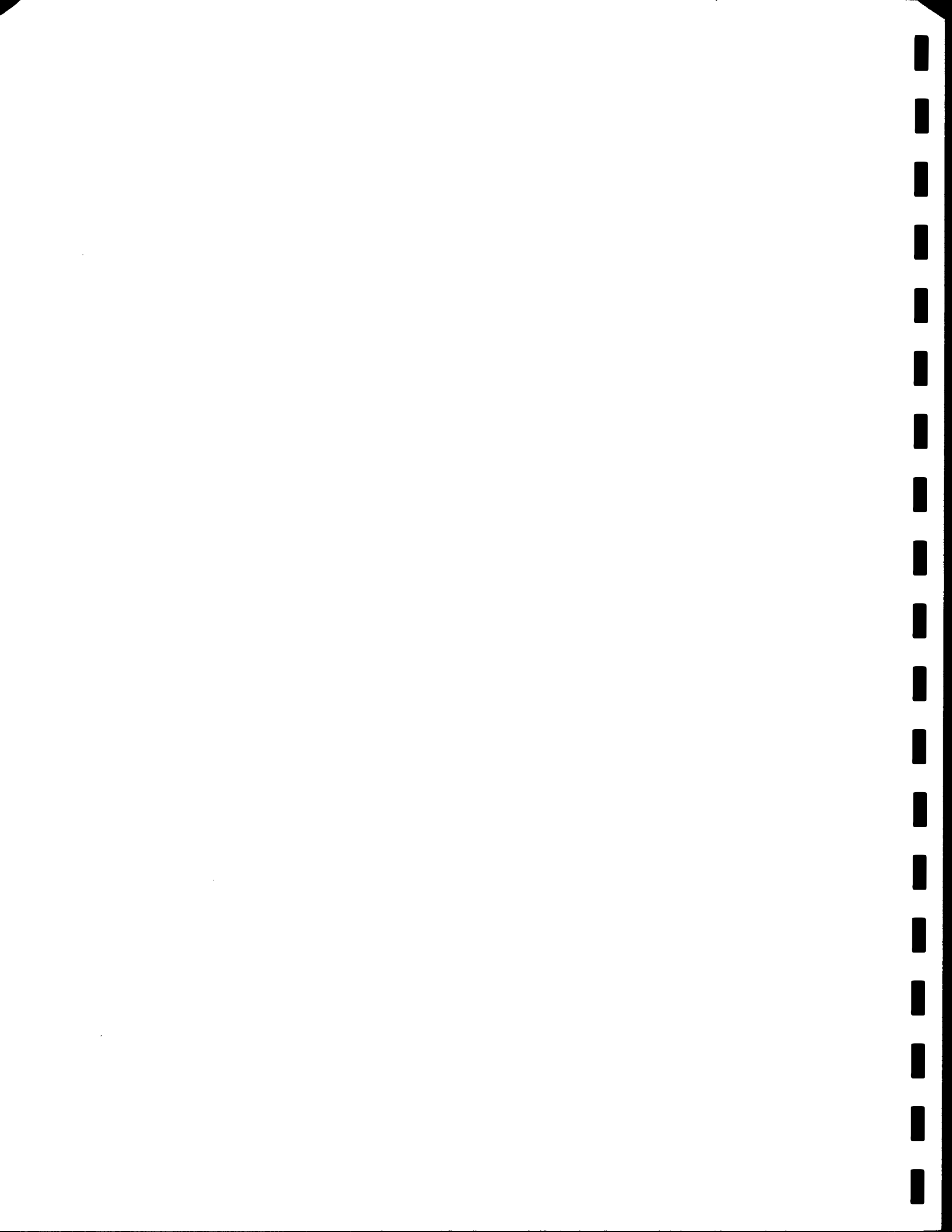
Page 8-3, seventh citation, line two:
change "Janaury" to "January".

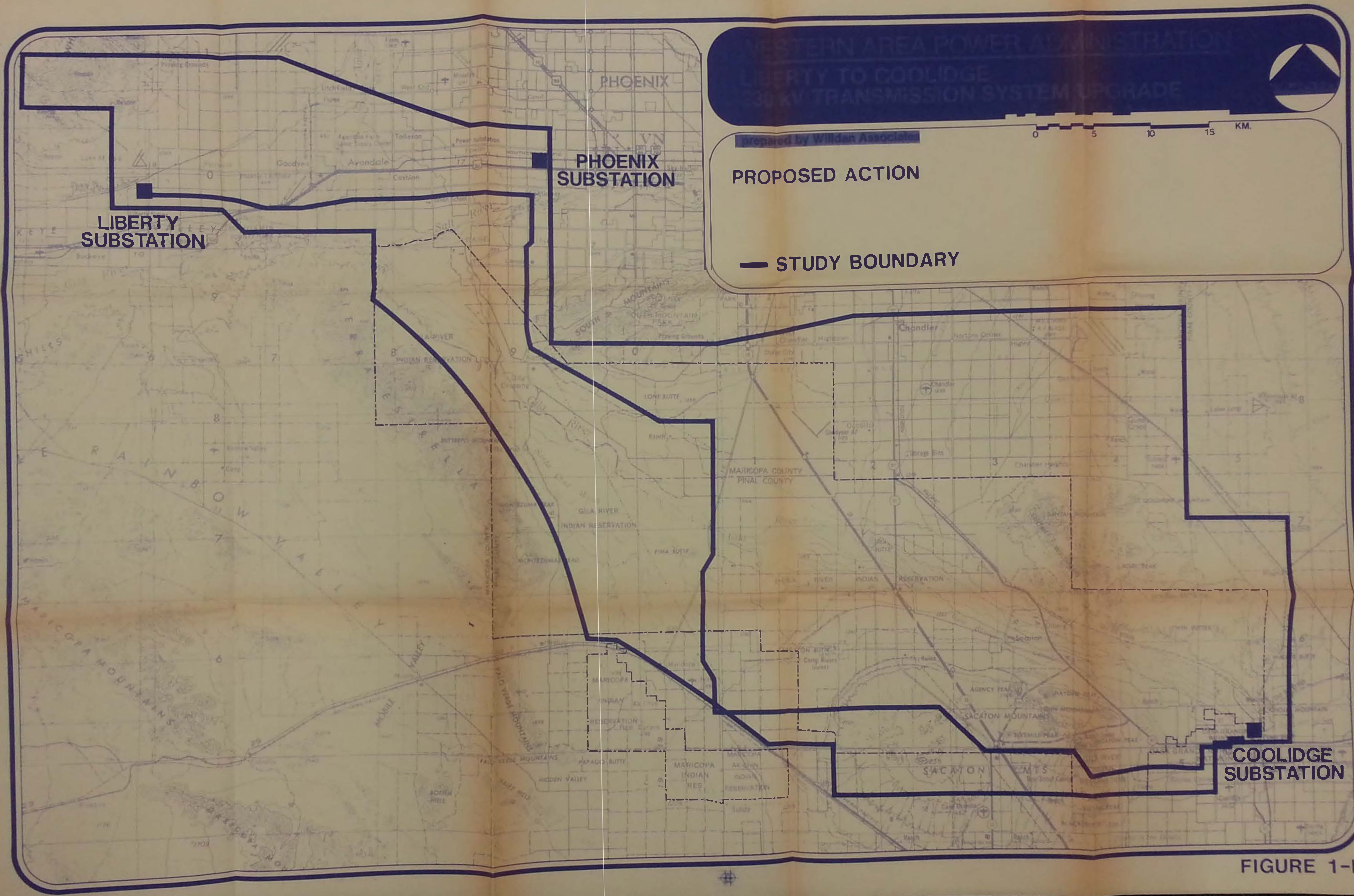


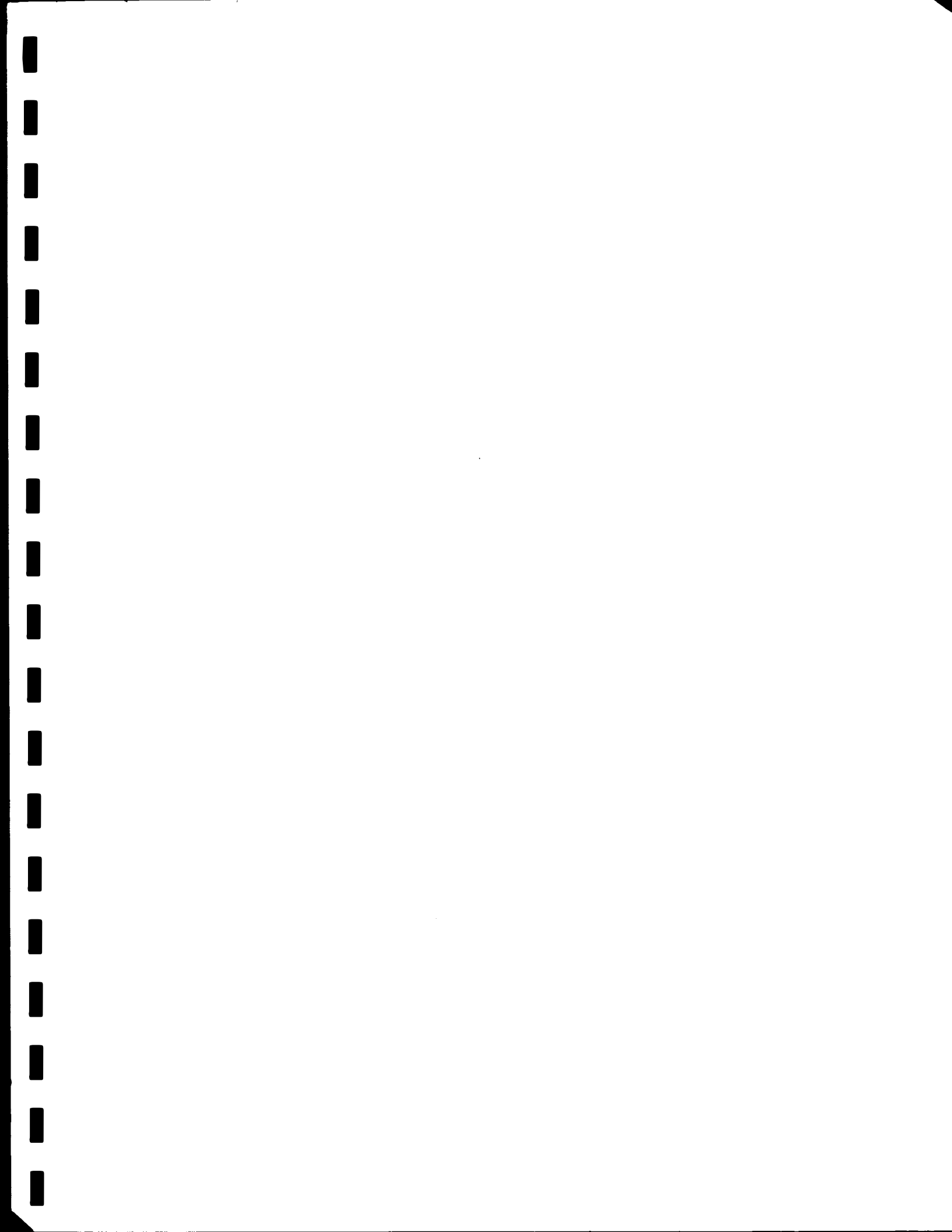
Page 8-3, eleventh citation, line five:
change "Map" to Mass".

Page 8-5, eleventh citation, line three:
change "Phoenxi" to "Phoenix".

Page 8-21, paragraph 1, line four:
change "36 units" to "40 units".







1944

1944

