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Volume II A.1 Pages 2,509-3,007

FINAL
ENVIRONMENTAL IMPACT STATEMENT

SUPERCONDUCTING SUPER COLLIDER

Volume II
Comment Resolution Document

A. Comments
1. Letters

December 1988

U.S. Department of Energy

UNITED STATES
DEPARTMENT OF ENERGY
WASHINGTON, D.C. 20545
ER-65/GTN

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SUPERCONDUCTING SUPER COLLIDER

Volume II
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A. Comments
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December 1988

U.S. Department of Energy
Washington D.C. 20585

225-775 88 - 1 (BOOK 7)

Technical Comment AES 012

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Aesthetics

LOCATION IN DEIS: Vol. IV Appendix 16 PP 29

COMMENT IN REFERENCE TO: Mitigation of E9 facility

TECHNICAL COMMENT:

11 Please refer to Technical Comment AES 011 on mitigation of E8 facility, and attached exhibits, and the Mitigation Plan Strategies in Chapter 3 of this document.

Technical Comment AGR 001

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Agricultural Production

LOCATION IN DEIS: Vol. I Chapter 5 PP 5.1.7-5 Paragraph 5.1.7.2

COMMENT IN REFERENCE TO: Regulatory and review authority

TECHNICAL COMMENT:

12 Relative to the permanently converted farmland identified within 5.1.7.2 (163 acres). The project's agricultural impacts not only fall under the auspices of the Federal Farmland Protection Policy Act (FPPA), but Illinois' Farmland Preservation Act (FPA) as well. A provision of the FPPA Final Rule (7 CFR Part 658.1) specifies that federal programs shall be administered in a manner which is compatible with state and units of local government programs that protect agricultural land. Therefore, the DEIS has been reviewed for compliance with the FPA. The FPPA and the FPA differ with respect to the definition of prime and important farmland that will be impacted by project initiatives. Based upon the parameters set forth by the FPA and the soils information as established by nationally recognized documents (Kane, DuPage, Kendall Counties' Modern Soil Surveys), the State has ascertained that 363 acres of prime and important farmland would be converted to SSC and Associated uses. See Technical Comments PRI 001.

Technical Comment AGR 002

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Agricultural Production

LOCATION IN DEIS: Vol. IV Appendix 5.3 PP 86 Paragraph 2nd

COMMENT IN REFERENCE TO: Agricultural practices, fertilization

TECHNICAL COMMENT:

13 To correct a possible misconception, prime farmlands in this region have not been depleted through row-crop cropping practices. Typically, large inputs of inorganic fertilizers are applied to enhance soil productivity beyond the capabilities of the native soils. Agricultural producers implement a progressive fertilizer maintenance program on their farms; therefore, these soils are not "depleted."

Technical Comment AGR 003

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Agricultural Production

LOCATION IN DEIS: Vol. IV Appendix 5.3 PP 86 Table 5.3.9-3

COMMENT IN REFERENCE TO: Agricultural Production at Proposed Illinois SSC Site

TECHNICAL COMMENT:

14 It would be appropriate to correct the title of the above referenced table. "Bushels per thousand acres" should be changed to, "thousands of acres." For example, DuPage County possessed 16,900 and 19,500 acres in corn production in 1981 and 1985, respectively.
15 Furthermore, hayfields are not grazed. As indicated, hayfields are used for hay or silage production.

Technical Comment AGR 004

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Agricultural Production

LOCATION IN DEIS: Vol. IV Appendix 5.3 PP 89 Table 5.3.9-5

COMMENT IN REFERENCE TO: Livestock Production Trends

TECHNICAL COMMENT:

16 The title of the above referenced table should be amended to state, "Number of Head by County." It is incorrect to use "Heads" in this instance.

17 In addition, "Hogs" and "Pigs" are synonymous; therefore, we feel the term "Hogs" is most appropriate here.

Technical Comment AGR 0●5

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Agricultural Production

LOCATION IN DEIS: Vol. IV Appendix 5.3 PP 122 Paragraph 1

COMMENT IN REFERENCE TO: Drummer Soils and drainage

TECHNICAL COMMENT:

18 Further characterization of the "Drummer" soil would be appropriate in this case. While this soil may be inherently wet, the farmers in this region have installed subsurface tile drainage systems to prevent the wetness problem from interfering with row-crop production. Indication that these soils are now adequately drained with tile drainage systems would accurately reflect the status of fields that possess Drummer soils.

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Agricultural Production

LOCATION IN DEIS: Vol. IV Appendix 7 PP 33 Paragraph B

COMMENT IN REFERENCE TO: Need to Protect Drain Tiles

TECHNICAL COMMENT:

19 A discussion of the subsurface drainage (underground field drainage tile) networks which could be disturbed during construction of the surface facilities may be relevant. Adequate subsurface drainage is crucial for maintaining the productivity of the soils and the farmability of the land. Unquestionably, a disruption of the existing tile drainage network could extensively impact the integrity of many farming operations within the project area.

The State's Citizens Advisory group has recommended that this needs to be part of the project mitigation plan. Accordingly, the State suggests that provisions for maintaining the continued drainage of the areas be included in the mitigation plan for instances when drainage tiles are encountered during the construction period. See the Mitigation Plan Strategies, Chapter 3 of this document.

Technical Comment AQL 001

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Air Quality

LOCATION IN DEIS: Vol. I Chapter 4 PP 4-26.27

COMMENT IN REFERENCE TO. Ambient air quality--nonattainment status

TECHNICAL COMMENT:

20 The proposed SSC site area in Illinois is shown as in nonattainment status with respect to carbon monoxide (CO) and ozone (O_3). However. Table 4-6 shows and Appendix 8. p32. correctly states that the area is currently in compliance for TSP. CO, and O_3, based on recent ambient concentration measurements. Official USEPA attainment designations do not yet reflect these recently improved conditions. The Volume I discussion should reflect the recent data indicating compliance with these three criteria.

Technical Comment AQL 002

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Air Quality

LOCATION IN DEIS: Vol. IV Appendix 5.3 PP 50 Paragraph 5 3.42 (c)

COMMENT IN REFERENCE TO: Compliance Status

TECHNICAL COMMENT:

21 The stated non-atteinment status for TSP appear to be inconsistent with information in Vol. I. Chapter 4. which states that the Illinois site is in non-compliance status for CO and O_3.

The data presented in Vol. I, Chapter 4, Table 4-6 indicate that air quality in the area proposed for the SSC is in compliance with NAAQS for TSP, CO and O_3. See also statements in Vol. IV, Appendix 8, pg. 32 which support compliance status for Illinois air quality.

22 See Technical Comment AQL 001.

Technical Comment AQL 003

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Air Quality

LOCATION IN DEIS: Vol. IV Appendix 8 PP 1 Paragraph 2

COMMENT IN REFERENCE TO: National Ambient Air Quality Standards (NAAQS)

TECHNICAL COMMENT:

23 In line 5 the words "Hydrocarbons (HC)" should be removed because there are no national ambient air quality standards (NAAQS) for Hydrocarbons (See 40 CFR Chap I-C. Part 50).

In line 12 the "HC" should not be listed because there are no regulations of (PSD) for Hydrocarbons.

Technical Comment AQL 004

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Air Quality

LOCATION IN DEIS: Vol. IV Appendix 8 PP 28 Table 8-20

COMMENT IN REFERENCE TO: Assuming paved roads should change calculations of emissions

TECHNICAL COMMENT:

24 Under the Construction/Design section, no "Spoil haul unpaved roads" were proposed for Illinois. All haul access, spoil haul, entrances or driveways were proposed to be paved Therefore, the value should be 0%, not 10%, for unpaved roads and 100% for paved roads. Computations should be revised to reflect the change in values. (See also: Volume IV, Appendix 1, Appendix 5.3, Page 33, 1st paragraph)

25 See also Technical Comments AQL 005, TRN 015, TRN 016 and TRN 017.

Technical Comment AQL 005

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Air Quality

LOCATION IN DEIS: Vol. IV Appendix 8 PP 29 Table 8

COMMENT IN REFERENCE TO: Fugitive dust silt value of 14%

TECHNICAL COMMENT:

The value of 14% used in the DEIS is the generally accepted generic silt value for road dust fugitive emissions calculations, because it is the value recommended for such use in EPA Publication AP-42.

26 However, this value was derived from relatively few measurements in a relatively limited geographical area. (The value of 14% appears to be a mean of the three mean values listed for three types of "rural roads" in Table 11.2.1-1 of the EPA 1986 reference given at the end of Appendix 8. If this is the case this value is based on 14 samples from only 5 locations.) The Illinois State Water Survey has a much more comprehensive national database of road dust silt values, which indicates that the typical road dust silt value is much smaller than the currently recommended value of 14%. Barnard, Stensland and Gatz (1987) list all silt values measured by the "Water Survey" prior to March, 1987. Additional data have been collected since then. The attached Figure shows the distribution of measured values currently contained in the national database of unpaved road silt values (natural log transformed). The geometric mean value is an appropriate measure of the central tendency, since the log-transformed values approximate a normal distribution. The geometric mean for the 213 values included in the attached histogram is 2.67%. The arithmetic mean is 3.80%, and the median is 2.89%.

Since the same value of the road dust silt content (14%) was used in the fugitive dust calculations for all seven sites, a change in this value will have little effect on the relative tendencies of the sites to produce fugitive TSP emissions. The effect of such a change would be to decrease the estimated emissions from all sites, so that all sites would be less likely to exceed the NAAQS standard.

Technical Comment AQL 005

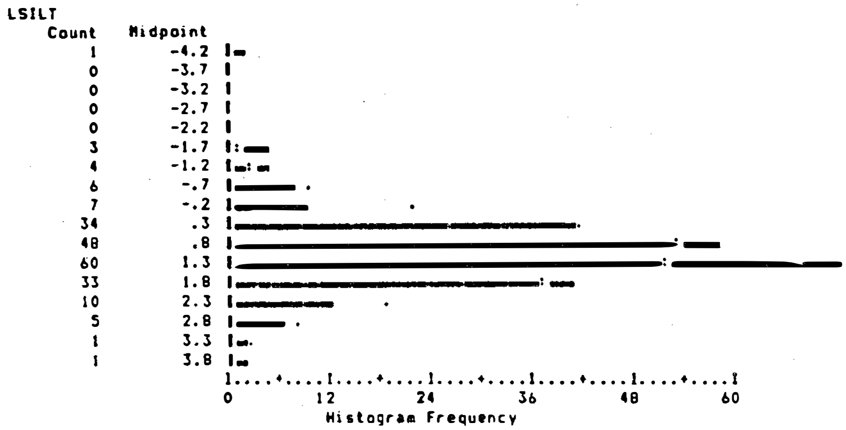
It should be noted that Illinois proposed that all of the roads to be constructed or upgraded for the SSC will be paved. Therefore, no additional fugitive road dust emissions are expected. See Technical Comments DOT 016, TRN 015, TRN 016 and TRN 017.

REFERENCE:

Barnard, W. R., G. J. Stensland, and D. F. Gatz. 1987. Evaluation of potential improvements in the estimation of unpaved road fugitive emission inventories. Paper presented at Annual Meeting of APCA, New York, New York.

Technical Comment AQL 005

National Silt Samples



Page 123 SPSS/PC+ 3/10/88

LSILT

Mean	.983	Std Err	.063	Median	1.062
Mode	-3.986	Std Dev	.917	Variance	.841
Kurtosis	4.534	S E Kurt	.332	Skewness	-1.153
S E Skew	.167	Range	7.600	Minimum	-3.986
Maximum	3.614	Sum	209.447		

Valid Cases 213 Missing Cases 0

Page 124 SPSS/PC+ 3/10/88

This procedure was completed at 11:00:28

LETTER 1279 (CONTINUED)

Technical Comment AQL 005

87-58.1

EVALUATION OF POTENTIAL IMPROVEMENTS IN THE ESTIMATION OF UNPAVED ROAD FUGITIVE EMISSION INVENTORIES

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ILLINOIS STATE WATER SURVEY
CHAMPAIGN

APCA The Association Dedicated to Air Pollution Control and Hazardous Waste Management
FOUNDED IN 1907

For Presentation at the 80th Annual Meeting of APCA New York, New York

INTRODUCTION

Inventories of fugitive dust emissions from unpaved roads are dependent on knowledge of the source extent, emission factors and their associated correction parameters and, in the case of PM-10 inventories for State Implementation Plan (SIP) development, the fraction of TSP mass ≤ 10 μm. County level emission inventories of particulate emissions from unpaved roads have been developed for the National Emissions Data System (NEDS).

The current method of estimating fugitive emissions from unpaved roads involves using the latest emission factor equation coupled with an estimate of the source extent. The source extent in the case of unpaved roads is vehicle-miles of travel (VMT). The emission factor equation currently recommended by the U S EPA (Publication AP-42[1]) is as follows:

$$E = k\,(5.9)\,(s/12)\,(S/30)\,(W/3)^{0.7}\,(w/4)^{0.5}\,(d/365) \qquad (1)$$

where:

- k = proportionality constant for particle size
- s = silt content (%)
- S = vehicle speed (mph)
- W = vehicle weight (tons)
- w = number of wheels
- d = number of dry (< 0.01 in. precip.) days per year

This paper examines the potential impacts on state emission inventories of unpaved road fugitive emissions that result from improvements in the estimation of three parameters: 1) the vehicle-miles traveled on a state-by-state basis using data on the number of miles of unpaved roads in each state in various average daily traffic volume (ADTV) classes rather than the current NEDS estimation procedure, 2) actual measurements of the silt content of unpaved roads versus the estimation procedure developed for NEDS and 3) the ≤ 10 μm fraction of TSP from unpaved road emissions measured using dichotomous samplers (a sampler without particle bounce problems) co-located with Hi-vol samplers.

ESTIMATION OF THE SOURCE EXTENT

Emission inventories of unpaved road particulate emissions originally developed for NEDS utilized either estimates of vehicle-miles of travel on unpaved roads or the total mileage of unpaved roads.[2] Where the total mileage of unpaved roads was used, the average daily traffic volume had to be estimated The National Air Data Branch (NADB) compiled vehicle-miles traveled on unpaved roads by county based on the unpaved road mileage and the average daily traffic volume for each county. Average daily traffic volume as a function of rural population density was derived based on regression analysis of statewide traffic counts for unpaved roads in Kansas. Based on this analysis, the following equation was developed for determining ADTV for all other states[3-4]

$$ADTV = 15 + 2.8(p/a) \qquad (2)$$

where:

- p = county rural population
- a = county area (sq miles)

County unpaved road mileage derived from state mileage data was apportioned to counties on the basis of rural population density (p/a) in five states (Kansas, Nebraska, Arkansas, North Dakota and South Dakota). The results of analyses of these data showed that for p/a > 8, mileage density (miles/a) was independent of p/a. For counties with p/a < 8, the dependence of mileage density on population density was too small to justify development of complex correlations to be applied to the relatively few sparsely populated counties. As a result, in all other states the total state unpaved road mileage was apportioned to the counties on the basis of county area alone.[3-4]

Following an in-house analysis of VMT and unpaved road mileage, the NADB developed an equation to replace equation (2).[5] This new equation is currently being used for estimating unpaved road travel in NEDS. The current equation is:

$$ADTV = 9.8 + 0.2P \qquad (3)$$

where:

- P = total county population(10^3 people)

The NEDS source extent inventory for unpaved road vehicle-miles on a county-by-county basis was calculated by multiplying ADTV obtained from equation (3) (in association with county population data) by county unpaved road mileage apportioned from the total state unpaved road mileage on the basis of the county area.

The vehicle-miles of travel estimated using the NEDS method were then compared to estimates we developed using data from the U.S. Department of Transportation.[6-7] These data included the number of miles of unpaved roads in ADTV classes for local functional class roads and the number of miles of non-local functional class unpaved roads, for each state. Local functional class unpaved road mileage typically accounts for more than 80% of a state's unpaved road mileage.

The data available on the number of miles of local functional class unpaved roads in ADTV classes enabled us to directly calculate vehicle-miles of travel with only minor assumptions. We had to develop a method of estimating ADTV on non-local functional class unpaved roads since we only had data for the total mileage of these roads. As a consequence, the estimates of vehicle-miles of travel on non-local unpaved roads are believed to be slightly less precise than the estimates of vehicle-miles of travel for local functional class roads.

Determination of vehicle-miles of travel

Estimates of vehicle-miles of travel using both the NEDS method and our method utilized the same data on the total mileage of unpaved roads (both local and non-local functional classes) for each state. The data used in this study were those available for 1983.

State-by-state estimates of unpaved road vehicle-miles using the NEDS method were derived by determining the county-level vehicle-mile values and summing them for the entire state Only results for the 48 contiguous states were calculated. County-level ADTV values were calculated using equation (3) and the individual county population data taken from the 1980 census. The number of miles of unpaved roads in each county was calculated by determining the fraction of the total state area contained in each county and multiplying that fraction times the total state unpaved road mileage. Once the ADTV and unpaved road mileage were known, the vehicle-miles of travel for each county was determined.

Our procedure for estimating the vehicle-miles of travel involved several steps. First, the data on the mileage of local functional class unpaved roads in each ADTV class were evaluated where possible. This data set is subdivided by locale (rural, suburban or urban) and by road surface type(gravel/soil surfaced or unimproved). An example of the data (for Alabama) is given below

Rural Gravel/Soil				Rural Unimproved			
≤ 50	50-199	200-499	≥500	≤ 50	50-199	200-499	≥500
16080	9308	510	0	0	0	0	0

These data show that for rural roads, the ADTV classes are <50, 50-199, 200-499, and >500 vehicles per day. For suburban and urban roads, the ADTV classes are <200, 200-499, 500-2000, and >2000 vehicles per day. Since each ADTV class represents a range, we decided to make both high and low estimates of vehicle-miles of travel by using the upper and lower limits of each ADTV class. This required that we make some assumptions concerning the lower limit of the <50 and <200 ADTV classes and the upper limit of the >500 and >2000 ADTV classes. We assumed that the lower limits were 5 and 50 vehicles per day for the <50 and <200 ADTV classes, respectively. The upper limits for the >500 and >2000 ADTV classes were assumed to be 1000 and 4000, respectively.

This initial evaluation provided us with actual vehicle-miles of travel on local functional class unpaved roads for 38 of the 48 contiguous states. The data sets for the other 10 states were either incomplete or missing. Included among the states with incomplete data were California, Indiana, New York, Ohio, Oklahoma, Vermont, Florida and Nebraska. Arizona, Maine and Rhode Island had no data. As a consequence we developed estimation procedures to develop vehicle-miles of travel estimates for those states with either missing or incomplete data

California, Indiana, New York, Ohio, Oklahoma and Vermont provided data on the total number of miles of unpaved roads by surface type and locale, but provided no breakdown by ADTV classes. Therefore, we determined the number of miles of unpaved roads in each ADTV class for those states by assuming that the number of miles of unpaved roads in each ADTV class was equal to the average fraction of miles in each ADTV class from surrounding states multiplied by the total unpaved road mileage in each surface type and locale classification The surrounding states used to determine these fractions were as follows

California	Nevada and Oregon
Indiana	Illinois, Kentucky, Michigan
New York	Pennsylvania and Massachusetts
Ohio	Pennsylvania, West Virginia and Michigan
Oklahoma	Arkansas, Texas and Kansas
Vermont	New Hampshire and Massachusetts

For example, the distribution of rural gravel/soil surfaced unpaved road mileage in New York was determined as follows:

Total mileage of rural gravel/soil unpaved roads in New York = 17367

Average percentage of rural gravel/soil unpaved road mileage in Pennsylvania and Massachusetts in various ADTV classes

≤ 50	50-199	200-499	≥500
42.1	33.2	24.0	0.7

Rural gravel/soil unpaved road mileage in various ADTV classes in New York

≤ 50	50-199	200-499	≥500
7312	5766	4168	121

Florida provided data grouped by ADTV class and locale, but gave only the total number of local functional class roads (paved as well as unpaved). Estimates of unpaved road mileage in each ADTV class by surface type for Florida were made by using the average fraction of total local functional class mileage that was unpaved in Georgia and Alabama.

Three states (Arizona, Maine and Rhode Island) had no data. For these states, estimates of local functional class unpaved road mileage classified by surface type and locale were made similarly to the procedure used for Florida. First, the total mileage of local functional class roads was obtained.[5] Then the average fraction of total local functional class mileage in each surface type, locale and ADTV classification was determined for the surrounding states. These fractions were then multiplied by the total local functional class mileage to determine the number of miles of unpaved roads in each ADTV class as a function of locale and surface type.

Once the local functional class unpaved road vehicle-miles were determined, we calculated the non-local functional class unpaved road vehicle-miles. Data were available for the total mileage of non-local functional class unpaved roads, but no information was available on the ADTV.[6] As a consequence, we assumed that the ADTV for a particular state's non-local functional class unpaved roads was equal to the mean ADTV value of suburban and urban local functional class unpaved roads for that state. We used the average value of suburban and urban local functional class unpaved road ADTV because the majority of non-local unpaved road mileage was in either the major or minor collector functional classes and we felt that the ADTV on these roads would be more typical of suburban and urban levels than of rural levels.

The state-by-state values of unpaved road vehicle-miles using the NEDS estimation technique and our procedure are presented in Table 1. The values clearly show that the number of vehicle-miles of travel on unpaved roads using the NEDS estimation method yields values that are usually lower than our low estimate (32 of 48 states). 15 states have NEDS values that are between our low and high estimates. Only one state (California) has a NEDS value that is greater than our high estimate. These data are summarized in Figure 1.

SILT CONTENT OF UNPAVED ROADS

Valid estimation of fugitive emissions from unpaved roads depends not only on an accurate evaluation of the source extent, but also on the accuracy of the data used in determining the emission factor. Equation (1) has several correction factors associated with it that must be specified in order to correctly determine the emission factor. One of these is the silt content. The silt content is the fraction of the unpaved road surface material that passes through a sieve with 75 μm diameter openings.

The silt content of unpaved roads has been estimated[3-6] for NEDS in order to calculate unpaved road fugitive emissions. The following equation was used to estimate the silt content:

$$s_T = \frac{3\,(DE)\,(15) + (NS)s}{3\,(DE) + (NS)} \qquad (4)$$

where s_T is the weighted surface silt content of the unpaved road; DE is the miles of roads with surface types D (soil-surfaced) and E (slag, gravel or stone-surfaced); NS is the miles of non-surfaced roads (primitive, unimproved and graded and drained) and s is the average soil silt content for the state. The factor 3 is an estimate of the ratio of vehicle-miles of travel on D and E surfaced roads compared to that on non-surfaced roads.

This equation was utilized in NEDS to provide state-wide estimates of unpaved road silt content. Therefore, each county level estimate of unpaved road fugitive emissions is based on a state silt value. Additionally, from equation (4) it is clear that type D and E roads are assumed to have a silt content of 15 percent. As a consequence, even if the average soil silt content was only 1 percent, the silt content of unpaved roads in that state would be at least 15 percent. Table II lists the silt contents determined by equation (4) and used in NEDS to evaluate the unpaved road fugitive emissions.

We have collected over 180 samples of unpaved road surface materials from 27 states. So far, over 80 samples have been sieved and measured for their silt content. The silt content of these samples is shown in Table III. These data clearly show that the silt content of unpaved roads is usually below 15 percent (typically by a factor of 2-3) and generally much lower than the values used by NEDS.

Other investigators have also found measured values of the silt content to be lower than 15 percent. Mean values ranging from 4.3 to 9 percent have been reported.[8-11]

≤ 10 μm FRACTION OF TOTAL SUSPENDED PARTICULATE MATTER

One important aspect of equation (1) is the ability to determine an emission factor for particles less than a certain size. This is especially

important in developing PM-10 SIP inventories. The correction factor k in equation (1) has the following values for predicting emitted mass of particles less than the following sizes:[1]

k	Particle size(aerodynamic diameter)
.80	< 30 μm
.57	< 15 μm
.45	< 10 μm
.28	< 5 μm
.16	< 2.5 μm

Although not specifically stated, it is assumed that the value for k for predicting a TSP emission factor is 1.

We have collected aerosols generated by vehicle traffic on unpaved roads using 10 μm dichotomous (dichot) samplers co-located with Hi-vol samplers. Dichot/TSP ratio data are shown in Table IV. Two days of sampling at three different vehicle speeds were carried out next to a crushed limestone unpaved road. The sampler array consisted of an upwind dichot and Hi-vol and three pairs of Hi-vols and dichots placed downwind at 10, 20 and 30 meters from the edge of the road. At the 20 meter location, two additional dichots were placed at heights of 10 and 16 feet above ground. These heights are those of the inlets. Inlet heights for ground level machines were their normal (~ 4 feet) height above the ground. The dichot/TSP ratios for the elevated machines located 20 meters downwind are referenced to the ground level Hi-vol at that location.

The table clearly shows the decrease in large particles with downwind distance. Dichot/TSP ratios at the 10 meter position are generally a factor of 4-5 lower than the ratios at 20 or 30 meters. It is also apparent that the majority of large particles fall out in the first 10 meters, since the dichot/TSP ratios at 20 and 30 meters are virtually constant. The apparent decrease in the dichot/TSP ratio with height indicated from the data at the 20 meter site should not be construed to indicate a true decrease in the ratio since these ratios are calculated using ground level Hi-vol data rather than Hi-vol data collected at the same elevation. The data also clearly show that the dichot/TSP ratio increases with increasing vehicle speed

The data presented in Table IV also clearly reveal that our measured 10 μm/TSP ratio is much lower than the value recommended for k in AP-42. The mean value from our study for ground level dichots and Hi-vols is 0.18 if the data from the 10 meter location is included and 0.24 if it is not. Our data is in close agreement with data collected from an unpaved road in Lincoln, Nebraska.[12] This experiment involved co-located inhalable particulate (IP) dichotomous samplers (with 15 μm inlets) and Hi-vols. IP dichot/TSP ratios were 0.2, 0.28 and 0.32 at 10, 30 and 50 meters downwind. Despite the fact that these were 15 μm inlets, the agreement with our results is excellent.

DISCUSSION AND CONCLUSIONS

The data presented above reveal the following:

1. Calculations of vehicle-miles of travel on

unpaved roads using the NEDS method would typically underestimate state-wide levels.

2. The silt content of unpaved roads calculated using the NEDS method results in values that are much higher than actual measured values of silt content.

3. The 10 μm fraction of TSP emissions calculated using the factor available in AP-42 are higher than values determined in the field using dichotomous samplers.

We feel that our estimation technique for determining vehicle-miles of travel on unpaved roads represents a better method than that currently used for NEDS. The NEDS method depends solely on population and area while our method is primarily based on actual data on road mileage and traffic volume. Although we only have data available on road mileage and traffic volume for local functional class unpaved roads to use with our method, it should be remembered that these roads represent more than 90% of all unpaved roads nationally. As a consequence, for those states that have complete data, our estimates should give a fairly accurate estimate of the source extent. This is especially true since our estimates are given as a range rather than a single value.

For those states with incomplete data, and especially for those states with missing data, our estimates should be used with caution. Our methods are based on traffic volume usage in neighboring states, but certainly some states have no obvious neighbor that might share similar traffic usage patterns (using Nevada and Oregon to evaluate California is probably the prime example). Despite this possible deficiency, we feel that attempting to evaluate missing or incomplete data based on actual traffic usage in surrounding states is still superior to the NEDS method. A cursory examination of actual county level unpaved road mileage in Illinois[13] versus county level data generated using the NEDS estimation method revealed little similarity.

One distinct difference offered by the NEDS procedure is a way to estimate county level values of unpaved road mileage, which our present method cannot accomplish.

Utilization of the state silt content values derived from the NEDS technique for estimating silt content results in overestimation of unpaved fugitive dust emissions. Since the silt content is linearly related to emissions, use of the NEDS value will typically result in emission estimates that are higher by a factor of from 2-5 than those based on actual measurements of unpaved road silt contents.

Similarly, utilization of the correction factor for determining the fraction of TSP < 10 μm given in AP-42 results in overestimation of unpaved road fugitive dust emissions by approximately a factor of two compared to results obtained using our mean dichot/TSP ratio determined at sampler locations ≥ 20 meters from the road. The values for k reported in AP-42 were determined using cascade impactors. These samplers frequently have particle bounce problems associated with them and, as a consequence, we feel that dichot/TSP ratios are probably a better representation of the actual value for

correcting TSP emissions to PM-10 emissions. Additionally, the values for k given in AP-42 were determined following conversion from Stokes diameter to aerodynamic diameter. This assumes that the density of all particles is identical. Dichotomous samplers measure aerodynamic diameter.

The improvement in state-wide emission inventories due to the improvements in the three parameters examined above can be shown by calculating the < 10 μm fugitive emissions using both NEDS values and our values in equation (1) coupled with both the NEDS estimate of the source extent and our estimates of the source extent. For these calculations we assumed that the vehicle speed was 30 mph, the vehicle had 4 wheels, and that the vehicle weight was 3 tons. The silt content values used with the NEDS methods were those in Table II. The calculations using our data used either the average silt content for samples from that state or if we had no samples from a particular state, the mean value for all samples. The k value used to correct for < 10 μm mass for NEDS calculations was 0.45; for calculations using our data we used a value of 0.24. Additionally, we made a low and a high estimate of < 10 μm mass for our data which correspond to our low and high estimates of the source extent. No other parameters were changed for our low and high estimates.

The ratio of the NEDS estimates to our low and high estimates are shown in Figure 2. Figure 2a shows that none of the emissions calculated using the NEDS data yields estimates that are lower than our low estimates. For the majority of states, the NEDS method of calculating emissions produces values that are a factor of 4 or more higher than our low estimates. Figure 2b shows that the NEDS estimates are also greater than or equal to our high estimates in the majority of states. This occurs despite the fact that even our low estimates of source extent are frequently higher than the NEDS estimates of source extent.

This paper has shown that potential improvements in the evaluation of the source extent, coupled with better data on the silt content and the < 10 μm fraction of TSP can lead to lower estimates of fugitive emissions from unpaved roads compared to the current NEDS method of assessing these emissions.

Table I. State-by-state estimates of vehicle-miles of travel

	Vehicle-miles of travel (millions) Low estimate	High estimate	PEDS
ALABAMA	376	1,352	233
ARIZONA	329	1,776	1,110
ARKANSAS	330	1,591	272
CALIFORNIA	196	1,081	1,697
COLORADO	448	2,240	372
CONNECTICUT	63	156	33
DELAWARE	1	6	5
FLORIDA	1,019	4,065	697
GEORGIA	715	2,528	269
IDAHO	722	2,698	270
ILLINOIS	601	2,377	693
INDIANA	63	137	17
IOWA	888	3,016	456
KANSAS	680	2,713	511
KENTUCKY	161	692	105
LOUISIANA	225	871	140
MAINE	116	362	33
MARYLAND	76	200	30
MASSACHUSETTS	316	1,084	169
MICHIGAN	2,190	5,779	614
MINNESOTA	1,742	6,709	618
MISSISSIPPI	600	2,371	176
MISSOURI	431	2,107	402
MONTANA	761	1,675	765
NEBRASKA	572	2,536	321
NEVADA	82	675	252
NEW HAMPSHIRE	30	107	35
NEW JERSEY	24	91	42
NEW MEXICO	180	1,061	236
NEW YORK	610	1,917	337
NORTH CAROLINA	137	563	96
NORTH DAKOTA	266	1,681	360
OHIO	723	2,747	352
OKLAHOMA	501	2,601	413
OREGON	375	2,390	742
PENNSYLVANIA	337	1,276	475
RHODE ISLAND	32	105	10
SOUTH CAROLINA	326	1,265	182
SOUTH DAKOTA	187	1,260	266
TENNESSEE	348	1,665	252
TEXAS	2,529	9,916	907
UTAH	202	979	171
VERMONT	185	582	47
VIRGINIA	156	648	88
WASHINGTON	473	1,742	528
WEST VIRGINIA	195	776	95
WISCONSIN	170	878	710
WYOMING	191	879	146

Table II. PEDS silt contents (all values in percent).

ALABAMA	16
ARIZONA	30
ARKANSAS	17
CALIFORNIA	28
COLORADO	20
CONNECTICUT	16
DELAWARE	15
FLORIDA	15
GEORGIA	13
IDAHO	22
ILLINOIS	16
INDIANA	16
IOWA	16
KANSAS	18
KENTUCKY	16
LOUISIANA	16
MAINE	19
MARYLAND	15
MASSACHUSETTS	16
MICHIGAN	16
MINNESOTA	16
MISSISSIPPI	15
MISSOURI	16
MONTANA	20
NEBRASKA	19
NEVADA	26
NEW HAMPSHIRE	24
NEW JERSEY	22
NEW MEXICO	19
NEW YORK	18
NORTH CAROLINA	19
NORTH DAKOTA	21
OHIO	16
OKLAHOMA	18
OREGON	21
PENNSYLVANIA	22
RHODE ISLAND	20
SOUTH CAROLINA	15
SOUTH DAKOTA	19
TENNESSEE	15
TEXAS	19
UTAH	26
VERMONT	18
VIRGINIA	15
WASHINGTON	19
WEST VIRGINIA	24
WISCONSIN	17
WYOMING	24

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Table III Silt content of unpaved road samples (all values in percent)

Sample #	Silt content	Sample #	Silt content
AL02	0.18	IL05b	5 30
AL01	8 60	IL08	0 27
AZ01	1 55	IL09	1 56
AZ04	1 88	IL10	2 91
AZ06	3 35	IL16	2 19
AZ07	2 14	IL20	1 26
AZ08	5 39	IL21	3 78
AZ09	3 05	IN09	1 85
AZ10	2 31	IN10	1 68
AZ11	5.05	IN08	1 36
AZ12	2 78	IN03	4 26
AZ13	1 69	IN02	5 56
AZ14	1 76	IN07	1 87
AZ03	6 60	IN04	2 06
AZ05	1 79	IN05	1 76
CA02	3 60	IN06	1 68
CA03	2 67	KY01	2 14
CA04	3 19	KY02	8 26
CA05	1 20	MI03	1 29
CA01	2 51	MI01	2 50
CO04	4 80	MI02	3 92
CO01	0.41	MN01	1 43
CO02	0 07	MN03	2 18
CO03	0 51	MO03	7 90
CO06	2 85	MO01	6 88
CO07	0.42	NC02	6 33
FL01	0 75	NE01	5 71
FL02	1 14	NM01	6 92
GA01	0 27	NM03	3 73
GA02	0 92	NM04	4 21
IA01	1 37	NM05	2 94
IA03	0 29	NM07a	5 84
IA06	5 36	NM08b	3 60
IA02	0 54	NM10	2 32
IA04	0 20	NM09	4 45
IA05	2 76	NV01	1 46
IA07	2 20	NV02	1 17
IL11	10 42	NV03	2 14
IL17	0 93	OH01	4 58
IL18a	3 96	PA07	5 15
IL19b	2 54	PA01	5 74
IL14	1 21	PA04	2 60
IL01	1.00	SD09	3 81
IL02	1 35	SD07a	2 98
IL07	2 25	TN03a	2 03
IL22	2 16	VA03	2 68
IL23a	0 27	VA01	3 48
IL24b	1 00	VT04	3 19
IL25	1 70		
IL26a	1 48		
IL27b	3 31	AVG	2 90

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Table IV Dichotomous/TSP ratios.

	Experiment 1 Dichot/TSP Ratio	Experiment 2 Dichot/TSP Ratio
30 MPH		
10 Meters	0.05	0.02
20 Meters		
Ground	0.26	0.23
10 Feet	0.16	0.14
16 Feet	0.06	0.07
30 Meters	0.13	0.19
35 MPH		
10 Meters	0.06	0.04
20 Meters		
Ground	0.28	0.22
10 Feet	0.16	0.16
16 Feet	0.06	0.10
30 Meters	0.14	0.26
40 MPH		
10 Meters	0.09	0.08
20 Meters		
Ground	0.30	0.26
10 Feet	0.22	0.19
16 Feet	0.15	0.16
30 Meters	0.20	0.36

References

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3 C.C. Cowherd, Jr , C.M. Guenther, and D D. Wallace, "Emissions Inventory of Agricultural Tilling, Unpaved Roads and Airstrips and Construction Sites," U S EPA, Research Triangle Park, NC, EPA-450/3 74-085, (1974)

4. C.C. Cowherd, Jr , J.H. Southerland, and C.O Mann, "Methodology for a National Emissions Inventory of Fugitive Dust Sources," Paper 75 36.3, presented at the 68th Air Pollut Control Assoc Annual Meeting (1975)

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8 R. Bohn, T Cuscino, Jr , and C. Cowherd, Jr , "Fugitive Emissions from Integrated Iron and Steel Plants," U.S EPA, Research Triangle Park, NC, EPA-600/2-78-050, (1978)

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10. T Cuscino, Jr , "Taconite Mining Fugitive Emission Study," Minnesota Pollution Control Agency, Roseville, MN, (1979)

11 R.O. McCaldin, "Fugitive Dust Study for Pima County Air Quality Control District, Tucson, Arizona," Pima County Health Department Air Quality Control Dist Publ., AQ-91A, (1977)

12 T Pace, U S EPA, private communication, (1985)

13. Illinois Dept of Transportation, Office of Planning and Programming, "Illinois Highway and Street Mileage Statistics for Year Ending December 31, 1983," (1983)

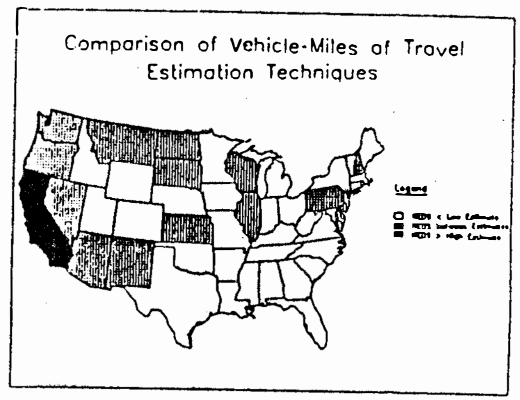

Figure 1. Comparison of vehicle-miles of travel estimation techniques.

LETTER 1279 (CONTINUED)

Technical Comment AQL 005

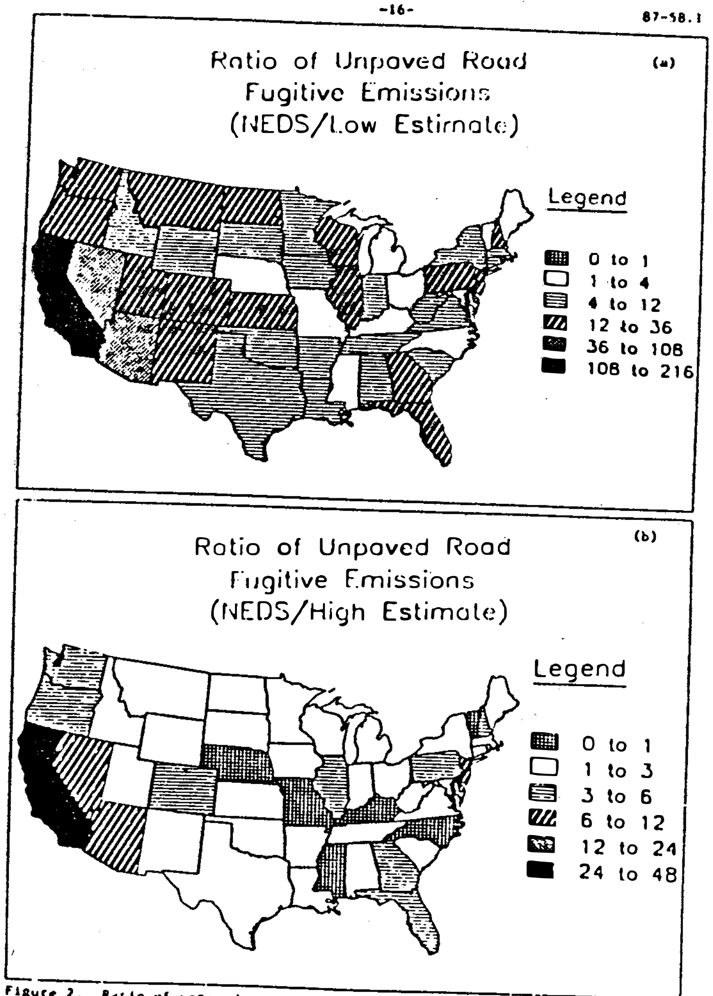

Figure 2. Ratio of unpaved road fugitive emissions $\leq$10 μm using different estimation techniques. (a) Ratio of emissions determined by NEDS method to our low estimate. (b) Ratio of emissions determined by [illegible]

Technical Comment AQL 006

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Air Quality

LOCATION IN DEIS: Vol. IV Appendix 8 PP 30-31 Paragraph B

COMMENT IN REFERENCE TO: Illinois Worst Case Pollutant Concentrations

TECHNICAL COMMENT:

27 Two problems are noted in the modeling assessment used to determine air quality impacts in Illinois from the construction phase of the SCC project. The information used to generate Table 8-25 was apparently derived from data supplied by the USEPA. Illinois provided data to allow a determination of PM10 background concentrations missing from Table 8-25. Apparently, these data were not used in the calculations.

The meteorological data used in the assessment (for all sites) was limited to one year (1986) contrary to USEPA protocol which specifies that five years of data should be used.

We recommend this assessment be redone using the data previously supplied by Illinois and appropriate meteorological data.

Technical Comment AQL 007

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA Air Quality

LOCATION IN DEIS: Vol. IV Appendix 8 PP 31 Table 8-25

COMMENT IN REFERENCE TO: CO concentrations

TECHNICAL COMMENT

28 The fourth column values of carbon monoxide (CO) due to SSC construction for lines 1 and 2 (CO 1-hour and CO 8-hour) are reversed. The 1-hour CO concentration should always be larger (i.e. 793) than the 8-hour value (i.e. 175). The total column for the CO lines should also be corrected to the proper sums of 9.093 for CO 1-hour total and 5.575 for CO 8-hour total.

Technical Comment BIO 001

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA Biological Resources

LOCATION IN DEIS: Vol. I Ch. 3 PP 3-39 Paragraph 1

COMMENT IN REFERENCE TO: Illinois Prairie Remnants

TECHNICAL COMMENT

29 Please add the following sentence at the end of the first paragraph. "The prairie remnants in the Illinois SSC site are largely restorationa of the Fermi National Accelerator property. There is little or no prairie other than reatorations." (See Technical Comment BIO 004).

Technical Comment BIO 002

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Biological Resources

LOCATION IN DEIS: Vol. I Chapter 4 PP 4-51 Paragraph 4

COMMENT IN REFERENCE TO. Listing of important game species and habitats important to them

TECHNICAL COMMENT:

30 We suggest you delete 3rd sentence of 4th paragraph and replace with the following: "Cottontail rabbit, white-tailed deer, red fox, coyote and raccoon are hunted mammals. Beaver, muskrat, fox, coyote, and raccoon are animals which are trapped."

Although much of the area is heavily urbanized portions do support opportunities for hunting and trapping game mammals.

Technical Comment: BIO 003

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Biological Resources

LOCATION IN DEIS: Vol. I Chapter 5 PP 5.1-5 Paragraph 2

COMMENT IN REFERENCE TO: Fermilab Prairie Restoration

TECHNICAL COMMENT:

31 The final sentence of this paragraph implies that the prairie restoration project at Fermilab has not been successful. This is not the case. We suggest that this sentence be modified to read: "This <u>successful</u> attempt at recreating prairie . . . ."

Technical Comment BIO 004

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Biological Resources

LOCATION IN DEIS: Vol. I Chapter 5 PP 5.1.5-5 Paragraph 1

COMMENT IN REFERENCE TO: Number of known Prairie Remnants in the 16-Township study area

TECHNICAL COMMENT:

32 The statement that "Approximately 17 prairie remnants are listed in the 16 township study area.." is incorrect. This is the number of Natural Areas identified by the Illinois Natural Areas Inventory. Of these 17 Natural Areas 5 contain some prairie remnants and 2 contain substantial acreages of moderate to high quality prairie. These large tracts include 116 acres on the West Chicago Prairie and 675 acres on Fermilab (see Vol. 5 Table 5-23 of the Illinois Site Proposal).

Technical Comment BIO 005

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Biological Resources

LOCATION IN DEIS: Vol. I Chapter 5 PP 5.1.5-40 Paragraph 2

COMMENT IN REFERENCE TO: Effect of SSC on game habitat

TECHNICAL COMMENT:

33 Game species populations in the area may be declining because of urbanization; however, there is no evidence that indicates that "Development of the SSC will continue this trend." On the contrary, if Illinois is chosen for the SSC, habitat improvement measures similar to the prairie restoration project at Fermilab could be implemented and habitat for some wildlife species could be increased (see Vol. I, Chapter 5, Section 5.6.4.3).

Volume IV, Appendix 11, at Section 11.3.3.4, in fact, states that: "Development of the SSC is expected to partially counter this trend by providing protected habitats within the boundaries of fee simple areas." Page 5.1.5-40 of Vol. I should be revised to reflect this more accurate appraisal.

Opportunities for enhancing wildlife habitat are presented in Volume 3 - Environmental Assessment (Chapter 4 of this document) and Mitigation Plan Strategies, Chapter 3 of this document.

Technical Comment BIO 006

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Biological Resources

LOCATION IN DEIS: Vol. I Chapter 5 PP 5.2-5 Paragraph 2

COMMENT IN REFERENCE TO: Prairie Remnants in the 16-Township study area

TECHNICAL COMMENT:

34 Please refer to Technical Comment BIO 004

41

Technical Comment BIO 007

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Biological Resources

LOCATION IN DEIS: Vol. IV Appendix 5.3 PP 82 Paragraph A.1.a. 2nd para.

COMMENT IN REFERENCE TO: Description of dry mesic forest community

TECHNICAL COMMENT:

35 The second sentence should be modified to read: "Occasionally, this association may be removed to make room for housing developments."

An additional sentence should be added at the end of the second paragraph. "Domestic livestock grazing has also created an adverse effect on mesic forest reproduction of desirable tree species."

Technical Comment BIO 008

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Biological Resources

LOCATION IN DEIS: Vol. IV Appendix 5.3 PP 84 Paragraph 1

COMMENT IN REFERENCE TO Inconsistent reference and supporting description

TECHNICAL COMMENT

All characteristic woody plants to include silver maple, cottonwood, sycamore, and river birch.

The first full paragraph should be revised to read:

36 "Fens and forested wetlands are found near flowing bodies of water in the site area. These communities are usually in early to mid-successional stages and are heterogeneous with respect to dominant vegetation especially on the wetter sites. Fen habitat in Illinois is predominantly emergent vegetation.

Many of the fen sites have been degraded by historical practices of logging and livestock grazing. Degradation has also come from disruption of groundwater flow. Characteristic plants for a fen are heavy willow, shrubby cinquefoil, New England Aster and white turtlehead. Characteristic understory species are skunk cabbage, marsh marigold, blue iris, fowl manna grass, wild ginger, Virginia waterleaf, false rue anemone, and swamp buttercup."

Technical Comment BIO 009

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Biological Resources

LOCATION IN DEIS: Vol. IV Appendix 5.3 PP 86 Paragraph 4

COMMENT IN REFERENCE TO: Terms and definitions

TECHNICAL COMMENT:

37 We suggest that these terms should be consistent with the ecotypes described in the Illinois Supplement to the Site Proposal, Vol. 3 or Environmental Assessment (Chapter 4) Appendix 5.3 or as in Vol. IV of the DEIS, p. 38.

The definition for Scrub shrub wetland specifies a community in transition in which natural succession will replace emergent vegetation with small woody vegetation that will eventually develop into a mature forest. Woody vegetation accounts for at least 30% of the vegetation and must be less than 20 ft. tall.

Technical Comment BIO 010

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Biological Resources

LOCATION IN DEIS: Vol. IV Appendix 5.3 PP 86 Paragraph 1-3

COMMENT IN REFERENCE TO: Agricultural lands leased for hunting purposed

TECHNICAL COMMENT:

38 We suggest you a new paragraph after the 3rd paragraph: "Due to high demand for hunting opportunities in northeast Illinois, hunting leases on agricultural land is a common practice. The lease rate is highly variable, depending of number and types of species present. In general, most leases are for pheasant, waterfowl, and whitetail deer hunting."

Technical Comment BIO 011

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Biological Resources

LOCATION IN DEIS: Vol. IV Appendix 5.3 PP 90 Table 5.3.9-6

COMMENT IN REFERENCE TO: Corrections of Common Mammals

TECHNICAL COMMENT:

39

1. Correct spelling of "raccoon"
2. Identify individual species of 'mice'
3. Include beaver
4. Omit 'weasel' in second column
5. Add ' squirrel' after Fox in second column
6. Include Franklin's ground squirrel
7. Delete references to cave habitats for bats. Caves do not exist in the area and those species referenced for caves occupy buildings and other natural roosts in the area.
8. Delete "brown bat"; big brown bat and little brown bat are listed below.

Technical Comment BIO 012

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Biological Resources

LOCATION IN DEIS: Vol. IV Appendix 5.3 PP 91 Table 5.3.9-7

COMMENT IN REFERENCE TO: Birds of the Illinois SSC Site by Season(s) of Residence

TECHNICAL COMMENT:

40

1. The Table provides separate listing of Summer and Winter residents. No listing or abundance is given for permanent residents.

2. Ranking system is vague; suggest using Abundant, Common, Occassional. There are, for instance, likely more cardinals in the project area than crows; more goldfinches than mallards, more horned larks than song sparrows, etc.

3. Omit wild turkey from list. Some semi-wild or domestic turkets may exist on or near shooting preserves, but there are no known self sustaining populations. However, if necessary, the wild turkey should logically be listed as a game species.

Technical Comment BIO 013

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Biological Resources

LOCATION IN DEIS: Vol. IV Appendix 5.3 PP 95 Table 5.3.9-9

COMMENT IN REFERENCE TO: Errors and Omissions in Table

TECHNICAL COMMENT:

41

1. Omit 'pied-billed goose.' It should be pied-billed grebe, but it is not a game bird.
2. Correct spelling of ring-necked duck.
3. Include:

   Northern bobwhite
   Bufflehead
   Sora
   Common goldeneye
   Common snipe
   Ruddy duck

Technical Comment BIO 014

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Biological Resources

LOCATION IN DEIS: Vol. IV Appendix 5.3 PP 96 Table 5.3.9-11

COMMENT IN REFERENCE TO: Use of term migratory

TECHNICAL COMMENT:

42 The fish species listed are not technically migratory fish species. Recommend dropping the term migratory and referring to list as freshwater fishes.

Technical Comment BLS 001

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Blasting

LOCATION IN DEIS Vol. I Chapter 3 PP 3-63 Paragraph 5

COMMENT IN REFERENCE TO: Blasting and Vibrations

TECHNICAL COMMENT·

43 The measures proposed to mitigate the effects blasting has on the public should be made mandatory. The measures suggested in this section, coupled with the plan to use stemming and delayed discharges discussed in Volume I Section 5.1.4.2, pp. 5.1.4-18 through 20, should be formalized in the final EIS. A carefully designed blasting plan will help ensure worker safety serve to reduce the threat to the public and operate to allay public concerns about airblast and vibration attendant to construction activities. See Technical Comment BLS 002.

Technical Comment BLS 002

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Blasting

LOCATION IN DEIS: Vol. I Chapter 5 PP 5.1.4-20 Paragraph 2

COMMENT IN REFERENCE TO: Vibration (Blasting) Impacts

TECHNICAL COMMENT:

44 The proposal to use stemming to lessen airblast overpressures should be made mandatory. A blasting plan should be developed indicating the depth of burial, as well as the charge-weight-per-delay, to insure accurate monitoring and subsequent adjustment of airblast overpressures. In addition it is recommended that the minimum top stemming be equal to 70 percent of the burden and that 1/4 inch crushed rock be used for stemming material.

It should be pointed out that blasting at the Illinois site will not commence until the glacial drift-overburden is penetrated. Thus, the average depth at which blasting would first occur would be approximately 100 ft below the land surface. Consequently, both noise and ground vibrations at the surface will be greatly attenuated even without other extensive noise/vibration reduction measures.

Technical Comment BLS 003

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Blasting

LOCATION IN DEIS: Vol. IV Appendix 5.3 PP 58 Paragraph 5

COMMENT IN REFERENCE TO: Other vibration sources

TECHNICAL COMMENT:

45 The DEIS states that vibration measurements were not available from quarries. We performed a calculation using conservative methods and values to determine a general displacement value. The Illinois Site-SSC-calculated values were 30 to 100 times smaller than the tolerances established for the operation of the SSC.

This information is presented in the Illinois Site Proposal. Vol. 7 pp. 7.2-7.7.

Technical Comment BLS 004

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Blasting

LOCATION IN DEIS: Vol. IV Appendix 9 PP 74-77 Paragraphs C1, C2

COMMENT IN REFERENCE TO: Ground Vibrations; Airblast Overpressures

TECHNICAL COMMENT:

46 United States Department of the Interior Publication RI 8896, Bureau of Mines Report of Investigations/1984 "Effects of Repeated Blasting on a Wood Frame House" indicates that a 1.0 in/sec. peak particle velocity (PPV) limit is needed to prevent damage to homes. The Department recommends that the 1.0 in/sec. PPV limit be used instead of the 2.0 in/sec. PPV limit described in the DEIS. With 35 pounds charge-weight-per-delay from a distance of 360 feet ($SD^{1/2}$=60.85), blasts should easily limit ground vibrations to 1.0 in/sec. Using the formula $V = 242 (D.W^{1/2})^{-1.6}$ in Figure 9-31 on page 77 of Appendix 9, a PPV of 0.34 in/sec. is projected.

Airblast Overpressures

47 A blasting plan should be developed that keeps airblast overpressures below the levels that cause damage to nearby structures or generate excessive public complaints. The blasting plan should include the precised depth of burial (column of stemming) necessary to mitigate the effects of airblast overpressure. Merely adjusting the blasting charge-weight-per delay values will not effectively control this product of the blasting process. The minimum top stemming should be equal to 70 percent of the burden; 1/4 inch crushed rock should be used for stemming material to control blow-out of blastholes. Sand is not an effective stemming material.

Technical Comment BLS 005

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Blasting

LOCATION IN DEIS: Vol. IV Appendix 9 PP 84 Paragraphs B1

COMMENT IN REFERENCE TO: Blasting near Shafts Located Close to "Sensitive Receptors"

TECHNICAL COMMENT:

See Technical Comment BLS 004.

Recommend adding the following sentence after the sentence beginning "Therefore, a program monitoring ...": "Legislation has been enacted in Illinois to provide for pre-construction inspections of building within the sphere of influence monitoring vibrations attributed to the blasting, and
48 providing compensation for any structural damages attributal to blasts." This is one of the provisions contained in the "Good Neighbor" Legislation (HB3512) enacted by the Illinois legislation by the SSC. A copy of the Act is presented in Chapter 8 of this document.

LETTER 1279 (CONTINUED)

Technical Comment BLS 006

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Blasting

LOCATION IN DEIS Vol. IV Appendix 9 PP 84-85 Paragraph B2

COMMENT IN REFERENCE TO Blasting near Experimental Area and Enclosures Located Close to "Sensitive Receptors."

TECHNICAL COMMENT

49 See Technical Comments DMM 019 and DMM 020

Technical Comment CST001

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Costs

LOCATION IN DEIS: Vol. IV Appendix 2 PP 1 Paragraph 1

COMMENT IN REFERENCE TO: Presenting the project cost as an average of the seven sites

TECHNICAL COMMENT:

50 The draft EIS acknowledges that cost estimates were made for each of the seven sites, but presents the project cost only as the average of the seven sites. The ISP states (p. 30) that: "Cost considerations are important to the selection process and will be used in conjunction with the technical evaluation criteria in selecting the most desirable site." The Council of Environmental Quality (1502.23) states: "If a cost-benefit analysis relevant to the choice among environmentally different alternatives is being considered for the proposed action, it shall be incorporated by reference and appended to the statement as an aid in evaluating the environmental consequences." The same citation also states "an environmental impact statement should at least indicate those considerations, including factors not related to environmental quality, which are likely to be relevant and important to a decision." Since cost is a consideration in the site selection process, respective cost estimates for each of the sites should be provided as an aid in evaluating the environmental consequences.

In making this comparison, the DOE should use the data supplied in the A.T. Kearney Inc. and Harza Engineering Company report entitled Siting the Superconducting Super Collider at Fermilab - An Independent Cost Study. This report was provided to DOE at the environmental hearings in Illinois on October 7, 1988 as part of the testimony of Dr. Peter Conroy and is presented as Chapter 6 of this document.

Technical Comment CST002

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Costs

LOCATION IN DEIS: Vol. IV Appendix 2 PP 1 Paragraph 1

COMMENT IN REFERENCE TO: Cost estimates, need for contingency

TECHNICAL COMMENT:

The tunnels, access shafts, and experimental halls are major cost elements
of the project (ISP p. 30). The reliability of the estimated costs of
these elements is largely a function of the reliability, applicability, and
extent of the subsurface data. Appendix 2 on cost estimates should include
51 a discussion of the data upon which the cost estimates are based for each
site. If there is a wide variation in the reliability, applicability and
extent of data among the alternate SSC sites, the contingencies in the cost
estimates should be adjusted to reflect the degree of uncertainty
associated with the respective site-specific conditions and data bases.

Technical Comment CST003

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Costs

LOCATION IN DEIS: Vol. IV Appendix 2 PP 9-11

COMMENT IN REFERENCE TO: Adjustments for the Illinois Site Related to Tunnel Excavation and Fermilab

TECHNICAL COMMENT:

52 The Illinois Site Proposal and an independent in-depth study led by A. T. Kearney (Chapter 6 of this document) indicate that Fermilab offers a significant net cost advantage to the construction and operation of the SSC. The range of cost estimates presented in subsequent paragraphs on page 10 under "2.4.3 Project Costs Results" does not appear to reflect a significant net cost advantage, below the estimated average, that the State expects the DOE will realize as a consequence of siting the SSC in tandem with Fermilab. A net savings for SSC construction less than $400-500 million does not, in the opinion of the State of Illinois and its advisors, reflect the true and most probable savings impact likely to accrue to DOE with an Illinois site.

This is particularly true when it is considered that the collider tunnel will be excavated by the State as an infrastructure improvement valued at $316 million. (Paragraph 5 or Page 9 should include collider tunnel excavation as an infrastructure adjustment applicable to the Illinois site.)

The State also suggests that on a life-cycle cost basis, it is appropriate to apply conventional principles of accounting that include interest expense. This can significantly affect the comparison of costs among the site alternatives.

Technical Comment CST004

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Costs

LOCATION IN DEIS: Vol. IV Appendix 3 PP 1 Paragraph 1

COMMENT IN REFERENCE TO:

TECHNICAL COMMENT:

As the introductory paragraph to this appendix indicates, one decommissioning plan is presented. This approach completely ignores a very significant difference between the alternative sites. That is, for Illinois, selection of the Fermilab site means that no new SSC injector complex will need to be decommissioned in the future. Decommissioning of the SSC injector will become part of the decommissioning already committed to for Fermilab, effectively cutting the problems and costs to the nation
53 by as much as fifty percent. As costs to decommission Fermilab are already committed, this will result in a savings of much of the estimated $38.5 million for decommissioning the SSC.

Since decommissioning represents a commitment of future generations to oversee and maintain the site, avoidance of duplication of this effort must be evaluated as a significant advantage for the Fermilab alternative.

See Technical Comment PRP 001.

Technical Comment CUL 001

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Cultural and Paleontological

LOCATION IN DEIS: Vol. I Chapter 3 PP 3-51-58 Table 3-7

COMMENT IN REFERENCE TO: Quantification of cultural resources to be impacted by SSC construction

TECHNICAL COMMENT:

54 We have two concerns with this presentation. First, the total number of sites impacted is not equivalent to the number of sites judged significant in terms of the National Register of Historic Places. Preliminary assessments by Illinois State Museum archaeologists suggest that none of the prehistoric sites within Illinois' SSC site are eligible for nomination to the National Register. In addition, it is noteworthy that residential structures on the Fermilab property are used to house laboratory personnel; thus the impact on these resources was very positive. Finally, it is important to remember that the design of access facilities is flexible and it may be possible to avoid important properties entirely. Second, it is not clear how the numbers presented in the table were calculated. They do not correspond to those presented in a similar table in Appendix 15. See Technical Comments CUL 012 and CUL 011.

LETTER 1270 (CONTINUED)

Technical Comment CUL 002

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Cultural and Paleontological

LOCATION IN DEIS: Vol. I Chapter 4 PP 4-99 Paragraph C

COMMENT IN REFERENCE TO: Grayslake Peat/swamp areas

TECHNICAL COMMENT:

55 The statement "The Crayslake Peat may contain pollen, ... and swamp areas may contain similar resources" is redundant in the sense that the Grayslake Peat generally underlies swamp areas.

Technical Comment CUL 003

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Cultural and Paleontological

LOCATION IN DEIS: Vol. I Chapter 4 PP 4-99 Paragraph C

COMMENT IN REFERENCE TO: Discussion of Pleistocene (glacial) stratigraphy

TECHNICAL COMMENT:

56 The discussion of lithostratigraphic units and paleontological resources is inappropriate because none of the units are discussed or described in the geology section (i.e., Grayslake Peat, Equality Formation, Henry Formation).

Technical Comment CUL 004

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Cultural and Paleontological

LOCATION IN DEIS: Vol. I Chapter 4 PP 4-101 Paragraph C

COMMENT IN REFERENCE TO: Discussion of paleontological resources at Illinois site

TECHNICAL COMMENT:

57 The sentence should be amended to read: "The eastern and southern parts of the ring have some high probability of surface areas with paleontological resources, but most of these will be avoided by tunneling. Potentially impacted areas can easily be avoided or impacts mitigated."

Technical Comment CUL 005

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Cultural and Paleontological

LOCATION IN DEIS: Vol. I Chapter 5 PP 5.1.9-2 Paragraph 2

COMMENT IN REFERENCE TO: Discussion of potential historic Native American sacred sites at Illinois' SSC site.

TECHNICAL COMMENT:

58 This discussion inappropriately attributes contacts with Citizen Band Potawatomi to DOE and is erroneous in its assertion that the Potawatomi identified Native American burials in the general vicinity of the proposed Illinois SSC site. In fact, staff of the Illinois State Museum contacted the Citizen Band Potawatomi. One of several letters exchanged between the two parties identified Potawatomi burials near Kankakee in Will County, Illinois, which is located over 50 miles to the south east of the proposed SSC facility. Another letter noted that the Potawatomi living in the Fox River valley were decimated by smallpox in 1832. Potawatomi cemeteries may be located in the general SSC project area, but discussions with tribal representatives and historical research have yet to identify a particular cemetery let alone its location. Additional research and fieldwork are on-going to exhaustively search for such properties. (See also Vol. IV, Appendix 15, Section 15.1.3.3, PP 26-27).

Technical Comment CUL 006

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Cultural and Paleontological

LOCATION IN DEIS: Vol. 1 Chapter 5 PP 5.1.9-6 Paragraph 3

COMMENT IN REFERENCE TO: Spelling of Quaternary

TECHNICAL COMMENT:

59 Should be: Quaternary strata..

Technical Comment CUL 007

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Cultural and Paleontological

LOCATION IN DEIS: Vol. IV Appendix 5.3 PP 171 Paragraph 1,2

COMMENT IN REFERENCE TO: Other units that contain paleontological resources

TECHNICAL COMMENT:

60 The Robein Silt and Peddicord Formation are both units which generally are buried by younger tills and/or outwash. These units frequently contain pollen, mollusks, and potentially, vertebrate remains.

LETTER 1279 (CONTINUED)

Technical Comment CUL 008

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Cultural and Paleontological

LOCATION IN DEIS: Vol. IV Appendix 5.3 PP 173 Paragraph 2,3,4,5,6

COMMENT IN REFERENCE TO: Characterization of ... Potential: misspellings, repeated information

TECHNICAL COMMENT:

61 Correct misspelling in the second paragraph: Grayslake peat and Cahokia aluvium.

Also the last two paragraphs appear to be earlier draft versions of the preceding two paragraphs.

Technical Comment CUL 009

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Cultural and Paleontological

LOCATION IN DEIS: Vol. IV Appendix 15 PP 2 Paragraph 4

COMMENT IN REFERENCE TO: Discussion of status of cultural resource assessments

TECHNICAL COMMENT:

62 This discussion indicates lack of intensive cultural resource surveys at each of the proposed SSC sites. In fact, the Illinois State Museum has completed systematic surveys of 60% of the land included in the areas to be affected by the construction and operation of the site. Detailed inventories of prehistoric and historic archaeological sites, standing structures, and cemeteries are being assembled. A significant amount of new information, accumulated since the State's data submission but provided to DOE, is not clearly presented in the DEIS. In particular, a series of tables summarizing the number and type of cultural resources per SSC facility location is not presented. Instead, this section is an awkward hybrid of new and old information, in some instances inaccurate (e.g. quantification errors in tables), that do not fully illustrate the fact that Illinois has completed a substantial investigation of the proposed SSC site, and that distribution, density, and character of cultural resources will not be an impediment to the construction and operation of the SSC.

Technical Comment CUL 010

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Cultural and Paleontological

LOCATION IN DEIS: Vol. IV Appendix 15 PP 26 Paragraph 5

COMMENT IN REFERENCE TO: Description of Illinois ring specification

TECHNICAL COMMENT:

63 Typographic error, the DEIS identifies the Corridor-5 alignment as having 65 degree rotation instead of ± 5 degree rotation.

Technical Comment CUL 011

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Cultural and Paleontological

LOCATION IN DEIS: Vol. IV Appendix 15 PP 28 Table 15-4

COMMENT IN REFERENCE TO: Apparent error in calculating the number of sites

TECHNICAL COMMENT:

It should be noted that the area described as the P-Ring is contained wholly within the "Candy-Stripe" area which in turn is contained wholly within the Corridor-5 area. It is, therefore, highly unlikely that the number of sites in the "P-Ring" area is greater than the number in the "Candy Stripe" area.

64 The total number of archaeological sites in the proposed site should be specific to the proposed alignment of the SSC facilities. It is not a sum of the sites in the Corridor-5, Candy Stripe, and P-Ring. This summing greatly overstates the impact.

No data are provided for the Corridor-5 column. This Table should be revised with all changes reflected in Table 3-7 of Vol. I Chapter 3 and Table 5.3.12-1 in Vol. IV, Appendix 5.3.

Technical Comment CUL 012

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

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TECHNICAL COMMENTS

TOPIC AREA: Cultural and Paleontological

LOCATION IN DEIS: Vol. IV Appendix 15 PP 31 Table 15-5

COMMENT IN REFERENCE TO: 'Corridor-5' column

TECHNICAL COMMENT:

65 See Technical Comment SGS 067. The area of the P-Ring is smaller than and wholly within the "Candy-Stripe" area. There should logically be more sites in the Candy-Stripe area than in the P-Ring area. Revisions to this Table should be made and reflected in Table 3-7 of Vol. I, Chapter 3 and Table 5.3.12-2 of Vol. IV, Appendix 5.3.

Technical Comment EXC 001

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Excavated Material

LOCATION IN DEIS: Vol. I Chapter 3 PP 3-39 Paragraph 5

COMMENT IN REFERENCE TO: Disposal of spoils (dolomite) generated by the SSC Project

TECHNICAL COMMENT:

66 The removal of dolomite attendant to SSC construction is not considered to be "surface mining" subject to the permit requirements of Section 4 of the Surface-Mined Land Conservation and Reclamation Act. Ill Rev. Stat. 1987, ch. 96 1/2, par. 4504. However, the disposal of dolomite generated by this construction project at the Fox River Stone Quarry identified in Volume IV, Appendix 10, Section 10.2.3.3, pp. 13-15, will require consultation with the Illinois Department of Mines and Minerals. The Department of Mines and Minerals regulates the mining and reclamation activities associated with this permitted quarry. See also Technical Comments EXC 016.

Technical Comment EXC 002

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Excavated Material

LOCATION IN DEIS: Vol. 1 Chapter 3 PP 3-59 Paragraph 3

COMMENT IN REFERENCE TO: Design-Controlled Mitigation Elements of the Proposed SSC Project

TECHNICAL COMMENT

67 See Technical Comment EXC 001.

Technical Comment EXC 003

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Excavation Materials

LOCATION IN DEIS: Vol. I Chapter 3 PP 3-62 Paragraph 5

COMMENT IN REFERENCE TO: Noise Impacts on People -- Daily Truck Volumes should be Reduced by Increasing Temporary On-Site Storage

TECHNICAL COMMENT:

68 Increasing on-site storage above the proposed 3 000 yds^3 capacity (Vol. IV, Appendix 10, Page 3, Paragraph 1) could also reduce daily noise impacts by reducing the daily truck traffic for spoils removal.

Technical Comment EXC 004

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Excavated Material

LOCATION IN DEIS: Vol. I Chapter 3 PP 3-64 Paragraph 7

COMMENT IN REFERENCE TO: Use of material for roads and parking lots

TECHNICAL COMMENT:

69 Use of excavated materials for roads and parking lots within the project area is an excellent way to utilize some of the dolomite generated. Another possibility might be to use it as aggregate for concrete. The use of spoil for roads and parking lots should be incorporated into the Illinois-specific spoil disposal alternatives in Volume I, Section 5.1.1-2, paragraph 2.However this later possibility would depend on the suitability of the material and may not constitute a significant cost factor.

Technical Comment EXC 005

STATE OF ILLINOIS

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TECHNICAL COMMENTS

TOPIC AREA: Excavated Material

LOCATION IN DEIS: Vol. I Chapter 5 PP 5.1.1-2 Paragraph 3

COMMENT IN REFERENCE TO: Disposal of Dolomite

TECHNICAL COMMENT:

70 See Technical Comment HEA 002.

Technical Comment EXC 006

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA Excavated Material

LOCATION IN DEIS: Vol. I Chapter 5 PP 5.1.6-18 Table 5.1.6-4

COMMENT IN REFERENCE TO: Mileage to disposal sites

71 TECHNICAL COMMENT. Truck trip mileage could be reduced by addition of other disposal sites. See Technical Comments EXC 015 and EXC 016.

Technical Comment EXC 007

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Excavated Material

LOCATION IN DEIS: Vol. I Chapter 5 PP 5.6-5 Paragraph 6

COMMENT IN REFERENCE TO: Spoil Disposal Areas

TECHNICAL COMMENT:

72 It is unclear whether the "spoils disposal areas" referenced in this paragraph are linked to the four (4) identified quarries or refers to the temporary spoil storage areas within SSC project site. See Technical Comment ESC 016.

Technical Comment EXC 008

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Excavated Material

LOCATION IN DEIS: Vol. I Chapter 5 PP 5.6-6 Paragraph 2

COMMENT IN REFERENCE TO: Reducing the cost of construction

TECHNICAL COMMENT:

73 See Technical Comment EXC 004.

Technical Comment EXC 009

STATE OF ILLINOIS

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DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Excavated Material

LOCATION IN DEIS Vol. IV, Appendix 6 PP 14 Paragraph 1

COMMENT IN REFERENCE TO: Disposal of material

TECHNICAL COMMENT:

74 See Technical Comment EXC 001.

Technical Comment EXC 010

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Excavated Material

LOCATION IN DEIS: Vol. IV, Appendix 6 PP 15 Paragraph B

COMMENT IN REFERENCE TO: Temporary Affected Resources

TECHNICAL COMMENT:

75 See Technical Comment EXC 004.

Technical Comment EXC 011

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Excavated Material

LOCATION IN DEIS: Vol. IV Appendix 10 PP 2 Paragraph 4

COMMENT IN REFERENCE TO: The volume of daily truck traffic may be too high for all site and should be mitigated

TECHNICAL COMMENT:

76

While truck traffic generated from a single shaft would not present a major concern, the cumulative truck traffic generated from the operation of up to 10 TBM's (estimated to be 480 truckloads) would need to be mitigated. This translates into 960 truck trips per day or 1 truck every 45 seconds (assuming 12 hour delivery period). For Illinois, concentration of construction in the southeast quadrant during a single time period would result in a worst case situation of this entire traffic all terminating at a single quarry. Recommended mitigation measures include:

- o increase on-site storage to reduce daily traffic generation from each shaft site
- o operate fewer TBM's at any one time, as long as this does not prove disruptive to the construction schedule
- o spread TBM's around SSC ring to distribute construction to more than one quadrant
- o utilize a greater number of disposal sights for spoils, thereby shortening truck distance and further dispersing truck traffic
- o utilize more than one quarry for the assigned shafts if construction in an area would create excessive truck traffic to only a single quarry
- o utilize remote shafts for withdrawing excavated materials (which can be transported through the tunnel from other construction segments)

Finally, the daily 12-hour trucking schedule could be adjusted in suburban and urban areas to avoid peak-hour traffic, thereby improving utilization of the truck fleet and mitigating potential congestion problems to local resident.

Technical Comment EXC 012

STATE OF ILLINOIS

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DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Excavated Material

LOCATION IN DEIS: Vol. IV Appendix 10 PP 3 Paragraph 1

COMMENT IN REFERENCE TO: On-site storage is inadequate

TECHNICAL COMMENT:

78 While the volume of on-site storage (estimated at 3000 yds^3 near each shaft) is sufficient to smooth the flow of spoils from TBM's operating 24 hours per day to trucks operating 12 hours per day, it is insufficient to mitigate the impacts of spoils haul to disposal sites. Assuming more on-site storage is used to reduce daily truck traffic, additional storage areas would be necessary. Additional land areas could be obtained through temporary construction easements or use permits negotiated with the land owners.

Technical Comment EXC 013

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Excavated Material

LOCATION IN DEIS Vol. IV Appendix 10 PP 13 Paragraph A

COMMENT IN REFERENCE TO: Disposal of spoils (Illinois)

TECHNICAL COMMENT:

79 See Technical Comment EXC 001.

Technical Comment EXC 014

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DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Excavated Material

LOCATION IN DEIS: Vol. IV Appendix 10 PP 13-14

COMMENT IN REFERENCE TO: Daily truckload volumes

TECHNICAL COMMENT:

77 See Technical Comment EXC 010.

Technical Comment EXC 015

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DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Excavated Material

LOCATION IN DEIS: Vol. IV Appendix 10 PP 13-14

COMMENT IN REFERENCE TO: Daily truckload volumes

TECHNICAL COMMENT

80 See Technical Comment EXC 010.

Technical Comment EXC 016

STATE OF ILLINOIS

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DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA Excavated Material

LOCATION IN DEIS: Vol. IV Appendix 10 PP 13-16

COMMENT IN REFERENCE TO: The scenario of Illinois using four quarries to dispose of its excavated material.

TECHNICAL COMMENT:

81 For the purpose of the EIS, DOE focused on the alternative of using active sand and gravel pits and rock quarries for the disposal of excavated material (see attached memo). DOE assumed that only four of the pits/quarries would be used. However, the State has identified 46 quarries, and sand and gravel pits which could be used for spoil disposal of excauated materials. Of these, the State has received inquires from operators of 17 sites who would be willing to accept excavated materials. See attached memo and Technical Comment TRN 010.

Technical Comment EXC 016

Illinois State Geological Survey

Natural Resources Building
615 East Peabody Drive
Champaign, IL 61820
217/333-4747

Illinois Department of Energy and Natural Resources

MEMORANDUM

TO: Dr. Matt Werner
FROM: Lucy Curran Illinois State Geological Survey
DATE: March 29, 1988
RE: Illinois SSC spoil disposal plan updates

As was discussed during your visit last week, disposing of the material excavated from the Illinois SSC in active sand and gravel pits and rock quarries is becoming the favored disposal alternative for several reasons:

--There is a surplus demand for the excavated material. A recent survey of the active pit and quarry operators in the 16-township area surrounding the proposed site shows that 15 are interested in taking the material for reclamation, blending, and recrushing purposes (see attached map for the location of these 15 sites). Six of the operators say that they would be willing to take all of the 4.7 million tons, three would take up to 2.5 million tons, three would take up to 1.0 million tons, one would take up to 800,000 tons, one would take up to 500,000 tons, and one operator has not yet specified an amount. This demand totals to 40 million tons, over eight times the amount anticipated to be excavated.

--Transportation of the excavated material would be minimized because the sites willing to accept the material are distributed throughout the 16-township area. This is favorable from both cost and truck traffic nuisance standpoints.

--Active operators have the equipment to readily handle incoming excavated material.

A possible unfavorable outcome of this disposal alternative would be a negative impact on local aggregate prices due to excess supply on the market from those operators blending and recrushing the excavated material. This is unlikely for three reasons. First, most of the excavated material will be produced by TBMs. The size and shape of this material limits its use to unspecified fill (as was found with the Chicago TARP project). Therefore, there is a very limited market for the TBM material other than slowly blending it with quarry rock. Second, the drill-and-blast material which can be readily crushed and marketed will be taken to existing operations that are equipped for their standard annual production. Given the fact that the material coming from the SSC is a one time supply, it is unlikely that operators will make the investment needed to drastically

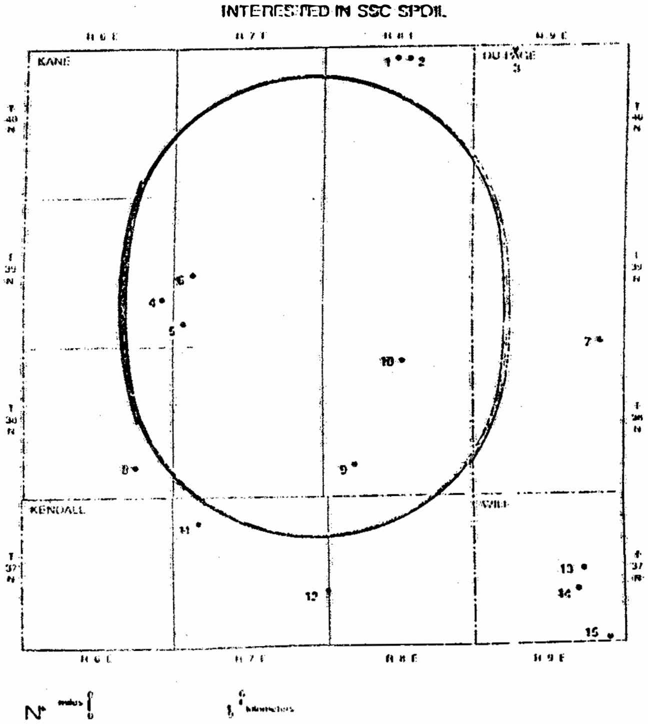
Technical Comment EXC 016

increase their production capacities. Third, if the SSC does come to northeastern Illinois, there will be an increased demand for aggregate material both from the construction of the SSC and the growth to the surrounding area.

If there still seems to be a problem with excess supply after these buffering effects are taken into account, a great deal of the excavated material could be landscaped around service and campus areas. This option was used around three of the pumping stations of the Chicago TARP project. It proved to be an aesthetically-pleasing disposal alternative.

Technical Comment EXC 016

SAND AND GRAVEL PITS AND QUARRIES INTERESTED IN SSC SPOIL



Technical Comment GEO 001

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Geology and Geoengineering

LOCATION IN DEIS: Vol. I Chapter 3 PP 3-34 Paragraph 8

COMMENT IN REFERENCE TO Site Alternatives - Illinois Site

TECHNICAL COMMENT:

82

The statement that "the entire tunnel would be constructed by tunneling methods in dolomite below the water table" gives the impression that the tunnels will be constructed in an aquifer.

The Galena-Platteville Group in which the tunnel is constructed is an aquitard with lateral hydraulic conductivities of less than 10^{6} cm/s. Little vertical permeability exists within this unit except in the uppermost weathered strata at the contact with the overlying glacial materials.

Technical Comment GEO 002

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Geology and Geoengineering

LOCATION IN DEIS: Vol. I Chapter 4 PP 4-3 Table 4-1

COMMENT IN REFERENCE TO: Geologic structure

TECHNICAL COMMENT.

83

Under geologic structure/Illinois, the last phrase should read "few faults with little displacement (less than 35 feet)." instead of "some faults of little displacement."

Technical Comment GEO 003

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Geology and Geoengineering

LOCATION IN DEIS: Vol. I Chapter 4 PP 4-4 Table 4-1

COMMENT IN REFERENCE TO: Geologic Resources

TECHNICAL COMMENT:

84 Dolomite is produced in the area, not limestone (see Geologic Resources/ Illinois).

Technical Comment GEO 004

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Geology and Geoengineering

LOCATION IN DEIS: Vol. I Chapter 4 PP 4-4 Table 4.1

COMMENT IN REFERENCE TO: Geologic Hazards

TECHNICAL COMMENT:

85 With respect to Geologic Hazards, Illinois should read: potential for minor biogenic gas in glacial draft. This biogenic gas usually methane gas, is commonly encountered in shallow wells north of the Ohio and Mississippi Rivers. The gas is not associated with the proposed bedrock.

Technical Comment GEO 005

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA Geology and Geoengineering

LOCATION IN DEIS: Vol. 1 Chapter 4 PP 4-5 Paragraph 1

COMMENT IN REFERENCE TO: Glacial geology

TECHNICAL COMMENT:

86 The statement "The occasional higher hills that rise .... are glacial deposits" implies that the low lying areas are not glacial deposits. Many low-lying areas are till or outwash plains. The statement should be revised to reflect this fact.

Technical Comment GEO 006

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Geology and Geoengineering

LOCATION IN DEIS: Vol. I Chpater 4 PP 4-5 Paragraph 3

COMMENT IN REFERENCE TO: Stratigraphy and least deformed rocks

TECHNICAL COMMENT:

The least deformed rocks, where there is indicated structural control in the DEIS is found in Illinois. No structural control is indicated on the cross-section for Colorado. The one for Tennessee shows gently folded rocks with up to 300 feet of vertical relief of structure at the depth of the tunnel while Illinois shows only a maximum relief of 200 feet on structure at the depth of the tunnel. It is not correct to say that Colorado and Tennessee have been the least deformed. An analysis of the structural complexities as reflected by the cross-sections, contained in Vol. IV, Appendices 1-3 follows:

Analysis of Cross Section in Volume IV, Appendix 1-3

- Arizona - Tectonically complex with intrusives, steeply dipping beds, eroded Quaternary surfaces through which the tunnel crosses.
- Colorado - Uncontrolled structural picture, no data in report.
- Illinois - Maximum relief 200' on structure at depth of the tunnel. 87 Gently undulating surface with uniform lithology at the depth of the tunnel. The tunnel is shown to intersect only one formation and two lithologies-limestone and dolomite. Very minor faulting with 35' displacements has been noted.
- Michigan - Maximum relief greater than 200' on structure with variable lithologies at depth of the tunnel.
- N. Carolina - Tectonically complex with numerous plutons and volcanic rocks. Complexly faulted with shear zones indicated at the tunneling levels.
- Tennessee - Gently folded rocks with 300' of relief on structure at the depth of the tunnel. The tunnel cuts four different formations.
- Texas - Dipping beds, with 8 mapped fault intersections at the depth of the tunnel. Faults have up to 50' of displacement. Structural relief in the area is greater than 500'. Some lateral variability of lithology from chalk to marl along the tunneling depths.

Conclusion: Illinois has the most uniform lithography and simplest structure.

88 See also Technical Comment GEO 021

Technical Comment GEO 007

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Geology and Geoengineering

LOCATION IN DEIS: Vol. I Chapter 4 PP 4-6 Paragraph 4

COMMENT IN REFERENCE TO: Joints

TECHNICAL COMMENT:

89 In the geologic summaries contained in Vol. IV, Appendix 5, all sites report joints in bedrock units. Therefore the statement "Joints are likely to be found in all bedrock units." should read "Joints have been found in all bedrock units."

Technical Comment GEO 008

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Geology and Geoengineering

LOCATION IN DEIS: Vol. I Chapter 4 PP 4-6 Paragraph 3

COMMENT IN REFERENCE TO: Geologic structure: Faulting

TECHNICAL COMMENT:

90 It is important to emphasize that the "local faults" mapped at the Illinois Site were inferred based on seismic data and not displacement or disruption of surface units (Illinois proposal, Vol. 3, Section 3.2.3, page 325). Previous TARP tunneling experience suggest that these "faults" may instead be minor folds (Illinois proposal, Vol. 3, Section 2.3.4 page 325).

Technical Comment GEO 009

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Geology and Geoengineering

LOCATION IN DEIS: Vol. I Chapter 4 PP 4-6 Paragraph 2

COMMENT IN REFERENCE TO: Broad, open folds and shallow dipping extensions that have been locally tilted

TECHNICAL COMMENT:

91 Reference to "broad, open folds with shallow dipping extensions that have locally tilted the sediments at the Illinois site" should be modified to highlight broad undulating surfaces, not folds. The bedrock surfsces are nearly flat (see Appendix 5, 5.3.1.3). Structural relief across these undulating surfaces is less than 80 feet. Regional tilt to the east is generally 10 to 15 feet to the mile, similar to the stated basin dip of about 12 feet to the mile noted for Colorado and less than that given for Tennessee. The nature of the broad undulating bedrock surfaces, in Illinois is documented from 850 borings to bedrock and 33 specifically placed boreholes in the region.

Technical Comment GEO 010

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Geology and Geoengineering

LOCATION IN DEIS: Vol. I Chapter 4 PP 4-7 Paragraph 1

COMMENT IN REFERENCE TO: Permeability

TECHNICAL COMMENT:

92 Permeability of clay rich till may be as small as 10^{-9} cm/sec. Engineering tests are limited and permeability may be correctly reported only to 10^{-6} cm/sec.

Technical Comment GEO 011

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Geology and Geoengineering

LOCATION IN DEIS: Vol. I Chapter 4 PP 4-7 Paragraph 1

COMMENT IN REFERENCE TO: Glacial sediment cover

TECHNICAL COMMENT:

93 The sentence should be revised to read: "In Illinois water-bearing glacial overburden covers the entire site area."

Technical Comment GEO 012

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Geology and Geoengineering

LOCATION IN DEIS: Vol. I Chapter 4 PP 4-9 Paragraph 2

COMMENT IN REFERENCE TO: Commercial oil and gas resources in Illinois

TECHNICAL COMMENT:

94 Commercial oil and gas resources closest to the Illinois site are located 100 miles to the south. Very small quantities of biogenic methane gas have been encountered near the site, but none are commercially valuable. The source of this gas is decaying organic mater in glacial deposits. (See Technical Comment GEO 004).

Technical Comment GEO 013

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Geology and Geoengineering

LOCATION IN DEIS: Vol. IV Appendix 5.3 PP 19 Paragraph 1

COMMENT IN REFERENCE TO: Metallic Resources: sphalerite and galena

TECHNICAL COMMENT:

95 It should be pointed out that the sphalerite and galena was identified from only one joint out of 1097 joints logged in 33 boreholes (Curry et. al., 1988).

Curry, B.B.; A.M. Graese, M.J. Hasck, R.C. Jaiden, R.A. Bauer, D.A. Schumacher, K.A. Norton and W.C. Dixon, 1988. Geological-geotechnical studies for siting the Superconducting Super Collider in Illinois: Results of the 1986 Test Drilling Program. Illinois State Geological Survey, Environmental Geology Notes, EGN 122.

Technical Comment GEO 014

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Geology

LOCATION IN DEIS Vol. IV Appendix 5.3 PP 4 Table 5.3.1-1

COMMENT IN REFERENCE TO: Contents

TECHNICAL COMMENT:

"Laminated fine-grained silt and clay with minor sand." is all that needs to be said under Equality Formation. The rest of the description more aptly describes sediments in Chicago.

The Peddicord Formation and Robein Silt need to be switched (the Peddicord Formation is the younger unit). Under Robein Silt "Silt is locally derived chiefly from loess and deposited by colluviation.

96 Silt and Formation should be capitalized in Robein Silt and Wedron Formation.

The Glasford Formation has been omitted and should be discussed below Robein Silt.

The Kankakee Formation is nowhere glauconitic under the site area. Minute grains or galuconite are present in some units, but they are not abundant.

The Maquoketa Group is not generally oxidized in the upper part under the study area (i.e., the Neva Formation is not present).

The Wise Lake Formation would be the uppermost unit encountered in tunnel.

The State of Illinois does not propose to place the experimental halls in the Glenwood Formation.

Technical Comment GEO 015

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Geology and Geoengineering

LOCATION IN DEIS: Vol. IV Appendix 5.3 PP 1 Paragraph 5.3.1

COMMENT IN REFERENCE TO: Drainage Pattern

TECHNICAL COMMENT:

97 The dentritic drainage pattern is due to normal dissection, and not due to glaciotectonics ("glacially-deformed dentritic pattern).

Technical Comment GEO 016

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Geology and Geoengineering

LOCATION IN DEIS: Vol. IV Appendix 5.3 PP 2 Figure 5.3.1-1

COMMENT IN REFERENCE TO: Topographic Setting of Illinois Site

TECHNICAL COMMENT

98 Typographical Error: moraine not morraine.
stream not strearn

Technical Comment GEO 017

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Geology and Geoengineering

LOCATION IN DEIS: Vol. IV Appendix 5.3 Figure 5.3.1-2

COMMENT IN REFERENCE TO: See Attached Copy

TECHNICAL COMMENT:

1. Kankakee Dolomite not Kankakee Formation.
2. Elwood Dolomite not Elwood Formation.
3. The Wilhelmi Formation is part of the Silurian not the Maquoketa.
4. Units encounted by tunnel should only extend down to the Grand Detour-Mifflin Formations.

99

5. The Grand Detour-Mifflin Formations should be next to the shaley units as shown in the attached figure.
6. Ironton-Galesville Sandstone not Formation.
7. Mt. Simon Sandstone not Formation.
8. The Eau Claire Formation should consist of Sandstone, Siltstone, shale and dolomite not silt.
9. Oneota not oneta.

Technical Comment GEO 017

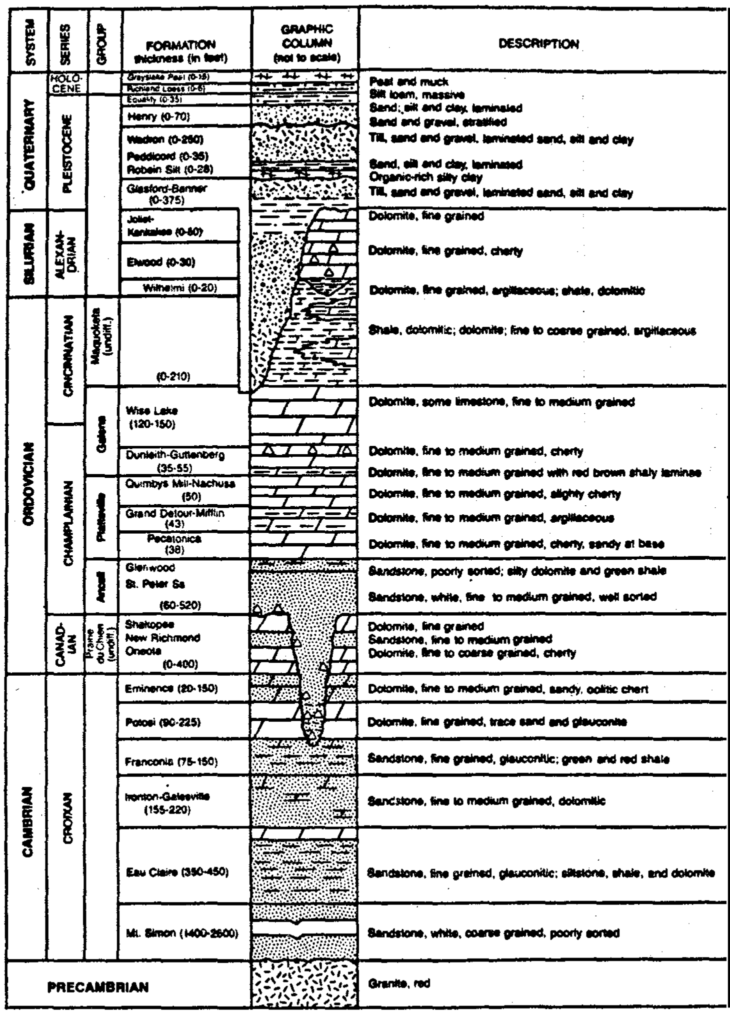


Figure 7 Stratigraphic column of bedrock and drift units in northeastern Illinois, northeast of the Sandwich Fault Zone (not to scale).

Technical Comment GEO 018

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Geology and Geoengineering

LOCATION IN DEIS: Vol. IV Appendix 5.3 PP 7 Table 5.3.1-1

CEMENT IN REFERENCE TO: Glenwood Formation

TECHNICAL COMMENT:

100 The Pecatonica is the likely lowest formation potentially encountered in the experimental halls not the Glenwood Formation.

Technical Comment GEO 019

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA Geology and Geoengineering

LOCATION IN DEIS: Vol. IV Appendix 5.3 PP 8 Table 5.3.1-1

COMMENT IN REFERENCE TO: Nomenclature

TECHNICAL COMMENT:

1. Ironton-Galesville Sandstones not Formations.

101 2. Mt. Simon Sandstone not Formation.

Also the Ironton-Galesville is also a regional aquifer and should be noted in the table as another characteristic.

Technical Comment GEO 020

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Geology and Geoengineering

LOCATION IN DEIS: Vol. IV Appendix 5.3 PP 9 Paragraph 5.3.1.3

COMMENT IN REFERENCE TO: Oswego Syncline

TECHNICAL COMMENT:

102 The Oswego syncline should not be considered a significant structural feature. It is a small undulation on the top of the Galena surface

Technical Comment GEO 021

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Geology and Geoengineering

LOCATION IN DEIS: Vol. IV Appendix 5.3 PP 9-13

COMMENT IN REFERENCE TO Geologic cross sections and implications

TECHNICAL COMMENT

103 In comparison with the cross-sections presented for other sites, the description of Illinois geologic structure should describe the bedrock dips as increasing locally along some minor folds and undulations. These are not folds or structures with dips nearly as great as those depicted for Arizona Michigan, North Carolina, Tennessee, or Texas. The cross section for Colorado shows no mappable structural horizons suggesting the lack of vital control. Detail on the Illinois structure is clearly greater than for any other site, as indicated by the information provided on the frequency and amplitude changes noted on the boundary surfaces in the cross sections for each site. The frequency and amplitudinal changes should not be confused with structural complexity. They only reflect control, minimizing risk or future surprises, and ensuring adequate knowledge of the heterogeneities of the subsurface. In the case for Illinois, the data reflect uniform litnologies, and simple geometries with structural relief less than that for any other site.

104 See Technical Comment GEO 006.

Technical Comment GEO 022

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Geology and Geoengineering

LOCATION IN DEIS: Vol. IV Appendix 5.3 PP 12 Figure 5.3.1-5

COMMENT IN REFERENCE TO: Alternate Tunnel

TECHNICAL COMMENT:

105 The shallow B alternate tunnel is mentioned in the legend, but is not shown on the figure.

Technical Comment GEO 023

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Geology and Geoengineering

LOCATION IN DEIS: Vol. IV Appendix 5.3 PP 13 Table 5.3.1.2

COMMENT IN REFERENCE TO: Typographical error: western direction

TECHNICAL COMMENT:

106

1. Under Minor Arc; "Arc" should go beneath "western"
2. "Silty loam clays" not "silty lean clays".

Technical Comment GEO 024

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Geology and Geoengineering

LOCATION IN DEIS: Vol. IV Appendix 5.3 PP 14 Table 5.3.1.3

COMMENT IN REFERENCE TO: Geotechnical properties of overburden soils

TECHNICAL COMMENT:

107 Penetrometer data for the overburden soils encountered during drilling are presented in EGN 117, EGN 120 and EGN 122. These data are considered surrogates for values obtained by Unconfined Compressive Strength tests (USC) and should be reported. Different states have used different tests and results have been reported as such. Therefore, the Illinois data should also be noted in the appropriate column.

Kempton, J.P. et. al. 1986. Geological-geotechnical studies for siting the Supeconducting Super Collider in Illinois: Results of the fall 1984 test drilling program. Illinois State Geological Survey. Environmental Geology Notes, EGN 117.

Kempton, J.P. et. al. 1987. Geological-geotechnical studies 1985 test drilling program. Illinois State Geological Survey. Environmental geology Notes, EGN 120.

Curry,B.D., A.M. Graese, M.J. Hasck, E.R. Vaden, R.A. Bauer, D.A. Shamacher, and K.A. Norton. 1988. Geological-geotechnical studies for siting the Superconducting Supercollider in Illinois: Results of the 1986 test drilling program. Illinois State Geological Survey. Environmental Geology Notes, EGN 122.

LETTER 1279 (CONTINUED)

Technical Comment GEO 025

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Geology and Geoengineering

LOCATION IN DEIS: Vol. IV Appendix 5.3 PP 15 Table 5.3.1-4

COMMENT IN REFERENCE TO: Additions and corrections

TECHNICAL COMMENT:

108

1. Under Poissons ratio for Maquoketa dolomite the value should be 0.27 not 0.22.
2. Add limestone under second Wise Lake.

Technical Comment GEO 026

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Geology and Geoengineering

LOCATION IN DEIS: Vol. IV Appendix 5.3 PP 16 Paragraph 1 and 3

COMMENT IN REFERENCE TO: Summary of geoengineering conditions

TECHNICAL COMMENT:

109 The phrase "Veins of shale" is too unspecific; "thin shaley laminae and clay-filled joints" is more correct.

Technical Comment GEO 028

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Geology and Geoengineering

LOCATION IN DEIS: Vol. IV Appendix 5.3 PP 17 Paragraph 2

COMMENT IN REFERENCE TO: Gas occurrence age of Robein Silt

TECHNICAL COMMENT:

The sentence should be amended: "No gas was encountered in 33 borings made for the SSC project."

110 Based on C-14 on dating, the Robein Silt was formed between 24.000 to 50.000 yrs. B.P.

The Robein Silt is a buried soil. The unit, along with the Peddicord Formation and Berry Clay, separate tills of the Wedron Formation (Wisconsinan) and Glasford Formation (Illinois).

Technical Comment GEO 029

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Geology and Geoengineering

LOCATION IN DEIS: Vol. IV Appendix 5.3 PP 18 Figure 5.3.1.6

COMMENT IN REFERENCE TO: Legend-map agreement

TECHNICAL COMMENT

111 Coal Past Producers are listed in the legend but not shown on map.

Technical Comment GEO 030

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Geology and Geoengineering

LOCATION IN DEIS: Vol. IV Appendix 6 PP 14 Table 6.3.3.2

COMMENT IN REFERENCE TO: Rock and earthen materials and effects of same. Potential problems from dissolution of secondary minerals

TECHNICAL COMMENT:

112 The DEIS recognizes that small quantities of sulfides are found in fractures and vugs and will be contained in spoils excavated from the tunnels and shafts. Although the DEIS notes the buffering capacity of the dominantly calcareous sediments. the level of impact, if any, to the area is not specifically stated. The potential impacts from oxidization of sulfides contained within spoils are negligible and a statement to that effect should be made part of the paragraph.

Technical Comment GEO 031

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Geology and Geoengineering

LOCATION IN DEIS: Vol. IV Appendix 10 PP 43 Table 10.1.3.2

COMMENT IN REFERENCE TO: Density of Rock

TECHNICAL COMMENT:

Table 10.1.3-2 states that Illinois did not report density of rock. See Illinois SSC proposal, EGN 120. page 16; EGN 117, page 14; Harza/ISGS Geotechnical Report TABLE 10.

State of Illinois. August 1987. Proposal to site the Superconducting Super Collider in Illinois. Prepared for the U.S. Department of Energy.

113 Kempton, J.P. et. al., 1987. Geological-geotechnical studies for siting the Superconducting Super Collider in Illinois: results of the spring 1985 test drilling program. Illinois State Geological Survey. Environment Geology Notes, EGN 120.

Kempton, J.P. et. al., 1986. Geological-geotechnical studies for siting the Superconducting Super Collider in Illinois: results of the fall 1984 test drilling program. Illinois State Geological Survey, Environmental Geology Notes, EGN 117.

LETTER 1270 (CONTINUED)

Technical Comment GWT 001

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Groundwater

LOCATION IN DEIS: Vol. I Section 1.4 PP 1-4 Table 1-1

COMMENT IN REFERENCE TO: Loss of 320 Wells

TECHNICAL COMMENT:

114 Table 1-1 claims a loss of 320 water wells. This value is inconsistent with Illinois studies. As stated on page 4-21 of Volume I, Chapter 4, and in Volume IV, Appendix 7, approximately 320 wells are known to occur within the 1000-ft zone of the stratified fee estate, projected to the surface (See Figure 4-2, Vol. IV, Appendix 4; Vol. IV, Appendix 7, pp. 112-113).

The DOE Invitation for Site Proposals (ISP) (pp. 44 and 45) requires a 30-ft. primary shield around the tunnel which cannot be penetrated, and a restricted zone of 150-ft. on each side of the tunnel which can be penetrated by existing wells, with authorization. Illinois' studies indicate that approximately 6 wells are located within the primary shield area and would be permanently impacted. Extension into the restricted zone results in an impact on an additional 25 wells bringing the total number of well impacts to 31.

An overwehelming majority of the 320 wells identified are shallow in depth and do not pentrate the primary and restricted zones around the tunnel. The SSC tunnel would be excavted in Strata of the Galena-Platteville Group which lies 300 to 700 ft below the surface and acts as an aquitard separating the shallow and deep aquifers. Thus, there is no effect on groundwater resources except where wells actually penetrate the unit or where surface facilities, access shafts, and or construction needs disrupt operation of shallow aquifer wells.

Based on the ISP and on the Illinois data base on wells in the area, the States estimates that approximately 6 to 31 wells would be impacted.

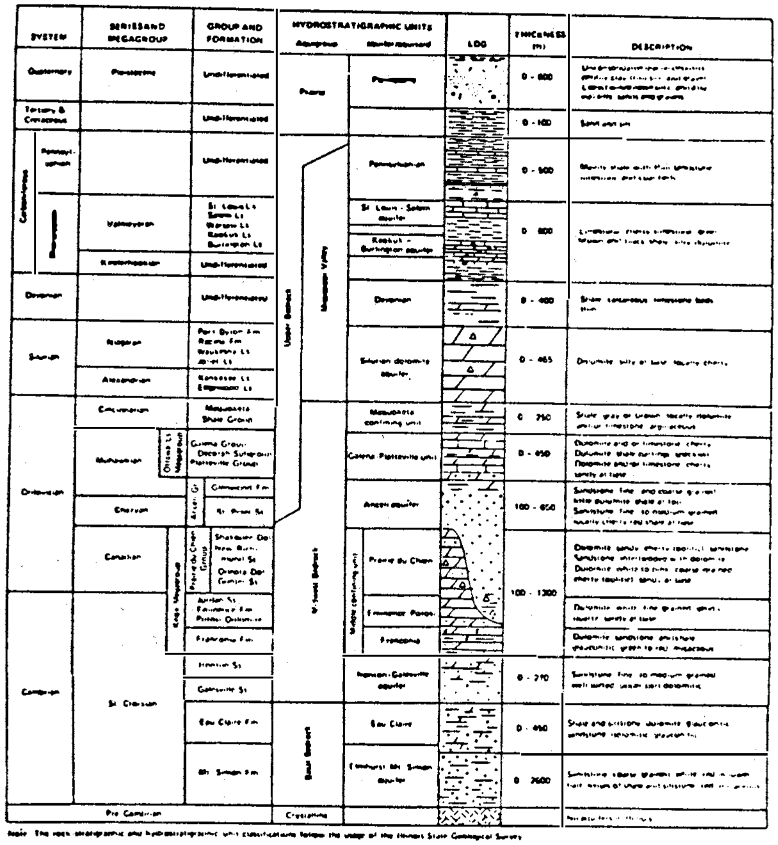


Figure 5. Stratigraphy and hydrostratigraphy of the rocks in the study area (From Visocky et al., 1985)

Technical Comment GWT 002

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Groundwater

LOCATION IN DEIS: Vol. I Chapter I PP 1-4 Table 1-1

COMMENT IN REFERENCE TO: Regional Overdraft of Major Acquifers in Illinois

TECHNICAL COMMENT:

115 At several places in the DEIS it is noted that a regional overdraft of major aquifers occurs in Illinois; most notably on p. 4-19, Vol. I, Chap. 4, Table 4-4; and p. 4-21, Vol. 1. However, Vol. I, Chapter 4.2.3, p. 4-18 it is stated "... abundant groundwater resources occur at the Illinois, Michigan, and Texas sites." Also Vol. IV, Appendix 7, Chapter 7.2.3.3, p. 108, "Water level/ overdraft impacts from direct construction water withdrawals would be negligible" and "The anticipated level of groundwater withdrawal for construction would slightly increase the level of overdraft but would not result in a measurable impact since it would not require a change in groundwater use patterns locally." Additionally, 7.2.3.3-2, p. 109 notes "Recharge impacts resulting from SSC construction at the Illinois site would be negligible" and "The impact to recharge would continue to be negligible through project operations since there would be minimal, if any, further land surface disturbance or construction of impervious surfaces." It should also be noted that Fermilab water use already accounts for much of the water need anticipated for SSC consumption and use (See Technical Comment PRP 001).

Vol. I, Chap. 5, p. 5.1.2-29, Section 5.1.2.4, "Water Use" states ..."The impact (water level declines) ... would not be significant because of the wide areal distribution of the increased groundwater use very limited local effect [DOE parentheses]."

Hence, to cite an incremental increase in the overdraft of these aquifers as a major impact (Tables 1-1 and 3-7) is contradictory. See also Technical Comments GWT 011, GWT 022, and GWT 005.

Technical Comment GWT 003

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Groundwater

LOCATION IN DEIS: Vol. I Chapter 3 PP 3-51 Table 3-7

COMMENT IN REFERENCE TO: Loss of Wells

TECHNICAL COMMENT:

116 This table overstates the SSC impact on Illinois wells. The loss will not be 320 wells listed in the table. The DOE ISP provides for continued surface use of real property if the restricted area (70' top to bottom 150' side to side around tunnel) is deeper than 15' below ground surface. It is within this area that wells or other use are restricted. The State estimates that only 6 to 31 wells will be affected by such restrictions, not 320 wells which falls within the 1000' stratified fee acquisition corridor. See Technical Comment GWT 001.

Technical Comment GWT 004

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Groundwater

LOCATION IN DEIS: Vol. I Chapter 3 PP 3-51 Table 3-7

COMMENT IN REFERENCE TO: Water Supply

TECHNICAL COMMENT:

117 The table characterizes the SSC impact on groundwater as an "incremental increase to local overdraft." This leads to the conclusion that Illinois is water poor, this is not the case. The sand and gravel aquifers and surface water resources, (e.g. diversion of Lake Michigan water) can provide many times the water needs of the SSC and planned development in the SSC site area. See also Technical Comments GWT 001, GWT 002, GWT 003 and GWT 011.

Technical Comment GWT 005

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Groundwater

LOCATION IN DEIS: Vol. I Chapter 3 PP 3-66

COMMENT IN REFERENCE TO: Water Supply Impact

TECHNICAL COMMENT:

118 A regional overdraft does exist in the deep sandstone aquifer and the shallow bedrock aquifer has been overpumped locally in DuPage County. That the SSC would incrementally increase these overdrafts is true only to the extent that the SSC purchases its water from public water supplies that use the deep sandstone aquifer themselves. Many of these public water supplies, however, will likely supplement their water supply from the shallower aquifers, or from the Lake Michigan diversion (See Technical Comment GWT 011).

Technical Comment GWT 006

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Groundwater

LOCATION IN DEIS: Vol. I Chapter 4 PP 4-13 Paragraph 5

COMMENT IN REFERENCE TO: "Unconsolidated" glacial draft

TECHNICAL COMMENT:

119 The statement "Illinois and Michigan have <u>unconsolidated</u> glacial draft..." is incorrect. The glacial draft consists of several lithologies, including till an other sediments buried by till which are <u>overconsolidated</u>. Only, a very small portion of the draft could be considered unconsolidated. This change should also be made in Table 4-3, page 4-14 under hydrologic setting/Illinois and Michigan.

120 See also Technical Comment GWT 014.

Technical Comment GWT 007

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Groundwater

LOCATION IN DEIS: Vol. I Chapter 4 PP 4-15 Table 4-3

COMMENT IN REFERENCE TO: Depth-to-Water

TECHNICAL COMMENT:

121 Value given for depth-to-water is not what is reported in Volume IV, Appendix 5. (See page 31, Vol. IV, Appendix 5b).

Regarding the statement that the top of the water table is "5 to 20 feet below land surface," the latter value is more accurate.

Technical Comment GWT 008

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Groundwater

LOCATION IN DEIS: Vol. I Chapter 4 PP 4-16 Paragraph 3

COMMENT IN REFERENCE TO: Unconfined/Confined Conditions in the Drift

TECHNICAL COMMENT:

122 The last sentence of the third paragraph does not agree with what is written in Table 4-3 (see pages 4-14 under piezometric conditions/Illinois and Michigan). What is said on pages 4-16 is more accurate, and should be stated as such in Table 4-3.

Technical Comment GWT 009

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Groundwater

LOCATION IN DEIS: Vol. I Chapter 4 PP 4-20 Table 4-4

COMMENT IN REFERENCE TO: Inaccurate Lithostratigraphy

TECHNICAL COMMENT:

123 Pierre Shale is not present in Illinois (see under groundwater use/Illinois). There also appears to be some text missing between pages 4-19 and 4-20 which described the sites in Table 4-4.

The identification of Pierre Shale should be moved to describe Colorado, not Illinois.

Technical Comment GWT 010

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Groundwater

LOCATION IN DEIS: Vol. I Chapter 4 PP 4-21

COMMENT IN REFERENCE TO: Groundwater Use

TECHNICAL COMMENT:

124 The 320 wells is the number within the 1000-foot zone. It is not the number of impacted wells. Most of these wells are too shallow to be impacted. See Technical Comments GWT 001 and GWT 003.

Technical Comment GWT 011

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Groundwater

LOCATION IN DEIS: Vol. I Section 5 PP 5.1.2-29 Paragraph 1

COMMENT IN REFERENCE TO: Plans of Municipalities for Surface Water Use

TECHNICAL COMMENT:

125 It is incorrect to say that plans for municipalities to switch to surface water use are not definitive. As shown in the attached schedule, 37 suburban communities in the project area have committed to plans for delivery of 96,473 acre-feet per year (ac-ft/y) of Lake Michigan water by 1992 (well before the SSC would be in place) and 115,404 ac-ft/y by 2000. This is more than fifty times the 2178 ac-ft/y of industrial and potable water required for the SSC. As this water would largely supplant groundwater supplies currently used by these communities one can confidently assume an overall decrease in groundwater use in the region. Thus, any impact will be effectively mitigated within the time frame of the project.

LAKE MICHIGAN WATER ALLOCATIONS
DuPAGE COUNTY WATER SYSTEMS

COMMUNITY	1992 ALLOCATION (MGD)	1992 ALLOCATION (ac-ft/yr)	2000 ALLOCATION (MGD)	2000 ALLOCATION (ac-ft/yr)
ADDISON	5.115	5,730	5.655	6,335
BENSENVILLE	2.673	2,995	2.855	3,198
BLOOMINGDALE	2.154	2,413	2.808	3,146
BURR RIDGE	1.770	1,983	2.505	2,806
CAROL STREAM	3.018	3,380	3.916	4,387
CLARENDON HILLS	0.754	844	0.773	866
CUS-Arrowhead	0.221	247	0.244	273
CUS-Country Club Highlands	0.133	149	0.135	151
CUS-Lombard Heights	0.074	83	0.074	83
CUS-Valley View	0.929	1,040	1.011	1,133
DARIEN	1.595	1,787	2.057	2,304
DCDPW-Farmingdale	0.179	201	0.195	218
DCDPW-Glen Ellyn Heights	0.115	129	0.117	131
DCDPW-Hinswood	0.545	610	0.647	725
DCDPW-Lake-in-the-Woods	0.188	210	0.195	218
DCDPW-Rosewood Trace	0.442	495	0.481	539
DCDPW-Steeple Run	0.066	74	0.070	78
DOWNERS GROVE	6.740	7,551	7.785	8,721
ELMHURST	5.080	5,690	5.142	5,760
GLEN ELLYN	3.237	3,627	3.651	4,090
GLENDALE HEIGHTS	2.268	2,541	2.496	2,796
HINSDALE	2.960	3,316	3.176	3,558
ITASCA	1.250	1,400	1.650	1,848
LISLE	2.871	3,216	3.747	4,197
LOMBARD	4.815	5,394	5.541	6,207
NAPERVILLE	10.813	12,113	15.570	17,442
OAK BROOK	4.272	4,786	4.484	5,023
OAKBROOK TERRACE	0.725	812	0.971	1,088
ROSELLE	2.148	2,406	2.450	2,745
VILLA PARK	2.359	2,643	2.399	2,687
WARRENVILLE	0.042	47	0.210	235
WEST CHICAGO	3.183	3,566	4.331	4,852
WESTMONT	1.970	2,207	2.578	2,888
WHEATON	6.075	6,805	6.739	7,549
WILLOWBROOK	1.379	1,545	1.747	1,957
WOOD DALE	1.280	1,434	1.599	1,791
WOODRIDGE	2.682	3,004	3.014	3,376
TOTALS	86.120	96,473	103.018	115,403

Technical Comment GWT 012

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Groundwater

LOCATION IN DEIS: Vol. I Chapter 5 PP 5.4-1

COMMENT IN REFERENCE TO: Loss of 320 Wells

TECHNICAL COMMENT:

126 Loss of Water Wells: As discussed in Technical Comment GWT 001, only 6 to 31 existing wells are expected to be lost.

Technical Comment GWT 013

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Groundwater

LOCATION IN DEIS: Vol. IV Appendix 5.3 PP 31 Paragraph 4

COMMENT IN REFERENCE TO: Glacial drift: spelling of author's name.

TECHNICAL COMMENT:

127 Booth and Vagt not "Vaugt". It also is spelled incorrectly in the references (page 179, 5th reference).

Technical Comment GWT 014

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Groundwater

LOCATION IN DEIS: Vol. IV Appendix 5.3 PP 31 Paragraph 1

COMMENT IN REFERENCE TO: Usage of "Unconsolidated"

TECHNICAL COMMENT:

128 The glacial drift, for the most part, is overconsolidated, not unconsolidated, in an engineering sense. To be unambiguous, perhaps "unlithified" would be a better term.

See Technical Comment GWT 006.

Technical Comment GWT 015

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Groundwater

LOCATION IN DEIS: Vol. IV Appendix 5.3 PP 33 Paragraph 5

COMMENT IN REFERENCE TO: Ordovician Aquitard: inaccurate reference/thickness for Galena/Platteville.

TECHNICAL COMMENT:

129 Graese *et al*. (1988), states that the Galena-Platteville is from 300 to 380 feet thick in the region. This information and reference should replace 300 to 350 feet figure and the Woller and Sanderson (1978) reference used.

Technical Comment GWT 016

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Groundwater

LOCATION IN DEIS: Vol. IV Appendix 5.3 PP 33 Paragraph 3

COMMENT IN REFERENCE TO: Hydraulic Conductivity

TECHNICAL COMMENT:

130 As noted in Curry et al. (1988), the greatest hydraulic conductivity measured during pressurized packer tests (done in test holes drilled for evaluating the bedrock at the proposed SSC site) was in the upper part of the Maquoketa Group. At ISGS S-19, which is along the western half of the proposed corridor (see pages vi and 33 in Curry et al., 1988) the so-called "upper bedrock aquifer" often yielded values below the level of detection for the equipment used ($<10^{-6}$ cm/sec) in both Silurian dolomites and the Maquoketa Group.

Curry, B. B.; Graese, A. M.; Hasek, M. J.; Valden, R. C.; Bauer, R. A.; Schumacker, D. A.; Norton, K. A.; and Dixon, W. C., Jr. Ecological-Geotechnical Studies for Siting the Superconducting Super Collider in Illinois: Results of the 1986 Test Drilling Program." Illinois State Geological Survey Environmental Geology Notes 122. 1988.

Technical Comment GWT 017

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Groundwater

LOCATION IN DEIS: Vol. IV Appendix 5.3 PP 34 Paragraph 3

COMMENT IN REFERENCE TO: Ordovician Aquitard Hydraulic Conductivity

TECHNICAL COMMENT:

131 The lateral or horizontal hydraulic conductivity was measured as given in the references cited. Anisotropy of the hydraulic conductivity is probably present in the layered strata; the vertical hydraulic conductivity is likely less than the value given in the text, but no measurements have been made.

Technical Comment GWT 018

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Groundwater

LOCATION IN DEIS: Vol. IV Appendix 5.3 PP 34 Paragraph 6

COMMENT IN REFERENCE TO: Cambro-Ordovician Aquifer Recharge to Cambrian-Ordovician Aquifer.

TECHNICAL COMMENT:

132 The majority of recharge to the Cambro-Ordovician Aquifer may not necessarily occur through the overlying Maquoketa and Galena-Platteville units. It is more likely recharged laterally from the west where the St. Peter Sandstone subcrops along the floors of the deep bedrock aquifer (The Troy Bedrock Valley near De Kalb, Illinois, for example). Also, there may be significant recharge along the Sandwich Fault Zone.

Technical Comment GWT 019

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Groundwater

LOCATION IN DEIS: Vol. IV Appendix 5.3 PP 35 Paragraph 2

COMMENT IN REFERENCE TO: Top of Basal Bedrock Aquifer

TECHNICAL COMMENT:

133 The 2nd line should read
. . . In Kane County, <u>the top of</u> this aquifer . . .

Technical Comment GWT 020

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Groundwater

LOCATION IN DEIS: Vol. IV Appendix 5.3 PP 39 Paragraph 1

COMMENT IN REFERENCE TO: Groundwater, useage of supporting data

TECHNICAL COMMENT:

134 No references or calculations are presented to support the recharge values given in the text. This information should be presented.

Technical Comment GWT 021

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Groundwater

LOCATION IN DEIS: Vol. IV Appendix 7 PP 108 Paragraph 3

COMMENT IN REFERENCE TO: Water Levels/Overdraft

TECHNICAL COMMENT:

"Municipal use, which should be predominant, would be mostly from the latter two" (upper bedrock and Cambrian-Ordovician). There is no reason to doubt that local communities will continue developing water resources from
135 the glacial sands and gravels and are currently exploring the potential for developing this source. In addition, the "local overdrafts" mentioned on this page imply that the shallow aquifer is overpumped at the SSC site. Overpumpage of the shallow aquifer occurs locally in DuPage County only, and almost all of those communities will be switching to the Lake Michigan supplies by the year 2000. See Technical Comment GWT 011.

Technical Comment GWT 022

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Groundwater

LOCATION IN DEIS: Vol. IV Appendix 7 PP 108 Paragraph 4

COMMENT IN REFERENCE TO: Reduction in Reliance on Groundwater

TECHNICAL COMMENT:

136 This is taking place in DuPage County, where most communities are switching to Lake Michigan water. But the DEIS should also recognize that glacial sands and gravels, major materials comprising the shallow aquifer, are a relatively undeveloped resource.

137 See Technical Comment GWT 011.

Technical Comment GWT 023

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Groundwater

LOCATION IN DEIS: Vol. IV Appendix 7 PP 109 Paragraph 1

COMMENT IN REFERENCE TO:

TECHNICAL COMMENT:

138 See Technical Comments GWT 002, GWT 005, and GWT 011.

Technical Comment GWT 024

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Groundwater

LOCATION IN DEIS: Vol. IV Appendix 7 PP 112 Paragraph 1

COMMENT IN REFERENCE TO: Municipal Supply Use

TECHNICAL COMMENT:

139

1. For clarification, we suggest amending the sentence: "In 1985, the municipal supply used in Kane and DuPage counties alone was approximately 150,000 ac-ft, of which 55,000 ac-ft was from groundwater sources."

2. Most of the 320 wells mentioned in Paragraph 2 and indicated in Fig. 7-17 are shallow wells and would not be affected. Our estimate of potentially impacted wells ranges from 6 to 31. See Technical Comments GWT 001, GWT 002 and GWT 003.

Technical Comment GWT 025

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Groundwater

LOCATION IN DEIS: Vol. IV Appendix 7 PP 114 Paragraph 1,2

COMMENT IN REFERENCE TO: Water Use

TECHNICAL COMMENT:

140

1. For clarification, we recommend the following amended wording: "As noted previously, the combined present use in the site area, ..."

2. The "existing local overdraft of the proposed supply aquifers" is misleading, since the overdraft of the bedrock aquifers is in DuPage County only. Additionally, there is no overdraft of the glacial sands and gravels. See Technical Comments GWT 002, GWT 005, GWT 011 and GWT 021.

Technical Comment GWT 026

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Groundwater

LOCATION IN DEIS: Vol. IV Appendix 10 PP14 Table 10.2.3-3

COMMENT IN REFERENCE TO: Table 10.2.3-3: Infiltration Rate of Water Into the Tunnel

TECHNICAL COMMENT:

141 As stated on page 3 of Appendix 10, paragraph 3, the infiltration rates reported are averages for initial inflows during construction. Values reported by Illinois for initial inflows are 10 to 500 gallons/minute/mile or 0.2 to 10 gallons/minute/100 feet of tunnel. This is a range, low to high, not an average. From experience in tunneling in similar geologic formations in the Chicago area, when high flows were encountered, they were local and were handled by conventional grouting methods.

Technical Comment GWT 027

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Groundwater

LOCATION IN DEIS: Vol. IV Appendix 10 PP16 Paragraph 1

COMMENT IN REFERENCE TO: Stated inflow rate at shaft F3 of 5200 gal/min/100 feet or less elsewhere

TECHNICAL COMMENT:

142 Highest estimates obtained from calculations based on hydrologic data from test hole S-19 near shaft F3 are 75 gal/min/100 feet for <u>initial</u> inflow, <u>only</u> 2.2 gal/min/100 ft <u>after</u> grouting. Further, any abnormally high initial inflow rates would be controlled should any be encountered, an extremely remote possibility, based on the great mass of data available around the location of the proposed tunnel. The average tunnel inflow, based on extensive tunneling experience in similar geologic formations, is expected to be on the order of 100 gal/min/mile. The value of 5200 gal/min/100 ft is inconsistent with the <u>range</u> listed in Table 10.2.3-3 and/or all other rates listed, implied, or determined for the Illinois Site.

Information as stated in the Arizona Proposal, Volume 3, p. 77, paragraph 3, shows 1 gal/min/100 ft. in medium and hard rock. This value is 53 gal/min/mile and will require attention. Volume IV, Appendix 10, Section 10.2.3.1, page 4, Table 10.2.3-1, indicates the infiltration rate is "essentially zero" suggesting that no concerna be given to seepage.

Technical Comment HEA 001

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Health and Safety

LOCATION IN DEIS: Vol. I Chapter 3 PP 3-61 Paragraph 1

COMMENT IN REFERENCE TO: Worker training procedures

TECHNICAL COMMENT:

143 The statements regarding worker safety procedures, safety training and compliance with safety are too general. The worker safety discussion found in Volume IV, Appendix 12, Section 12.3.3, pp. 84-85, though more detailed, is still not specific enough to adequately address this issue. DOE should indicate the safety standards followed during each phase of the construction and operation of the SSC, specify the agency providing necessary safety training and specify the agency charged with enforcing safety standards. The experience of Fermilab staff and the Department of Mines and Minerals in this area is a resource that will be available during the construction and operation of the SSC.

Technical Comment HEA 002

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Health and Safety

LOCATION IN DEIS: Vol. I Chapter 5 PP 5.1.6-3 Paragraph C

COMMENT IN REFERENCE TO: Identification of Impacts and Mitigative Measures Among Alternative Sites; Routine Occupational Impacts

TECHNICAL COMMENT:

144 See Technical Comment HEA 001.

Technical Comment HEA 003

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Health and Safety

LOCATION IN DEIS: Vol. I Chapter 5 PP 5.1.6-17 Paragraph C

COMMENT IN REFERENCE TO: Identification of Impacts and Mitigative Measures Among Alternative Sites; Accident Impacts and Risks

TECHNICAL COMMENT:

145 See Technical Comment HEA 001.

Technical Comment HEA 004

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Health and Safety

LOCATION IN DEIS: Vol. I Chpater 5 PP 5.1.6-18 Table 5.1.6-4

COMMENT IN REFERENCE TO: Truck trip mileage could be reduced by inclusion of addition of other disposal sites

TECHNICAL COMMENT:

146 See Technical Comment EXC 016.

Technical Comment HEA 005

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Health and Safety

LOCATION IN DEIS: Vol. IV Appendix 10 PP 109 Paragraph 4

COMMENT IN REFERENCE TO: Available Disposal Sites

TECHNICAL COMMENT:

147 The statement that "in-state disposal facilities available for accepting SSC waste are located in Texas, Illinois and Michigan", is misleading. Because of DOE orders, Fermilab hazardous waste must be shipped to various sites around the nation for proper disposal.

It should be noted and emphasized that Fermilab already has procedures in place to deal with hazardous wastes. Thus, the wastes generated by the SSC would only be a small increase over the levels already being generated at this site. Selection of another site would mean that the waste generation would be, in large part, duplication, making the cumulative effects even larger. See Technical Comment PRP 001.

Technical Comment HEA 006

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Health and Safety

LOCATION IN DEIS: Vol. IV Appendix 12 PP 84-85

COMMENT IN REFERENCE TO: Construction/Operations Safety

TECHNICAL COMMENT:

148 Same Technical Comment HEA 001.

Technical Comment HEA 007

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Health and Safety

LOCATION IN DEIS: Vol. IV Appendix 12 PP 101 Paragraph

COMMENT IN REFERENCE TO: Construction/Operations Safety

TECHNICAL COMMENT:

149 Same Technical Comment HEA 001.

Technical Comment LND 001

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Land Acquisition

LOCATION IN DEIS: Vol. I Chapter 3 PP 3-31 Table 3-6

COMMENT IN REFERENCE TO: DEIS classification of relocations as either residence or business

TECHNICAL COMMENT:

150 See Technical Comment LND 002. Summary of Site-specific Land Acquisition plan.

Technical Comment LND 002

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Land Acquisition

LOCATION IN DEIS: Vol. I Chapter 3 PP 3-39 Paragraph 6

COMMENT IN REFERENCE TO: DEIS classification of relocations as either residence or business

TECHNICAL COMMENT:

151 The DEIS classification of the types of relocations proposed is too general. Since there is a significant difference between an industrial facility and a farming operation, a more detailed classification of the type of business relocations required should be preseted. We suggest a classification like the one presented in the Illinois proposal (i.e., Single Family Residence, Commercial, Industrial, School, Non-Profit organization, Farm complexes and Miscellaneous buildings, giving the number of parcels for each class. Also, farm complexes may not be relocated but only portions acquired.

Please refer to Site Proposal for the Superconducting Super Collider in Illinois, Volume 6, Setting (page 6.13, Table 6-6, "Potential Relocations Associated with SSC Land Acquisition").

Technical Comment LND 003

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Land Acquisition

LOCATION IN DEIS: Vol. IV Appendix 4 PP 16 Table 4-2

COMMENT IN REFERENCE TO: DEIS classification of relocations as either residence or business

TECHNICAL COMMENT:

152 See Technical Comment LND 002 AND LUS 008.

Technical Comment LND 004

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Land Acquisition

LOCATION IN DEIS: Vol. IV Appendix 4 Attachment A

COMMENT IN REFERENCE TO: Missing site locations

TECHNICAL COMMENT:

153 Parcel maps A-3C, A-3D, A-3E, A-3F, and A-3G do not include the locations of sites E8, E9, F8, F9, L2, J3, or J4. Maps A-3K and A-3L also do not show the location of J1 and J2.

Technical Comment LND 005

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Land Acquisition

LOCATION IN DEIS: Vol. IV Appendix 5-3 PP 105 Paragraph D

COMMENT IN REFERENCE TO: Development of Land Use Plans

TECHNICAL COMMENT:

154 The opening paragraph implies that state agencies are developing comprehensive land use plans for counties and municipalities when in reality planning efforts are typically more narrowly focused. Frequently, local governmental units of County and Township conduct land use and municipal planning. Such planning does occur on state-owned property. The succeeding paragraphs help to put this into proper perspective. Suggest that the introduction to this section be rewritten to clarify this.

Technical Comment LUS 001

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Land Use

LOCATION IN DEIS: Vol. I Chapter 1 PP 1-3 Paragraph 4

COMMENT IN REFERENCE TO: Public Land Used for SSC

TECHNICAL COMMENT:

155 The statement concerning land used for the SSC passing from private or state to Federal Government ownership correctly notes that some Arizona lands are already in Federal (BLM) ownership. It fails to include the fact that 6,800 acres of the required land in Illinois is already owned by the DOE and dedicated to a high energy physics facility, Fermilab. We suggest this sentence be reworded to read: "Except for portions of the Arizona site <u>and the majority of surface land of the Illinois site (6,800 acres)</u> that is already public land, ..."

Technical Comment LUS 002

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Land Use

LOCATION IN DEIS: Vol. I Chapter 3 PP 3-24 Paragraph 2

COMMENT IN REFERENCE TO: Illinois Development at Rapid Rate

TECHNICAL COMMENT:

156 The SSC may, in fact, curb development somewhat by reserving some land for parks and natural areas as Fermilab has done in its Prairie restoration program. The SSC may be viewed as essentially a Federal Park by those not directly involved with the project.

Technical Comment LUS 003

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Land Use

LOCATION IN DEIS: Vol. 1 Chapter 3 PP 3-64 Paragraph 3.6.3

COMMENT IN REFERENCE TO: Leaseback of Farmland on SSC lands

TECHNICAL COMMENT:

157 With reference to the segment entitled, "Land Use" on page 3-64, it is mentioned that agricultural land not required for SSC activities could be leased back if the respective agricultural operations would not interfere with SSC operations. It should be indicated that mitigation of this nature would be in compliance with Illinois' Farmland Preservation Act (Ill. Rev. Stat. 1987, Ch. 5 Para. 1301-1308). This statement would be consistent with the other natural resources protection references contained within Chapter 3.6.3. See also Chapter 3 - Mitigation Plan Strategies and Chapter 4 - Illinois Environmental Assessment.

Technical Comment LUS 004

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Land Use

LOCATION IN DEIS: Vol. I Chapter 3 PP 3-64

COMMENT IN REFERENCE TO: Policy to preserve farmland

TECHNICAL COMMENT:

158 Agricultural land can be preserved for agricultural uses by minimizing/reducing surface land requirements for the SSC. In the case of Illinois optimizing use of Fermilab would allow significant preservation of farmlands.

Technical Comment LUS 005

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Land Use

LOCATION IN DEIS: Vol. I Chapter 4 PP 4-71 Table 4-20

COMMENT IN REFERENCE TO: Existing Land Use in Areas Proposed for Surface Facilities

TECHNICAL COMMENT:

Table 4-20 indicates that the existing land use for Injector Area B (Near Cluster Quadrant) is public/private. In the configuration presented in the Illinois proposal, Injector Area B is all public use land under the control of the DOE (that is Fermilab land).

159 The table also characterizes existing land use at Camps Area A and future expansion Area C as public/private. No private land is proposed to be taken to satisfy these land requirements. These land requirements are satisfied by the use of the Fermilab property which is in public ownership. This adjustment was found acceptable by the U.S. DOE in the Question and Answer #467 related to the ISP. See Technical Comments PRP 007, LUS 001, and PRP 008.

Please refer to the Illinois Site Proposal for the Superconducting Super Collider in Illinois, Volume 6, Setting (page 6.11, Table 6-3, "Parcels and Estates Associated with SSC Land Areas").

Technical Comment LUS 006

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Land Use

LOCATION IN DEIS: Vol. I Chapter 4 PP 4-73 Table 4-21

COMMENT IN REFERENCE TO: Local zoning

TECHNICAL COMMENT:

160 See Technical Comment LUS 001 and LUS 001.

Technical Comment LUS 007

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Land Use

LOCATION IN DEIS: Vol. I Chapter 4 PP 4-77 Table 4-23

COMMENT IN REFERENCE TO: Acreages of farmland in fee simple areas

TECHNICAL COMMENT:

161 Approximately half of the 6,500 acres of farmland in the fee simple areas is on Fermilab property. Much of this farmland is currently cultivated under a lease back program to the farmers. See Technical Comment PRI 004.

Technical Comment LUS 008

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Land Use

LOCATION IN DEIS: Vol. I Chapter 5 PP 5.1.2-8,9

COMMENT IN REFERENCE TO: DEIS classification of relocations as either residence or businees

TECHNICAL COMMENT:

162 See Technical Comment LND 002.

Technical Comment LUS 009

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Land Use

LOCATION IN DEIS: Vol. I Chapter 5 PP 5.1.5-4 Paragraph 5

COMMENT IN REFERENCE TO: Overstatement of Affected Acreages - Typographical Error

TECHNICAL COMMENT:

163 It is apparent that the summary of acreages disturbed by construction and operation of the SSC were extracted from Vol. IV, Appendix 11 of the DEIS. On page 15 of the appendix, it is stated that "approximately 200 acres...would be permanently disturbed" and that "235 acres would be temporarily disturbed", a total of 435 acres. To be consistent, the statement in Section 5.1.5, page 4 should read "Approximately 435 acres would be disturbed..."

LETTER 1270 (CONTINUED)

Technical Comment LUS 010

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Land Use

LOCATION IN DEIS: Vol. I Chapter 5 PP 5.1.7-3 Paragraph

COMMENT IN REFERENCE TO: Assessment of land use changes - local impact

TECHNICAL COMMENT:

164 In view of the fact that land use use changes affiliated with the development of the far cluster may be significant, we recommend the discussion of this issue in paragraph B. Language which is similar to that of the first full paragraph on page 5.1.7-4 would be appropriate. See also Chapter 5 of this document which discusses a "One-Campus" alternatives for the SSC at the Illinois Site.

Technical Comment LUS 011

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Land Use

LOCATION IN DEIS: Vol. I Chapter 5 PP 5.1.7-4 Paragraph 3rd

COMMENT IN REFERENCE TO: Rural and urban character of area

TECHNICAL COMMENT:

165 A correction may be in order for the last statement of the third paragraph. From our viewpoint, the Illinois site is composed of a mixture of rural and suburban areas. Western Kane County is predominantly rural in character.

Technical Comment LUS 012

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Land Use

LOCATION IN DEIS: Vol. IV Appendix 5.3 PP 107 Paragraph 4

COMMENT IN REFERENCE TO: Typographical error

TECHNICAL COMMENT:

166 Remove ?????? before Anderson Forest Preserve.

Technical Comment LUS 013

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Land Use

LOCATION IN DEIS: Vol. IV Appendix 5b PP 107 Paragraph 3

COMMENT IN REFERENCE TO: Description of Fox River Greenbelt for the SSC

TECHNICAL COMMENT:

Suggest you change the description of the Fox River Greenbelt as follows:

167 "... River Greenbelt composed of **a number of** individual forest preserves <u>and</u> <u>parks</u> <u>linked</u> <u>by</u> <u>the</u> <u>Fox</u> <u>River</u> <u>Bike</u> <u>Trail</u> and a ...."

Technical Comment LUS 014

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Land Use

LOCATION IN DEIS: Vol. IV Appendix 5b PP 107 Paragraph 5

COMMENT IN REFERENCE TO: Correction of errors

TECHNICAL COMMENT:

168

Change descriptions of facilities as follows:

87-acre-~~Elgin~~ Elburn Forest Preserve
185-acre Johnson's ~~McLand~~ Mound
(Kane County Forest Preserve District - ~~1896~~ 1986)

Technical Comment LUS 015

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Land Use

LOCATION IN DEIS: Vol. IV Appendix 5b PP 107 Paragraph 6

COMMENT IN REFERENCE TO: Correct length of Fox River Bike Trail

TECHNICAL COMMENT:

169 Change description of the Fox River Bike Trail from 25-miles to 35-miles.

Technical Comment LUS 016

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Land Use

LOCATION IN DEIS: Vol. IV Appendix 7 PP 31 Paragraph 7.1.3.3

COMMENT IN REFERENCE TO: Need for consultation on erosion control

TECHNICAL COMMENT:

170 Local Soil and Water Conservation Districts should be consulted regarding the control of surface runoff and erosion during construction. See also Technical Comment SWQ 005.

Technical Comment LUS 017

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Land Use

LOCATION IN DEIS: Vol. IV Appendix 11 PP 15 Paragraph 1

COMMENT IN REFERENCE TO: Use of "habitat" to characterize impacted land

TECHNICAL COMMENT:

TECHNICAL COMMENT

171 The use of the word "habitat" to characterize all land which would be disturbed seems inappropriate. Simply using 'land' rather than 'habitat' would present a more accurate sense of the impacts of construction and operation.

Technical Comment NDR 001

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Natural and Depletable Resources

LOCATION IN DEIS: Vol. I Chapter 3 PP 3-60 Table 3-8

COMMENT IN REFERENCE TO: Need to differentiate impacts by site

TECHNICAL COMMENT:

172 Table 3.8 incorrectly lists only single quantities for the natural and depletable resources irreversibly committed for the SSC construction and operation. This ignores site differences and in the case of Illinois, overstates impacts. For example, with the use of Fermilab, Illinois need not commit 15,830 acres of land to the SSC. Rather, as correctly stated in a subsequent section of the DEIS (Volume IV, Appendix 4, Section 4.4.3.1) the Illinois site requires acquisition of only 3,708 acres of land in fee simple, not 7,690 acres. Combined with the required 8,140 acres of stratified fee lands, this brings the total land commitment to 11,848 acres, less land than required by the other sites.

173 Further, with the Fermilab facilities in place and considering that the Illinois tunnel will not require concrete lining, considerable reductions in requirements for cement, glass, wood asphalt, aggregate, etc. resources should also be realized. These savings should be reflected in this table.

174 See also Technical Comment NDR 004.

Technical Comment NDR 002

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Natural and Depletable Resources

LOCATION IN DEIS: Vol. I Chapter 5 PP 5.6-7 Table 5.6-3

COMMENT IN REFERENCE TO: Earth Resources

TECHNICAL COMMENT:

175 This table mistakenly gives the impression that sand and gravel and dolomite may not be abundant in the Illinois SSC area. The use of percentages lost for Illinois and the notation None abundant sources in area" for other sites may be due to Illinois more complete database which allowed computation of percentages. However, in fact sand, gravel and dolomite are abundant in northeastern Illinois and the overall impact of the SSC will be inconsequential Illinois should not be penalized for its more detailed data base

Technical Comment NDR 003

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Natural and Depletable Resources

LOCATION IN DEIS: Vol. I Chapter 5 PP 5.6-9 Table 5.6.4

COMMENT IN REFERENCE TO: Natural and Depletable Resources

TECHNICAL COMMENT:

176 This table is incorrect. The Illinois site requires only 3,708 acres of land in fee simple. The 6,800 acres of Fermilab land is already dedicated to federal use in high energy physics research and thus cannot be reasonably counted as part of the resources required. Similarly, the 850 acres of wetlands, overstates the impact to this resource significantly (see Technical Comment WET 001).

Technical Comment NDR 004

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Natural and Depletable Resources

LOCATION IN DEIS: Vol. I Chapter 5 PP 5.6-9 Table 5.6-4

COMMENT IN REFERENCE TO: Natural and depletable resources required: comparison among sites.

TECHNICAL COMMENT:

177 The Table 5.6-4 shows consumption of cement as 99,000 tons for Arizona, Colorado, and Michigan but 141.000 to 149,000 for Illinois, North Carolina, Tennessee, and Texas. It is not clear why three sites should have identical lowest tonnage number when their site-specific conditions are so different. Given Arizona's, and Colorado's need to provide 101 and 94 miles of new road, respectively, one would questions how these sites might require so little cement. It is recommended that these numbers be reviewed. If cement and other natural resources required for road improvements and other infrastructure upgrades have not been included in the assessment of each site a reanalysis is required to include this project caused impact. Moreover, cement consumption should be significantly less for the Illinois site than others because tunnel lining is not required. The number of new structures required in Illinois is reduced due to the proposed use of the Tevatron and associated structures, and most of the regional infrastructures improvements (e.g. roads) are in place. See Technical Comment NDR 001

Technical Comment PRI 001

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Prime Farmland

LOCATION IN DEIS: Vol. I Chapter 3 PP 3-54 Table 3-7

COMMENT IN REFERENCE TO: Correct acreage of farmlands

TECHNICAL COMMENT:

178 Table 3-7 identifies 163 acres of prime and important farmlands that will be converted for SSC use. Illinois was of the opinion that the 163 acre projection appeared to be somewhat understated and subsequently performed a check on this figure. As a result, it was concluded that 363 acres of prime and important farmland will be converted, due to SSC facility requirements and other projects directly related to the SSC initiative. The amended figure was derived by defining the acreage specifications dictated by the E, F, K, and J areas, and the land requirements associated with the new road construction (Volume IV, Appendix 13, Table 13-10, page 56).

Technical Comment PRI 002

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Prime Farmland

LOCATION IN DEIS: Vol. I Chapter 3 PP 3-69 Paragraph 3.7.11

COMMENT IN REFERENCE TO: Correct Acreages of Prime and Important Farmland

TECHNICAL COMMENT:

179 Please see Technical Comments PRI 001 and PRI 004 regarding the need to modify the original acreage figure for prime and important farmlands.

Technical Comment PRI 003

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Prime Farmland

LOCATION IN DEIS: Vol. I Chapter 4 PP 4-75 Paragraph 4.8.6

COMMENT IN REFERENCE TO: Definition of Prime Farmland Inventories at the SSC Proposed Sites

TECHNICAL COMMENT:

180 Paragraph number 2 should be revised to clearly define what constitutes "prime farmland" and "farmland of statewide importance." The USDA Soil Conservation Service (SCS) applies specific criteria to land for prime and important farmland determinations. It appears that the prime farmland "qualifiers" denoted in this paragraph are not consistent with the said SCS criteria. In addition, the SCS Modern Soil Surveys for Kane, DuPage and Kendall Counties will accurately depict the extent of the prime and important farmland in the proposed site area.

Technical Comment PRI 004

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Prime Farmland

LOCATION IN DEIS: Vol. I Chapter 4 PP 4-76 Paragraph 4.8.6

COMMENT IN REFERENCE TO: Prime farmland inventories at the SSC proposed sites

TECHNICAL COMMENT:

181 It may be advantageous to revise the prime farmland figures discussed in the first full paragraph. The following data were obtained from the Kane, DuPage and Kendall County Modern Soil Surveys for the proposed site area.

	Total Acres	Prime Acres	Important Acres	Other*
Land inside Fermilab	6,800	2,415	26	4,359
Land outside Fermilab	3,708	3,051	245	412
Total	10,508	5,466	271	4,741

It should also be noted that SCS soil scientists consider drainage conditions for a specific soil as the modern soil survey is conducted. Therefore it is not necessary to assign a "potential prime" designation to a specific soil.

*Other land includes - steeply sloping land, quarries, urban land and land under water.

Technical Comment PRI 005

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Prime Farmland

LOCATION IN DEIS: Vol. I Chapter 5 PP 5.1.7-6 Table 5.1.7-2

COMMENT IN REFERENCE TO: Acreages of proposed permanently converted farmlands at site alternatives

TECHNICAL COMMENT:

182 See Technical Comments PRI 001 and AGR 001.

Technical Comment PRI 006

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Prime Farmland

LOCATION IN DEIS: Vol. I Chapter 5 PP 5.2-9 Table 5.2-1

COMMENT IN REFERENCE TO: Estimated Inventories of Prime, Unique, and Important Farmlands

TECHNICAL COMMENT:

183 In order for the value 0.001 to coincide with the value (0.01) correctly reported in Chapter 3, Page 3-54, Table 3.7, it should be restated as 0.01.

Technical Comment PRI 007

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Prime Farmland

LOCATION IN DEIS: Vol. I Chapter 5 PP 5.4-1,2 Paragraph 5.4

COMMENT IN REFERENCE TO: Unavoidable adverse impacts

TECHNICAL COMMENT:

184 Please see Technical Comments PRI 001, PRI 002, and AGR 001.

Technical Comment PRI 008

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Prime Farmland

LOCATION IN DEIS: Vol. I Chapter 5 PP 5.6-9 Table 5.6-4

COMMENT IN REFERENCE TO: Required Acreage of Prime and Important Farmland in Illinois

TECHNICAL COMMENT:

185 As previously indicated on comment PRI 001, AGR 001 and PRI 003, the prime and important farmland conversion figure is 363 acres. Prime farmland comprises 322 acres and important farmland constitutes 41 acres.

Technical Comment PRI 009

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Prime Farmland

LOCATION IN DEIS: Vol. I Chapter 6 PP 6-14 Paragraph 6.2.19

COMMENT IN REFERENCE TO: The Farmland Protection Policy Act (FPPA)

TECHNICAL COMMENT:

186 The following statement should be inserted into this section (6.2.19), at the end of the first paragraph. "Since the State of Illinois also administers a farmland protection program, the SSC project and related initiatives also fall under the purview of Illinois' Farmland Preservation Act (Ill. Rev. Stat. 1987, Ch. 5, Para. 1301-1308)." See Technical Comments LUS 003 and AGR 001.

Technical Comment PRP 001

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Proposed Action

LOCATION IN DEIS: Vol. I, Chapter 1, PP 1-3, Paragraph 2

COMMENT IN REFERENCE TO: Incremental environmental consequences due to use of Fermilab

TECHNICAL COMMENT:

Throughout the DEIS, the environmental consequences associated with con-
187 struction and operation of the SSC at the Illinois site consistently ig-
nores the existing operation at Fermilab. The consequences attributable to
the SSC at the Illinois site should acknowledge that a significant propor-
tion of the requirements are already being met. Water is being used at the
188 Fermilab. The SSC will increase the use at the site, but this increase
will be considerably less than at the other sites. Waste, including
hazardous and radioactive wastes, are being generated at Fermilab. The
189 increases due to the SSC will be minor when compared with the amounts which
would be generated at the other sites plus those generated at Fermilab.

Looking at this from another perspective, the incremental increase in ef-
fects to the Nation by placing the SSC at a site other than the Illinois
190 site will mean that the Nation would incur the environmental consequences
and costs of construction and operation of the SSC plus the continued
consequences and costs of operating the Fermilab.

191 See Technical Comment CST 001 CST 004, and Chapter 6 of this document.

Technical Comment PRP 002

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Proposed Action

LOCATION IN DEIS: Vol. 1 Chapter 2 PP 2-2 Paragraph 1

COMMENT IN REFERENCE TO: Missing Text

TECHNICAL COMMENT:

192 Text does not follow from previous page. It appears some text is missing in this section.

Technical Comment PRP 003

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Proposed Action

LOCATION IN DEIS: Vol. 1 Chapter 2 PP 2-4 Paragraph 1

COMMENT IN REFERENCE TO: Use of Fermilab Tevatron

TECHNICAL COMMENT:

In this discussion of research at other accelerators, it is noted paranthetically that ". . . the Illinois proposal to use the Fermilab machine as the injector to the SSC is indicative of the magnitude of the modifications that would be required to bring an existing machine up to SSC
193 capabilities."

This wording might lead the uninformed to believe that use of the Fermilab Tevatron as the injector for the SSC is somehow technically questionable. In fact, DOE has recognized that this can be accomplished. Suggest rewording of this sentence to more clearly state that the Fermilab Tevatron is not a substitute for the SSC but can be an integral part thereof.

Technical Comment PRP 004

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Proposed Action

LOCATION IN DEIS: Vol. I Chapter 3 PP 3-4 Paragraph 4

COMMENT IN REFERENCE TO: Description of Injector Facility

TECHNICAL COMMENT:

194 The following sentence should be added to the end of the introductory paragraph describing the injector: "The elements of the proposed injector facility, in large part, are currently in place at the Fermi National Accelerator Laboratory in Batavia, Illinois."

Technical Comment PRP 005

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Proposed Action

LOCATION IN DEIS: Vol. I Chapter 3 PP 3-10 Paragraph 7

COMMENT IN REFERENCE TO: Utility Connections

TECHNICAL COMMENT:

195 We suggest adding the following sentence to paragraph 7: "Emergency telecommunication systems and a disaster recovery plan will reduce the risk exposure and impacts of service disruption under various situations."

Technical Comment PRP 006

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Proposed Action

LOCATION IN DEIS: Vol. I Chapter 3 PP 3-21 Paragraph 3

COMMENT IN REFERENCE TO: Technical Alternatives Under Consideration

TECHNICAL COMMENT:

196 Following the sentence in paragraph 3 ending "... determine whether a supplement to this EIS may be required." Suggest adding the statement: "For example, a study performed by Lederman & Teng (1987) suggests that it is technically feasible to locate all experimental areas on one campus. Early design concepts developed by the CDG have also included a "one campus" plan. See also Technical comment PRP 011.

Lederman, L.M. and L.C. Teng. 1987. A one-campus SSC, TM-1452 (SSC-N-332), Fermi National Accelerator Laboratory, Batavia, Illinois. 11 pp. (Chapter 5)

Technical Comment PRP 007

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Proposed Action

LOCATION IN DEIS: Vol. I Chapter 3 PP 3-38 Figure 3-12

COMMENT IN REFERENCE TO: Errors in surface site locations depicted in map of Illinois proposal.

TECHNICAL COMMENT:

197 The 'Project Location Map' for the state of Illinois (Figure 3-12) differs in several significant respects from the Illinois proposal. In particular, surface sites E2, E4, E7, F5, F10, J3 and J4 are shown in Figure 3-12 in locations different than those proposed for the location of these surface sites as presented in Figure 3-1(a) of the Illinois proposal. In the case of site J3, this discrepancy can be traced to a typographical error in the Illinois proposal. Table 6-5 in the 'Site Proposal for the SSC in Illinois' should state that site J3 will be moved 1,000 feet west, not 1,000 feet east. The shift to the west is represented correctly in Figure 3-1(a) of the Illinois proposal.

198 Illinois proposed to use the 6,800 acre Fermi National Accelerator Laboratory property to meet the land requirements for the campus, injector and future expansion areas A, B and C. These areas were only included in the Illinios map for reference purposes. As agreed to by DOE, these areas will be replaced by Fermilab. This should be reflected in the map of the proposed site by presenting current Fermilab boundaries and/or adding a footnote to the legend that states the A/B/C areas are proposed to be reconfigured within current Fermilab boundaries. See also Technical Comments LUS 001, and PRP 008.

Technical Comment PRP 008

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Proposed Action

LOCATION IN DEIS: Vol. I Chapter 3 PP 3-39 Paragraph 3

COMMENT IN REFERENCE TO: A, B and C areas reconfigured within final boundaries.

TECHNICAL COMMENT:

199 The term "altered use" does not aptly describe the adaption that Illinois has proposed for areas A, B, and C. According to Question and Answer #467 related to ISP, the State requested and the U.S. DOE approved, consideration of reconfiguring the A, B and C areas to be located within current Fermilab property and not extend outside of Fermilab property. Maps in the Illinois proposal show the ISP area configurations for A, B and C (i.e., the template) for reference purposes only. See Technical Comments LUS 001 and PRP 007.

Technical Comment PRP 009

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Proposed Action

LOCATION IN DEIS: Vol. I Chapter 5 PP 5-1 Paragraph 1

COMMENT IN REFERENCE TO: Negative Impacts on Illinois if Another Site is Selected

TECHNICAL COMMENT:

200 The DEIS does not provide an analyses concerning the negative impacts on Fermilab or on the Illinois Region of Influence (ROI) if another site is selected. Impacts can be significant in both cases. Since the DEIS does present worst-case scenarios for several individual impacts, it is appropriate to at least consider, for example, the likelihood that Fermilab will cease to operate at the end of its currently expected life (which would be shorter than the life that will be remaining for the SSC), or will be affected in terms of the scope of its research program, the limit to which DOE will be able to maintain the research program and its facilities at the State-of-the-Art or the extent to which Fermilab staff will gravitate full-time toward the new SSC operation during design, construction and operation. All of these Fermilab-related impacts have a subsequent secondary impact on the proposed ROI identified for the SSC.

It is recommended that both impacts to Fermilab and secondary impacts associated with siting the SSC in another state should be considered in evaluating sites other than Illinois. This permits DOE to present a more complete worst-case assessment for the other states, based on a National perspective of environmental consequence of building the SSC.

Technical Comment PRP 010

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Proposed Action

LOCATION IN DEIS: Vol. I Chapter 5 PP 5.1.2-8 Figure 5.1.2-3

COMMENT IN REFERENCE TO: Hydrologic Features - Illinois Site

TECHNICAL COMMENT:

201 Ring position is incorrect: See Vol. I, Chapter 3, Figure 3-12, p. 3-38 for correct alignment. Note tangency of Fermilab ring to SSC ring.

Technical Comment PRP 011

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Proposed Action

LOCATION IN DEIS: Vol. IV Appendix 1 PP 30 Paragraph 1, 2, 3, 6

COMMENT IN REFERENCE TO: Alternate location of K3, K4, K5, K6

TECHNICAL COMMENT:

202 The Illinois proposal 1/ suggests consideration of a single campus arrangement as discussed by Lederman and Teng, (1987). This concept would require only one campus and would reduce the land requirements and disturbance to the Kaneville at the west side of the site. The Mitigation Summary Document, included as part of this submittal of comments on the DEIS, provides DOE with a more detailed assessment of this alternative. The EIS should discuss this alternative. See Technical Comments PRP 006, PRP 008, WET 011 and Chapter 3 of this document.

1/ Geotechnical summary to the proposal to site the Superconducting Super Collider in Illinois, Illinois Department of Energy and Natural Resources P. 32 (July 1897).

Lederman, L. M. and L. C. Teng. 1987. A one-campus SSC. Fermi National Accelerator Laboratory, Batavia, Illinois. 11 pp. TM-1452 (SSC-N-332), (Presented in Chapter 5 of this document.)

Technical Comment RAD 001

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Radiation

LOCATION IN DEIS: Vol. I Chapter 3 PP 3-53 Table 3-7

COMMENT IN REFERENCE TO: Radiation - Cumulative with Fermilab

TECHNICAL COMMENT:

203 Fermilab has significant, long-term documentation of radiation levels/dosage associated with its facility and its surroundings. The State suggests that the addition of the SSC to the Fermilab surroundings, with use of the Tevatron and associated accelerator complex (including an existing fixed-target facility), will add less to radiation exposure than a totally new SSC would in Illinois.

Technical Comment RAD 002

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Radiation

LOCATION IN DEIS: Vol. I Chapter 3 PP 3-61 Paragraph 2

COMMENT IN REFERENCE TO: Design Controlled Elements of the Proposed Project -- Public Radiation Exposure

TECHNICAL COMMENT:

204 This paragraph states that a SSC project design which, includes controlling lands within 1000 ft. of the tunnel, will reduce public exposure. This is a mischaracterization of the ISP. The DOE ISP states that a stratified fee estate is acceptable if the tunnel is deeper than 50 ft. below ground surface. This then restricts land use only within 50' of the tunnel, not as stated in the DEIS, 1000 ft. Deep tunnels, as proposed in Illinois, will act to minimize radiation exposure.

Technical Comment RAD 003

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Radiation

LOCATION IN DEIS: Vol. I Chapter 4 PP 4-15 Table 4-3

COMMENT IN REFERENCE TO: Qualification of radium statement

TECHNICAL COMMENT:

205 Table 4-3 comments should make it clear that SSC water supplies will not contain troublesome radium levels.

Technical Comment RAD 084

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Radiation

LOCATION IN DEIS: Vol. I Chapter 4 PP 4-30 Paragraph 3

COMMENT IN REFERENCE TO: Contribution of cosmic radiation to natural background dose

TECHNICAL COMMENT:

206

First sentence should be corrected to read:

"The main sources of radiation dose to humans from natural background radiation are radon gas, radioactive materials in the human body, radioactive materials in the earth's crust, and cosmic rays."

The National Council on Radiation Protection in NCRP Report No. 94 entitled, "Exposure of the Population in the United States and Canada from Natural Background Radiation" lists the following average dose contributions for these sources as follows:

Radon	-	200 mrem
Internal Body	-	40 mrem
Terrestrial	-	28 mrem
Cosmic	-	27 mrem

Reference:

"Exposure of the Population in the United States and Canada from Natural Background Radiation" National Council on Radiation Protection and Measurements. December 30, 1987. NCRP Report No. 94.

Technical Comment RAD 005

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Radiation

LOCATION IN DEIS: Vol. I Chapter 4 PP 4-30 Paragraph 4

COMMENT IN REFERENCE TO: Contribution of cosmic and internal sources of radiation

TECHNICAL COMMENT:

207 The third sentence should be changed to read:

"The average annual radiation dose to an individual from cosmic rays in the United States is about 27 mrem; the dose from radon may be as much as 200 mrem; the dose from internal sources is about 40 mrem."

See Technical Comment RAD 004

Technical Comment RAD 006

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Radiation

LOCATION IN DEIS: Vol. I Chapter 4 PP 4-36 Table 4-12

COMMENT IN REFERENCE TO: Background concentrations of radionuclides in surface waters in the regions of the site alternatives

TECHNICAL COMMENT:

208 The following relevant information for Illinois may be included in Table 4-12.

	Concentrations in pCi/l
Uranium (Avg)	-
Range	
Radium 226 (Avg)	-
Range	
Gross Alpha (Avg)	1.3*
Range	0 - 3.4*
Gross Beta (Avg)	5.3*
Range	3.5 - 6.2*

* Based on analyses of Fox River water at Elgin in 1976.

Technical Comment RAD 007

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Radiation

LOCATION IN DEIS: Vol. I Chapter 4 PP 4-38 Paragraph 1

COMMENT IN REFERENCE TO: Radium Concentrations in Sandstone

TECHNICAL COMMENT:

209 It should be pointed out that the sandstones with high radium-226 concentrations will not be encountered in the SSC.

Technical Comment RAD 008

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Radiation

LOCATION IN DEIS: Vol. I Chapter 5 PP 5.1.6-11 Paragraph 1

COMMENT IN REFERENCE TO: Quantity of radioactivity in low-level radioactive waste

TECHNICAL COMMENT:

Sentence number two should be changed to read:

210 "The LLRW annual output is estimated to be 8,000 ft^3 (220m^3) containing 10 Ci."

(Vol. IV, Appendix 10, p. 99.)

Technical Comment RAD 009

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Radiation

LOCATION IN DEIS: Vol. I Chapter 5 PP 5.1.6-14 Paragraph 2

COMMENT IN REFERENCE TO: Typing correction

TECHNICAL COMMENT:

The line that reads:

211 "Ha-22 2.4 x 10^9 pCi" should read "Na-22 2.4 x 10^9 pCi."

Technical Comment RAD 010

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Radiation

LOCATION IN DEIS: Vol. I Chapter 5 PP 5.1.6-15 Paragraph 5

COMMENT IN REFERENCE TO: Annual activity of LLRW shipped

TECHNICAL COMMENT:

212 In paragraph 5, sentence 2 the quantity in parenthesis "(total of 100 Ci/yr)" should be "(total of 10 Ci/yr)."

Technical Comment RAD 011

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Radiation

LOCATION IN DEIS: Vol. IV Appendix 5.3 PP 68 Paragraph 2

COMMENT IN REFERENCE TO: Clarification of nuclear power plant releases

TECHNICAL COMMENT:

The paragraph should be changed to read:

213 "Although nuclear power stations release radioactive materials to the atmosphere during normal operation, the short half lives of those materials and the distance from the proposed SSC site precludes any significant contribution to background radiation levels at the site."

Reference: Illinois Environmental Data Submittal, Chapter 10, p. X-2.

Technical Comment RAD 012

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Radiation Sources

LOCATION IN DEIS: Vol. IV Appendix 10 PP 11 Figure 10.1.2-4

COMMENT IN REFERENCE TO: Correction of caption

TECHNICAL COMMENT:

214 The caption for Figure 10.1.2-4 appears to be wrong in that it refers to a distance of 2.6m while the text and figure delineate dose for 2.11m (35 ft). Also, the caption refers to 20 Tev protons ejected into soil while the figure is for 20 Tev protons stopped by the beam absorber.

Technical Comment RAD 013

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Radiation

LOCATION IN DEIS: Vol. IV Appendix 10 PP 16 Paragraph 2

COMMENT IN REFERENCE TO: Correction of number

TECHNICAL COMMENT:

215 The .095 km figure referred to in paragraph 2, sentence 3 should be (0.95 km).

Technical Comment RAD 014

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Radiation

LOCATION IN DEIS: Vol. IV Appendix 10 PP 30 Paragraph 1

COMMENT IN REFERENCE TO: Identification of chemical forms and quantities of gases produced by ionization

TECHNICAL COMMENT:

Environmental groups have raised the question of the possibility of the production of noxious oxygen and nitrogen compounds as a result of air ionization. The DEIS should provide technical substantiation to support the claim that this will not be a problem.

216 Information can be found in:

Jones, Lawrence W., 1986. Radiation Safety of the Superconducting Super Collider, SSC-54.

Technical Comment RAD 015

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Radiation

LOCATION IN DEIS: Vol. IV Appendix 10 PP 37 Paragraph 1-4

COMMENT IN REFERENCE TO: Reliance on Borak (1972) for contaminant leaching fractions

TECHNICAL COMMENT:

217 The assumptions made regarding leaching and migration of Na-22, Ca-45 and Mn-54 come from Borak (1972) which was developed for use under conditions existing at Fermilab. The Fermilab tunnel is surrounded by glacial till consisting mainly of silty clay. Further evidence should be supplied to support the assumption that the behavior of these radionuclides would be the same should the activation zone consist of dolomite (in Illinois) or any of the matrices at the other six sites or a new analysis done.

It should be noted that annual monitoring of groundwater and the soils over the Tevatron has indicated no increase in radioactivity since Fermilab became operational.

Borak, T.B. "The Underground Migration of Radionuclides Produced in Soil Near High Energy Proton Accelerators." Health Physics, Vol. 23, Elmsford, New York: Pergamon Journals, 1972. PP 679-687.

Technical Comment RAD 016

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Radiation

LOCATION IN DEIS: Vol. IV Appendix 10 PP 101 Table 10.1.3-15

COMMENT IN REFERENCE TO:

TECHNICAL COMMENT:

218 A site has not yet been selected for the Central Midwest Compact. Clark County is only one of two counties currently being considered. Therefore, the Planned Site Location should be changed to "Not yet located." Currently, Fermilab has established procedures for dealing with radioactive wastes. Any increase in generation of these wastes due to the SSC will become part of these established procedures. Selection of another site would require disposal of the wastes generated by Fermilab plus those generated by the SSC.

Technical Comment RAD 017

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Radiation

LOCATION IN DEIS: Vol. IV Appendix 2 PP 2-4 Paragraph 3

COMMENT IN REFERENCE TO: Spelling correction

TECHNICAL COMMENT:

219 The word "excepted" in the first sentence should be changed to "expected".

Technical Comment RAD 018

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Radiation

LOCATION IN DEIS: Vol. IV Appendix 12 PP 28 Paragraph 2

COMMENT IN REFERENCE TO: EPA Drinking Water Standard for H-3

TECHNICAL COMMENT:

220 The proposed EPA Drinking Water Standard for H-3 is 90,000 pCi/l or 90 pCi/ml. Therefore, sentence #5 should be changed to read:

"This is to be compared to the EPA standards of 0.5 pCi/ml for Na-22 (proposed) and 90 pCi/ml for H-3 (proposed)."

Technical Comment RAD 019

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Radiation

LOCATION IN DEIS: Vol. IV Appendix 12 PP 30

COMMENT IN REFERENCE TO: Assumptions used in model for possible dose from accident

TECHNICAL COMMENT:

221 The DEIS does not include the assumption that groundwater is migrating away from the tunnel. Because the tunnel also acts as a well, a nearby water supply well would be in opposition to the influence of the tunnel. Therefore, the results of the model are very conservative and unrealistic.

Technical Comment RAD 020

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Radiation

LOCATION IN DEIS: Vol. IV Appendix 12 PP 40

COMMENT IN REFERENCE TO: Doses from Multiple Release Points

TECHNICAL COMMENT:

222 The text fails to address whether any population sectors are affected by multiple airborne release pointa of radionuclides and if so, how the doses to those sectors were calculated by the CAAC codes.

Technical Comment RAD 021

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Radiation

LOCATION IN DEIS: Vol. IV Appendix 12.3.1 PP 73 Table 12.3.1-32

COMMENT IN REFERENCE TO: Incorrect or undefined units

TECHNICAL COMMENT:

223 The exposure units of (ML) for the "selected individual" appear to be incorrect. Should the units be deaths/year, as they are for lung cancer risk in the Table.

Technical Comment RAD 022

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Radiation

LOCATION IN DEIS: Vol. IV Appendix 12 PP 75 Paragraph 2

COMMENT IN REFERENCE TO: Missing Table

TECHNICAL COMMENT:

224 Table 12.2.1-2, referred to in paragraph two is missing from Appendix 12.

Technical Comment RAD 023

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Radiation

LOCATION IN DEIS: Vol. IV Appendix 12 PP 76 & 77 Table 12.3.1-34, 35

COMMENT IN REFERENCE TO: Measures of Radiological Impact

TECHNICAL COMMENT:

225 Additional explanation/clarification needs to be provided on the impact measures "Fatal Cancer Risks from all Exposures (deaths/year)" and "Life Loss from all Exposures (deaths/year)." In particular, the three orders of magnitude difference in deaths/year or the two measures is puzzling.

Technical Comment RAD 024

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Radiation

LOCATION IN DEIS: Vol. IV Appendix 12 PP 87 Table 12.4.1-2

COMMENT IN REFERENCE TO: Equivalent depth

TECHNICAL COMMENT:

226 Equivalent depth for Illinois is 88 not 8.8. See Appendix 10, Table 10.1.3-4 page 52.

Technical Comment SOC 001

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Socioeconomics

LOCATION IN DEIS: Vol. I Chapter 4 PP 4-82 & 4-83

COMMENT IN REFERENCE TO: Use of indicator - "Level of Service" (LOS) as the only indicator to define the quality of social service in the various BQL sites.

TECHNICAL COMMENT:

227 Table 4-27 in Volume 1, Chapter 4, pages 4-82 to 4-83 (see also Volume IV, Appendix 5.3, Table 5.3.1-1 and pages 136-139) presents data comparing the levels of public service in the regions of the seven BQL sites. The indicator used, called "Level of Service" (LOS), is defined as the number of employees per 1,000 population. The resultant table shows that the Illinois site has the lowest LOS for general education and health, giving a less than favorable appearance in comparison to the other sites. The use of number of employees, however, does not give a complete picture of the amount and quality of service in these areas. For one thing, health and education are not exclusively labor-intensive industries. Other statistics provide a more complete picture, and thereby realistically compare Illinois to the other sites.

For public education, several statistics are useful. These include:

1. School Expenditures, especially when controlled for population or enrollment. The attached table gives the average expenditure per pupil for each of the BQL states. It is evident that Illinois appears more committed to education based on this statistic as compared with the LOS statistic. Comparable data for the three impact counties would also be useful.

2. School enrollments and enrollment rates.

3. SAT and ACT scores as compared to national and state averages.

4. High school dropout rates.

5. The percent of high school graduates continuing on to college.

For example:

Average Current Expenditure Per Pupil in ADA,* 1987

STATE	AMOUNT (Dollars)	RANK AMONG BQL SITES (Rank Among All 50 States)
Arizona	$2,784	7 (45)
Colorado	4,129	1 (17)
ILLINOIS	3,980	2 (20)
Michigan	3,954	3 (21)
N. Carolina	3,473	5 (31)
Tennessee	2,842	6 (43)
Texas	3,584	4 (29)

*Average Daily Attendance

Source: Statistical Abstract of the United States, 1988, page 133.

More importantly, the schools in the immediate vicinity of the SSC site are established, well-supported schools. Some of the best schools in the state and the nation are in the communities where Fermilab staff currently reside and where SSC staff are likely to relocate or already reside. This is not reflected by the Level of Service indicator.

The health care service area may need to be approached differently. The LOS statistic in the EIS includes only public health care employees. As the EIS notes, this includes, "administration of local public health programs, immunization programs, health and food inspection activities, care institutions and public assistance programs for the needy, and county-operated medical care facilities which provide in-patient care." (Volume I, p. 4-82)

Due to the nature of the three impact counties (suburban, mid-to-upper incomes) there may be less of a justification and demand for these types of public health programs, and consequently few public employees are associated with these programs. Furthermore, since this LOS statistic does not include private health care service, numerous statistics could be provided indicating that the Illinois site does have excellent health care services. These may include employment (including number of physicians,

nurses, etc.), hospitals and hospital beds, expenditures (private and public), etc.

Any of these statistics, whether in the education or health area, should ideally compare the Illinois impact counties with the impact counties for the other BQL sites. A substantial amount of these data were requested by DOE and its contractors and provided by the State with the expectation that it would be used as part of the EIS development process. The State requests DOE utilize these more accurate measures of social service availability in the Final EIS.

Technical Comment SOC 002

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Socioeconomics

LOCATION IN DEIS: Vol. I Chapter 5 PP 5.2-6 Paragraph 3

COMMENT IN REFERENCE TO: Proximity to work as a choice factor for housing

TECHNICAL COMMENT:

228 It is doubtful that proximity to work will be a strong enough factor to result in competition for housing, as stated. As aeen in the attached Table, the present Fermilab workforce is evenly distributed throughout a number of communities and there is no reason to suspect SSC workers would behave differently. In fact, the larger SSC facility might have an even more disperse work force.

Technical Comment SOC 002

TABLE
Residence Distribution
Fermilab Employees

CITY	STATUS FT	PT	TP	TOTAL
	45	2	8	55
ADDISON	4	0	0	4
ALGONQUIN	1	0	0	1
AMERICUS	1	0	0	1
ANTIOCH	1	0	0	1
ARLINGTON HEIGHTS	2	0	1	3
AURDA	1	0	0	1
AURORA	505	3	4	512
AURORA IL	1	0	0	1
AURORA,	1	0	0	1
AUSTIN	1	0	0	1
BARRINGTON	1	0	0	1
BARTLETT	4	0	0	4
BATAVIA	238	5	1	244
BELLWOOD	3	0	0	3
BENSENVILLE	3	0	0	3
BERKELEY	2	0	0	2
BERWYN	4	0	0	4
BIG ROCK	9	0	0	9
BLOOMINGDALE	2	0	0	2
BOLINGBROOK	12	1	0	13
BOULDER HILL	1	0	0	1
BRIDGEVIEW	2	0	0	2
BRISTOL	4	0	0	4
BROADVIEW	1	0	0	1
BROOKFIELD	2	0	0	2
BURLINGTON	1	0	0	1
BURR RIDGE	1	0	0	1
CAROL STREAM	10	0	0	10
CAROL STREAM,	2	0	0	2
CARPENTERSVILLE	1	0	0	1
CARY	1	0	0	1
CHICAGO	35	1	1	37
CHICAGO RIDGE	1	0	0	1
CICERO	1	0	0	1
CLARENDON HILLS	1	0	0	1
COAL CITY	1	0	0	1
CORTLAND	1	0	0	1
COUNTRY CLUB HILLS	1	0	0	1
CREST HILL	1	0	0	1
CRESTWOOD	1	0	0	1
DARIEN	1	0	0	1
DE KALB	3	0	0	3
DEKALB	11	1	0	12
DES PLAINES	2	1	0	3
DOLTON	1	0	0	1
DOWNERS GROVE	32	0	0	32
ELBURN	26	1	0	27
ELGIN	25	0	1	26
ELGIN,	1	0	0	1

STATUS
FT = Full time PT = Part time TP = Temporary

Technical Comment SOC 002

TABLE
Residence Distribution
Fermilab Employees

CITY	STATUS FT	PT	TP	TOTAL
ELK GROVE	1	0	0	1
ELMHURST	13	0	1	14
ELWOOD	0	0	1	1
EMERYVILLE	1	0	0	1
EVANSTON	0	0	2	2
FICULLE (TR) ITALY	1	0	0	1
FOX LAKE	1	0	0	1
FOX RIVER GROVE	1	0	0	1
GENEVA	59	1	0	60
GENOA	1	0	0	1
GLEN ELLYN	38	1	0	39
GLENDALE HEIGHTS	5	0	0	5
GLENDALE HGTS	1	0	0	1
GLENDALE HTS	1	0	0	1
HAMPSHIRE	3	0	0	3
HANOVER PARK	3	0	1	4
HANOVER PK	1	0	0	1
HARWOOD HEIGHTS	1	0	0	1
HICKORY HILLS	1	0	0	1
HINCKLEY	3	0	0	3
HINSDALE	9	0	0	9
HOFFMAN ESTATES	1	0	0	1
HOMETOWN	1	0	0	1
ITASCA	1	0	0	1
JOLIET	38	0	0	38
KANEVILLE	2	0	0	2
KANKAKEE	0	0	1	1
LA GRANGE	3	0	0	3
LA GRANGE PARK	2	0	0	2
LA GRANGE PK	1	0	0	1
LAGRANGE PARK	1	0	0	1
LAKE FOREST	0	0	1	1
LAKE IN THE HILLS	1	0	0	1
LELAND	1	0	0	1
LEMONT	5	0	0	5
LILY LAKE	1	0	0	1
LISLE	12	0	0	12
LOCKPORT	15	0	0	15
LOMBARD	15	1	0	16
MAPLE PARK	13	0	0	13
MATTESON	2	0	0	2
MAYWOOD	6	0	0	6
MC HENRY	1	0	0	1
MELROSE PARK	2	0	0	2
MILLBROOK	1	0	0	1
MINOOKA	4	0	0	4
MONTGOMERY	45	0	0	45
MONTGOMERY.	1	0	0	1
MORAGA	1	0	0	1
MORTON GROVE	1	0	1	2

STATUS
FT = Full time PT = Part time TP = Temporary

Technical Comment SOC 002

TABLE
Residence Distribution
Fermilab Employees

CITY	STATUS FT	PT	TP	TOTAL
MT. PROSPECT	2	0	0	2
MURPHYSBORO	0	0	1	1
N AURORA	4	0	0	4
NAPERVILLE	98	0	1	99
NEW LENOX	0	0	1	1
NEWARK	1	0	0	1
NILES	2	0	0	2
NORTH AURORA	48	1	0	49
OAK BROOK	1	0	0	1
OAK FOREST	1	0	0	1
OAK LAWN	1	0	0	1
OAK PARK	6	0	0	6
OAK PRK	1	0	0	1
OAKBROOK TER	1	0	0	1
OAKLAND	1	0	0	1
OAKLAWN	1	0	0	1
OMAHA	1	0	0	1
ORLAND PARK	1	0	0	1
ORLAND PK	1	0	0	1
OSWEGO	22	1	0	23
PALOS HEIGHTS	1	0	0	1
PLAINFIELD	27	0	0	27
PLANO	8	1	0	9
POINT RICHMOND	1	0	0	1
REDWOOD CITY	1	0	0	1
RIVERSIDE	1	0	0	1
ROMEOVILLE	6	0	1	7
ROMEVILLE	1	0	0	1
ROSELLE	1	0	0	1
S ELGIN	2	0	0	2
S. ELGIN	1	0	0	1
SAN FRANCISCO	1	0	0	1
SANDWICH	17	0	0	17
SCHAUMBURG	4	0	1	5
SHERIDAN	3	0	0	3
SHOREWOOD	4	0	0	4
SKOKIE	0	0	1	1
SOMONAUK	4	0	0	4
SOUTH ELGIN	4	0	0	4
ST CHARLES	74	1	0	75
ST. CHARLES	38	1	0	39
STICKNEY	2	0	0	2
STONY BROOK	1	0	0	1
STREAMWOOD	7	0	0	7
SUGAR GROVE	19	0	0	19
SYCAMORE	1	0	1	2
TINLEY PARK	1	0	0	1
UNION	0	0	1	1
URBANA	1	0	0	1
VALPARAISO	1	0	0	1

STATUS
FT = Full time PT = Part time TP = Temporary

LETTER 1279 (CONTINUED)

Technical Comment SOC 002

TABLE
Residence Distribution
Fermilab Employees

CITY	STATUS FT	PT	TP	TOTAL
VILLA PARK	4	0	0	4
WARRENVILLE	88	4	2	94
WATERMAN	1	0	0	1
WAYNE	1	0	0	1
WESPORT	1	0	0	1
WEST CHICAGO	78	0	1	79
WESTCHESTER	2	0	0	2
WESTERN SPRINGS	1	0	0	1
WESTMONT	4	0	2	6
WHEATON	76	1	0	77
WILLOW SPRINGS	1	0	0	1
WILMINGTON	1	0	0	1
WINCHESTER	1	0	0	1
WINFIELD	12	0	0	12
WOODRIDGE	16	0	0	16
YORKVILLE	15	0	0	15
52100 AREZZO ITALY	1	0	0	1
TOTAL	2065	28	37	2130

STATUS

FT = Full time PT = Part time TP = Temporary

Technical Comment SOC 003

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Socioeconomics

LOCATION IN DEIS: Vol. IV Appendix 14 PP 96 Paragraph 1

COMMENT IN REFERENCE TO: Unemployment between 1984-1987

TECHNICAL COMMENT:

229 The first sentence is ambiguous. We suggest revision to clarify the point.

Technical Comment SOC 004

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA. Socioeconomics

LOCATION IN DEIS: Vol. IV Appendix 14 PP 126 Paragraph 7

COMMENT IN REFERENCE TO: Kane County tax revenue lost as a result of the SSC

TECHNICAL COMMENT:

The State of Illinois estimates the tax loss to all taxing bodies in Kane County to be approximately $300.000/year.

230 To address this anticipated loss, a law was enacted during the last session of the legislature providing for reimbursement by the state to units of local government of lost revenues for a five-year period. Principal and interest on bonded indebtedness will be reimbursed for the life of the bonds. It is anticipated that after the five-year reimbursement period ends that the natural increase in land values and infusion of federal SSC funds into the local enconomy will offset any loss in property tax revenue from SSC lands taken off the tax roles.

Technical Comment SOC 005

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Socioeconomics

LOCATION IN DEIS: Vol. IV Appendix 14 PP 126 Paragraph 4

COMMENT IN REFERENCE TO: DuPage County tax revenue lost as a result of the SSC

TECHNICAL COMMENT:

The State of Illinois estimates the tax loss to all taxing bodies in DuPage County to be approximately $500,000/year.

231 To address this anticipated loss, a law was enacted during the last session of the legislature providing for reimbursement by the state to units of local government of lost revenues for a five-year period. Principal and interest on bonded indebtedness will be reimbursed for the life of the bonds. It is anticipated that after the five-year reimbursement period ends that the natural increase in land values and infusion of federal SSC funds into the local enconomy will offset any loss in property tax revenue from SSC lands taken off the tax roles.

Technical Comment SOC 006

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Socioeconomics

LOCATION IN DEIS: Vol. IV Appendix 14 PP 129 Paragraph 3

COMMENT IN REFERENCE TO: Kendall County tax revenue lost as a result of the SSC

TECHNICAL COMMENT:

The annual tax loss to all Kendall County taxing bodies would be approximately $30,000, not the $400,000 noted in the draft EIS.

232 To address this anticipated loss, a law was enacted during the last session of the legislature providing for reimbursement by the state to units of local government of lost revenues for a five-year period. Principal and interest on bonded indebtedness will be reimbursed for the life of the bonds. It is anticipated that after the five-year reimbursement period ends that the natural increase in land values and infusion of federal SSC funds into the local economy will offset any loss in property tax revenues from SSC lands taken off the tax roles.

See the attached letter from the Kendall County Board concerning the error in amount of lost revenues to local taxing bodies.

In testimony before the DOE on Oct 7, 1988, Representatives of Kendall County stated that they expect a net increase in consumer tax revenues due to increased employment soon after construction commences at the Illinois site.

Technical Comment SOC 006

Kendall County Board
County Office Building
P.O. Box 549
Yorkville, Illinois 60560

September 16, 1988

Dr. Wilmot Hess, Chairman
SSC Site Task Force, ER65/GTN
Office of Energy Research
U. S. Department of Energy
Washington, D.C. 20545

Attention: SSC Draft EIS

RE: Draft EIS

Dear Dr. Hess:

We have reviewed the above documents and have some very real concerns about some of the data and assumptions outlined in both these documents and in the Draft Environmental Impact Statement, Volume I and III, Volume IV, Appendix 4 promulgated by the United States Department of Energy. Our primary concerns are with the Socioeconomic Assessments relating to the assumed impact on Public Finances of Kendall County, Illinois and on the existing and projected baseline population figures for Kendall County, Illinois.

Concerning the assumed impact of the SSC Project on the Public Finances of Kendall County, there is data presented in the Draft EIS, Volume I Chapter 5, paragraph 5.1.8.4 and Table 5.1.8-8 that would indicate that Kendall County, Illinois, along with Bedford and Marshall Counties in Tennessee would be the only counties in the United States who "would experience negative annual impacts throughout the life of the SSC". This statement for Kendall County is based upon the data shown in Table 5.1.8-8 wherein it has been assumed that Kendall County would experience a cumulative total loss in public finances of $400,000 in 1989 and $300,000 in each of the 11 subsequent years through the year 2000. This data is apparently based upon the statement in Draft EIS Volume 4 Appendix 14, page 129, and Table 14.1.3.3.3-17. The statement on page 129 states, "Annual direct tax revenue losses in the county of $400,000 would result from the loss of real property tax collections from land transferred from private to federal ownership". Table 14.1.3.3-17 shows that while Kendall County is realizing indirect revenue increases approximately $100,000 per annum, the assumed real property direct tax loss of $400,000 per year puts the county in a negative condition by the cumulative sum of $300,000 per year.

We have been advised and it has been stated to us that the SSC project would require no more than 15-16 acres of land in Kendall County. The only property required would be for 1 or 2 Service Areas, each requiring a maximum of 5.7 acres and 1 or 2 Intermediate Access Areas, each requiring a maximum of 0.9 acres. This would be a total acreage required in Kendall County of 13.2 acres. We cannot conceive of the formula used that would show Kendall County losing $400,000 in direct Real Property Tax Revenue by transferring 13.2-15.0 acres of farmland from private to federal ownership. We would

Dr. Wilmot Hess
September 16, 1988
page two

Technical Comment SOC 006

anticipate a total Real Property Tax Revenue loss of certainly no more than $10,000 per year by the removal of this 13.2-15.0 acres from the tax rolls.

Concerning the population figures and projections, we feel that the State of Illinois estimates and projections are considerably below realistic figures. The population of Kendall County, according to Federal Census figures has consistently increased as follows:

1960 - 17,540
1970 - 26,374
1980 - 37,202

Kendall County is now located adjacent to one of the most dynamic and fastest growing residential and commercial areas in the State of Illinois - the southwestern Aurora, Naperville area. As a result of being in this dynamic corridor, single family building permits in Kendall County increased from a low of 38 permits in 1982 as follows:

1983 - approximately 16% increase
1984 - approximately 25% increase
1985 - approximately 47% increase
1986 - approximately 38% increase
1987 - approximately 110% increase
(projected)1988 - approximately 103% increase

These facts, coupled with the extremely low vacancy rates which have characterized our county during the 1980's and are alluded to on page 117, Volume IV, Appendix 14, Socioeconomic Assessment, Illinois, should be very real evidence of the growth, which we are now experiencing in our county.

We feel that the figures computed in the early 1980's for population projections within the Northeast Illinois Region for Economic Data, by the State of Illinois Department of Commerce and Community Affairs, most accurately project realistic population figures for Kendall County. These figures show a population of approximately 42,439 in 1985 and a projected population of 47,739 by 1990. These figures compute to a population increase of 14% from 1980 to 1985, and 13% from 1985 to 1990. A close look and reasonable analysis of the demographic and growth patterns occurring in and around Kendall County would show a very conservative projection fo a 30-35% population increase for the period 1990-2000. A further interesting fact supporting our contention of erroneous population projections is the fact that Kendall County has a Retail Sales Growth of 9.5% in annual percent change for the period of 1980-1987. This county was surpassed in Illinois by only Schuyler County at 16.2% and Lake County at 9.6%. This is based upon figures published by the Illinois Department of Commerce and Community Affairs in the July, 1988 issue of Illinois Economic Report.

These unrealistic projections and assumptions by those responsible in the Federal Government and in the State of Illinois do a very strong disservice to Kendall County. In the first place, statements relating to the assumed negative impact of the proposed SSC upon this county reflect very badly on the competancy and diligence of the members of the Kendall County Board, who have endorsed this project and supported it in every way possible. You can be assured that the Kendall County Board very seriously considered the impact that the project would have on our county before offering our Resolution of Support to the project. Had this Board felt that the project would have

Dr. Wilmot Hess
September 16, 1988
page three

Technical Comment SOC 006

created such a negative impact on our county, or if we should discover facts htat would lead to such a conclusion at this time, we most certainly would have to reconsider our position of support.

Concerning the unrealistic population figures and projections, they provide erroneous information to local, state and federal planning agencies and greatly hamper those of us who must locally prepare for the growth and development we are experiencing now and anticipate for the near future. It is extremely difficult to arrange funding for required infrastructure expansions and improvements when state and federal agencies regard this area in a negative growth status.

We respectfully request that you review the data and the facts that led to these conclusions. If, after your review, you feel that the conclusion relating to a $400,000 annual tax loss for Kendall County, Illinois is a realistic figure, please advise us as to how the determination was made. If, after your review, you feel that an error has been made, we would greatly appreciate an addendum or a revision be published to the Draft EIS, showing a more realistic assumption. We hope that this review can be done as expeditiously and as thoroughly as possible and that the results be made available to me, personally, prior to the next public hearing to be held in Illinois.

Thank you for your consideration.

Sincerely,

Franklin B. Coffman
Chairman

FBC/vvc
CC: Congressman J. Dennis Hastert
Congressman Jack Davis

Technical Comment SOC 007

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA. Socioeconomics

LOCATION IN DEIS: Vol. IV Appendix 14 PP 131 Paragraph 3

COMMENT IN REFERENCE TO: Rural, Non-Farm Residents

TECHNICAL COMMENT:

233 There is no evidence or analysis presented in DEIS that suggests that there might be a disruption of educational activities at Kaneland School. Information relevant to the student body and capacity at Kaneland School as well as other area schools is presented in the Illinois response to BQL questions. The state recommends that the statement in the DEIS either be substantiated or deleted.

Technical Comment SWQ 001

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Surface Water

LOCATION IN DEIS: Vol. I Chapter 3 PP 3-34 Paragraph

COMMENT IN REFERENCE TO: Water Supply - Water Rights

TECHNICAL COMMENT:

234 Without conducting legal research, the question of water rights ownership becomes large in Colorado. The use of water is closely guarded. New users usually do not have superior rights to older users. The purchase of water rights will dramatically affect the surface uses of land in the area and possibly make the area unsuitable for its current uses. See Technical Comment SWQ 014.

Technical Comment SWQ 002

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Surface Water

LOCATION IN DEIS: Vol. I Chapter 4 PP 4-12 Paragraph 2

COMMENT IN REFERENCE TO: Runoff and flooding

TECHNICAL COMMENT:

235 Illinois has not proposed that ring locations "cross" streams and rivers. The proposal is for a tunnel which will be 300 to 400 feet "beneath" all streams and rivers in an aquitard and will have no impact on rivers or streams.

Technical Comment SWQ 003

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Surface Water

LOCATION IN DEIS: Vol. I Chapter 4 PP 4-19, 21

COMMENT IN REFERENCE TO: Water Rights

TECHNICAL COMMENT:

236 Acquisition of water rights and retention of water rights to lesees or holders of life estates is omitted. 237 Impact on existing land uses is omitted as is purchase of water rights. The DEIS should consider, for example, if there will be any secondary or tertiary impacts on threatened or endangered species, for example, habitat for whooping cranes and sandhill cranes in the lower Platte River. See Technical Comment SWQ 014.

Technical Comment SWQ 004

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Surface Water

LOCATION IN DEIS: Vol. I Chapter 4 PP 4-20 Table 4-4

COMMENT IN REFERENCE TO: Inaccurate lithostratigraphy

TECHNICAL COMMENT:

238 Pierre Shale is not present in Illinois (see under groundwater use/Illinois). There also appears to be some text missing between pages 4-19 and 4-20 which describes some of the sites in Table 4-4.

Technical Comment SWQ 005

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Surface Water

LOCATION IN DEIS: Vol. I Chapter 5 PP 5.1.2-2 Paragraph 5.1.2.1

COMMENT IN REFERENCE TO: Consultation Regarding Erosion Control

TECHNICAL COMMENT:

239 During design and construction of the SSC, the local Soil and Water Conservation Districts (SWCD) should be consulted regarding the control of surface runoff, drainage methods and erosion control. The SWCD's possess a high level of expertise on soil conservation issues and provide technical assistance to farmers, landowners local units of government, state and federal agencies, etc. Soil and Water Conservation Districts' jurisdiction encompasses almost every acre in the United States. A coordination scenario of this nature would serve as a very desirable mitigation strategy. See Chapter 3 - Mitigation Plan Strategies.

Technical Comment SWQ 006

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Surface Water

LOCATION IN DEIS: Vol. I Chapter 5 PP 5.1.2-9-13 Paragraph

COMMENT IN REFERENCE TO: Floodplain Encroachment

TECHNICAL COMMENT:

240 See Technical Comments SWQ 007, and SWQ 012.

Technical Comment SWQ 007

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Surface Water

LOCATION IN DEIS: Vol. I Chapter 5 PP 5.6-6 Paragraph Table 5.6-3

COMMENT IN REFERENCE TO: Sites with Facilities Proposed in Floodplains

TECHNICAL COMMENT:

241 Only one site (J6) lies partially in the floodway of the floodplain, not the four sites identified in Table 5.6-3. See to Technical Comments WET 001 and SWQ 012.

Technical Comment SWQ 008

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Surface Water

LOCATION IN DEIS: Vol. IV Appendix 5.3 PP 21 Paragraph 3

COMMENT IN REFERENCE TO: Discussion of eastern edge of drainage

TECHNICAL COMMENT:

The last sentence should be changed as below to more clearly describe the drainage.

242 "The DuPage River continues to flow south toward its union with the Des Plaines River southeast of Joliet. ~~and, finally, into the Illinois River at the confluence with the Kankakee River.~~ Continuing in a generally southeast direction, the Des Plaines unites with the Kankakee River southeast of Morris to form the Illinois River".

Technical Comment SWQ 009

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Surface Water

LOCATION IN DEIS: Vol. IV Appendix 5.3 PP 23 Figure 5.3.2-2

COMMENT IN REFERENCE TO: Surface runoff and floodplain map

TECHNICAL COMMENT:

243 The ring is not properly oriented relative to the surface features. See Technical Comment PRP 010.

Technical Comment SWQ 010

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Surface Water

LOCATION IN DEIS: Vol. IV Appendix 5.3 PP 27 Paragraph 4th

COMMENT IN REFERENCE TO: Change standard for Fecal Coliforms

TECHNICAL COMMENT:

244 The Illinois Pollution Control Board on June 30, 1988, adopted a final order which changes the general use water quality standard for fecal coliform. The statement in the EIS should now read:

> During the months May through October, based on a minimum of five samples taken over not more than a 30 day period, fecal coliform (STORET number 31616) shall not exceed a geometric mean of 200 per 100 ml, nor shall more than 10% of the samples during any 30 day period exceed 400 per 100 ml- in protected waters. Protected waters are defined as waters which, due to natural characteristics, aesthetic value or environmental significance are deserving of protection from pathogenic organisms. Protected waters will meet one or both of the following conditions:
>
> 1) presently support or have the physical characteristics to support primary contact;
>
> 2) flow through or adjacent to parks or residential areas.
>
> Waters unsuited to support primary contact uses because of physical, hydrologic or geographic configuration and are located in areas unlikely to be frequented by the public on a routine basis as determined by the Agency at 35 Ill. Adm. Code 309. Subpart A, are exempt from this standard.

Technical Comment SWQ 011

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Surface Water

LOCATION IN DEIS: Vol. IV Appendix 5.3 PP 175 Paragraph C

COMMENT IN REFERENCE TO: Clarification of statements

TECHNICAL COMMENT:

245 Delete the term "reservoirs" from the first sentence within this section. Under IDOC definition, there are no reservoirs in northeast Illinois.

246 Sentence 5 should be amended to read: The major surface water systems in the study area are the Fox River and the West Branch of the DuPage River, tributary to the Illinois and DuPage Rivers, respectively.

Technical Comment SWQ 012

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Surface Water

LOCATION IN DEIS: Vol. IV Appendix 7 PP 33-39

COMMENT IN REFERENCE TO: Drainage network, Floodplains, Facilities impacted by floodplains

TECHNICAL COMMENT:

Four facilities: F5, K4, J3, and J6 are identified to have minor to significant impact on floodplaina as shown on (Figures 7-4 to 7-7 of the DEIS. The locations depicted on the Figures are not those depicted in the Illinois proposal. The correct proposed locations for F5, J3, and J6 are shown in the revised Figures 7-4 and 7-7, attached.

F5: The proposed location, just east of Dauberman Road, will not encroach on the Welch Creek floodplain as shown in the revised Figure 7-4. (Site location specified on page 30, Appendix 1 of Vol. IV of the DEIS).

247 K4: There is no encroachment as shown in the DEIS.

J3: The site will not impact the floodplain as shown in the DEIS. (Site location specified on page 30, Appendix 1 of Vol. IV of the DEIS).

J6: This site lies wholly in the Fermilab area which is federally owned. About 54% of the area in the floodplain. However, only about 13% of the area lies in the floodway (as defined by Illinois standards depicted in the attached Figure 1. Thus, it is feasible to locate structures outside of the floodway, completely avoiding any direct impact (site location is specified on page 30, Appendix 1 of Vol. IV of the DEIS).

For the purpose of the Flood Insurance Program, the concept of floodway (Figure 1) is used as a tool to assist local communities in floodplain management. Under this concept, the 100-year floodplain is divided into a floodway and a floodway fringe. The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment

Technical Comment SWQ 012

248

in order that the 100-year flood can be carried without substantial increases in flood heights. Standards of the FIP limit such increases in flood heights to 1.0 ft. provided that hazardous velocities are not produced. However, the State of Illinois has established criteria limiting the increase in flood heights to 0.1 ft.

Only one site, J6, has any impact on the floodplain and this can be mitigated through design layout, channel diversion, or provision of a compensatory flow section.

Technical Comment SWQ 012

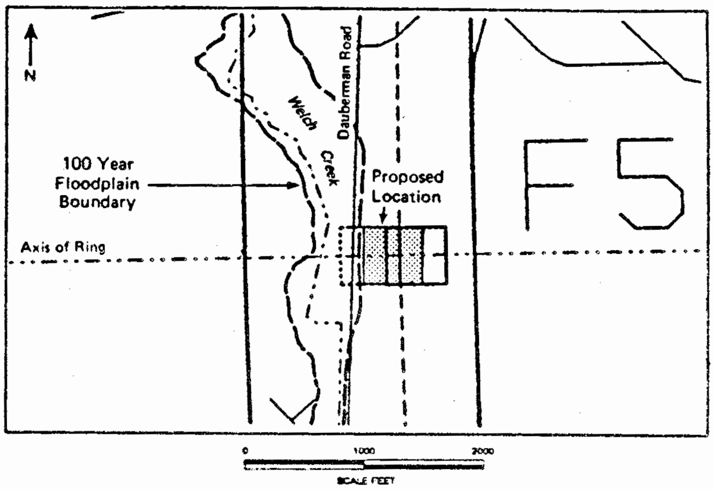


FIGURE 7-4 (DEIS Volume IV, Appendix 7, page 34)

LETTER 1279

Technical Comment SWQ 012

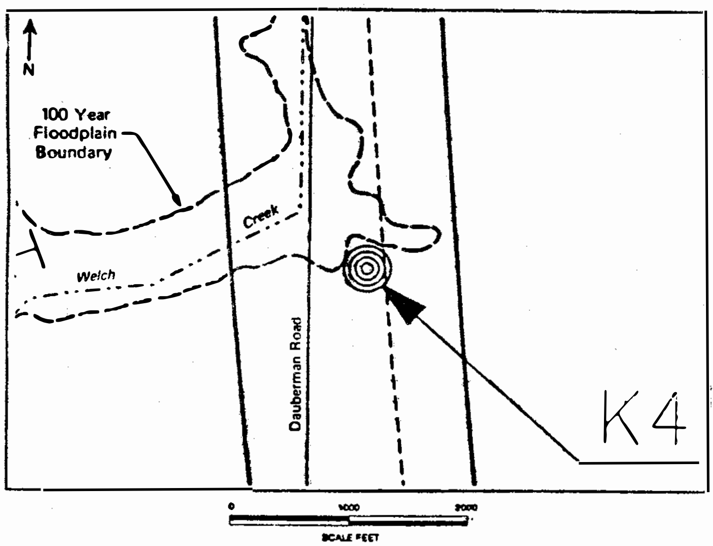


FIGURE 7-5 (DEIS Volume IV, Appendix 7, page 36)

LETTER 1279

Technical Comment SWQ 012

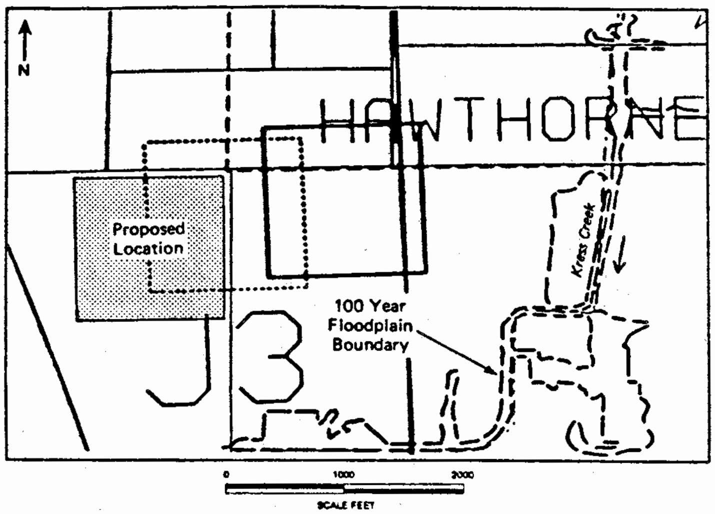


FIGURE 7-6 (DEIS Volume IV, Appendix 7, page 37)

Technical Comment SWQ 012

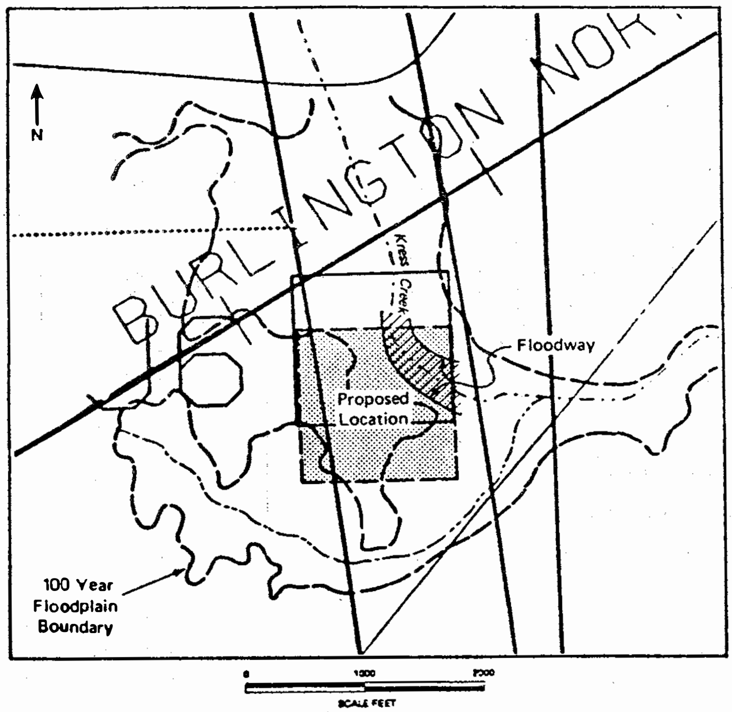
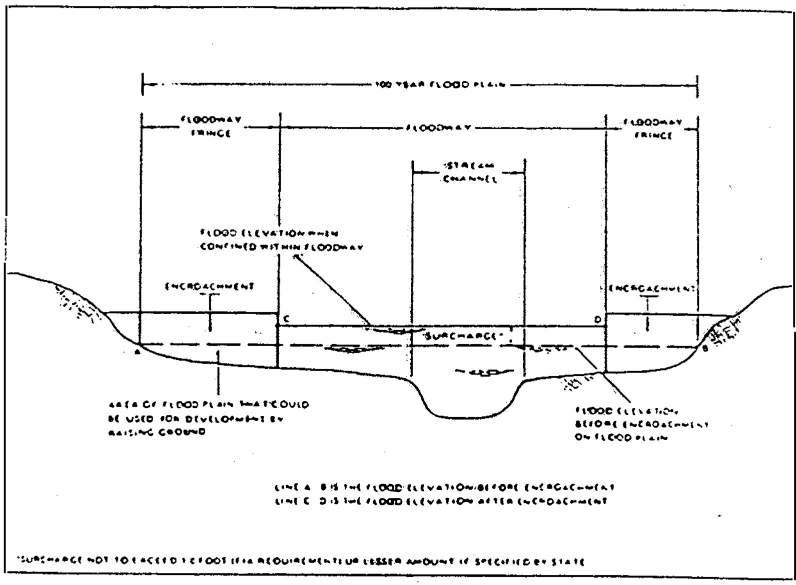


FIGURE 7-7 (DEIS Volume IV, Appendix 7, page 38)

LETTER 1279

Technical Comment SWQ 012



FLOODWAY SCHEMATIC

FIGURE 1. Floodway and Floodway Fringe

LETTER 1279

Technical Comment SWQ 013

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Surface Water

LOCATION IN DEIS: Vol. IV Appendix 7 PP 35-36 Paragraph D

COMMENT IN REFERENCE TO: Surface Erosion

TECHNICAL COMMENT:

249 See Technical Comments SWQ 005 and LUS 016. Statement pertaining to coordination with the local Soil and Water Conservation Districts is recommended.

LETTER 1279

Technical Comment SWQ 014

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Surface Water

LOCATION IN DEIS: Vol. IV Appendix 7 PP 85-106

COMMENT IN REFERENCE TO: EIS' Minimization of the Impacts of Groundwater Withdrawals in Arizona and Colorado

TECHNICAL COMMENT:

Like most western states, the states of Arizona and Coloradao follow the "prior appropriation" doctrine in regard to legal rights to water resources. This doctrine establishes a water right to the first who used water, according to the principle, "first come, first served - first in time, first in law." Subsequent or junior appropriators may not be able to establish their rights to withdraw groundwater or use surface waters, if the senior appropriators can show ngative impacts to their water sources. These principles differ from the "riparian doctrine" found in the eastern United States, including Illinois, which provides a right to a "resonable" amount of water for all landowners adjacent to streams or overlying aquifers.

250 In the prior appropriation states, no new withdrawals can be made without filing for a permit from the State Water Regulatory Authority. A permit is granted only if the authority determines that unappropriated water is available at the source, that the water will be used for a beneficial use, and that the proposed use is in the public interest. In Hall v. Keeper 510 P 2d 329, 330 (1973), the Colorado Supreme Court held that groundwater pumpers seeking to open new wells in a designated groundwater basin could not obtain permits to drill because "the flow of water from the proposed wells would reduce the amount of water reaching" a neighboring river. The EIS presents the same situation. In the Colorado discussion, it is indicated that the tributary groundwater withdrawals for the SSC operations could decrease the flow of the South Platte River (Vol IV, Apendix 7 p. 105)[1/]. Similarly, in the Arizona section, it is stated that water level/overdraft impacts from direct project water withdrawals would be

measurable and long-term, exceeding the estimated annual recharge to the basin (Vol. IV, Appendix 7, p. 96).

In prior appropriation states, senior appropriators can sell their rights to later users. A permit must still be obtained to insure that the new user is not impacting other rights to any greater degree. The negotiation process could be extensive for the SSC, given the number of rights that are likely to be needed and the potential impacts on senior users. The EIS should acknowledge in more direct terms these potential difficulties.

1/ The flow in the South Platte River, relative to preserving habitat for Sandhill Cranes and Whooping Cranes using the South Platte during the migrations, has been a significant issue relative to the Two Forks Water Supply Reservoir and the Cache La Poudre Water Supply Project in the Foothills of the Rocky Mountains.

LETTER 1279

Technical Comment TES 001

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Threatened and Endangered Species

LOCATION IN DEIS: Vol. I Chapter 1 PP 1-4 Table 1-1

COMMENT IN REFERENCE TO: Prairie Bush Clover

TECHNICAL COMMENT:

251 The common name for Lespedeza leptostachya is Prairie Bush Clover.

LETTER 1279

Technical Comment TES 002

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Threatened and Endangered Species

LOCATION IN DEIS: Volume I Chapter 1 PP 1-4 Table 1-1

COMMENT IN REFERENCE TO: Habitat Suitability

TECHNICAL COMMENT:

The suggestion in Table 1-1 that habitat for Prairie Bush Clover or the Indiana Bat would be lost due to the construction or operation of the SSC in Illinois is unfounded.

All of the surface sites have been surveyed and most are heavily disturbed, primarily by farming. The exceptions are one F site and two K sites on the Fermilab property which, even though they are undeveloped do not support suitable habitat for either Prairie Bush Clover or the Indiana Bat.

Prairie Bush Clover is restricted to dry-mesic prairie and dry gravel prairie. These types of prairie habitat are not known to occur within the proposed SSC surface sites or fee simple areas.

Prairie Bush Clover is known to occur at one site in DuPage County and one site in Cook County, 13 miles east and 16 miles north-northeast of Fermilab on the eastern side of the proposed SSC site, respectively. It is not known to occur in Kane County. This species occurs at Hinsdale Prairie, a dry-mesic silt loam prairie in east-central DuPage County (Kurz and Bowles, 1981). This species also occurs at Shoe Factory Road Prairie, a dry gravel prairie in northwest Cook County. The proposed SSC site will not impact
252 either of these known locations for Prairie Bush Clover.

Murray Prairie, identified by the Illinois Natural Areas Inventory, contains .4 acres of undisturbed dry gravel prairie but Prairie Bush Clover is not known to occur. Murray Prairie is approximately 4 miles from the proposed site in Kane County.

The Indiana Bat hibernates in caves during the winter. There are no caves on or near the proposed site. There is a remote possibility that the Indiana Bat forages in the area. Very few areas in the fee simple areas possess the potential for this type of activity and they are outside of surface sites and not expected to be disturbed. The lack of summer records of Indiana Bat captures from northeastern Illinois and the unlikelihood that Indiana Bat maternity populations inhabit developed urbanized environments further diminish the possibility that any negative impacts on Indiana Bat populations or habitats would result from the construction or operation of the SSC in Illinois.

Kurz, D. C. and M. L. Bowles. Report on the Status of Illinois vascular plants potentially endangered or threatened in the United States Nat. Land Inst., Rockford, Illinois. 1981.

Note: See attached assessment of Prairie Bush Clover habitat at the proposed site for the SSC in Illinois.

LETTER 1279

State Natural History Survey Division

ENR

Illinois Department of Energy and Natural Resources

Natural Resources Building
607 East Peabody Drive
Champaign, IL 61820
217/333-6880

September 20, 1988

Dr. Jerry Nelsen
Environmental Engineer
c/o Mack Riddle, RTK
1800 Harrison Street
P.O. Box 23210
Oakland, CA 94623-2321

Dear Dr. Nelsen:

Enclosed please find our assessment of prairie bush clover habitat at the proposed site for the SSC in Illinois. I have included a map showing the location of the Natural Areas in the area, some of which are referred to in the memorandum. More information on the natural areas is presented in Table 5-23, Volume 5 of the Site Proposal for the Superconducting Super Collider in Illinois (1987). This table refers back to Figure 5-6 in the same volume. Figure 5-6 is a simplified depiction of the map I have enclosed.

If I can be of further assistance please let me know.

Sincerely,

Mark Joselyn

MJ/cm
Enclosures

LETTER 1279

MEMORANDUM

To: Dr Jerry Nelsen
From: Mary Kay Solecki, Mark Joselyn, Eric Ulaszek
Re: lack of habitat for prairie bush clover within proposed SSC site, Illinois
Date: 20 September 1988

Prairie bush clover, *Lespedeza leptostachya*, is listed as threatened in the United States and as endangered in Illinois. In Illinois, this species is restricted to dry-mesic prairie and dry gravel prairie (Kurz and Bowles 1981). The habitats of prairie bush clover are characterized as follows by Kurz and Bowles (1981): "Dry gravel prairie occurs on steep, well-drained, usually calcareous slopes of kames, eskers, and gravel river terraces. Dominant grasses are *Andropogon scoparius* and *Bouteloua curtipendula*. Characteristic forbs include *Anemone patens, Arenaria stricta, Asclepias lanuginosa, Linum sulcatum, Lithospermum incisum, Ranunculus rhomboides,* and *Wulfenia bullii*. Dry-mesic prairie occurs on fine textured soils on steep slopes of bluffs or moraines. Dominant grasses include *Andropogon scoparius, Sorghastrum nutans,* and *Stipa spartea;* characteristic forbs include *Amorpha canescens, Echinacea pallida, Liatris aspera,* and *Potentilla arguta*." Dry mesic or dry gravel prairie is not known to occur within the proposed SSC surface sites or fee simple areas. The lack of suitable habitat makes it extremely unlikely that prairie bush clover occurs within these areas.

This assessment is further supported by the fact that all of the surface sites have been surveyed and most are heavily disturbed, primarily by farming. The exceptions are one F and two K sites on the Fermilab property which, even though they are undeveloped, do not support suitable habitat for prairie bush clover. Of the 32 surface sites (E, F, J and K) 27 are cultivated agricultural land, two are in partially wooded rural residential areas and the three remaining are those mentioned previously on the Fermilab property. These sites are characterized in the Draft Environmental Impact Statement (Volume IV, Appendix 5b, pages 114-121).

The SSC study area, comprised of 16 townships, contains seven areas recognized by the Illinois Natural Areas Inventory which contain prairie or prairie remnants (Illinois Natural Areas Inventory files). None of these fall within the footprint of the proposed SSC site, with the exception of the prairie restoration project within the perimeter of the tevatron accelerator at Fermilab, and the occurrence of prairie bush clover has never been recorded at any of these locations. One of these, Murray Prairie, contains .4 acres of undisturbed dry gravel prairie but prairie bush clover is not known to occur. Two others, Chicago NW Railroad Prairie and Vermont Cemetery Prairie support 1.3 and 1 acres of dry mesic prairie, respectively.

West Chicago Prairie, the most extensive prairie in the study area, consists of mesic and wet-mesic prairie. It does not contain the drier prairie type that prairie bush clover inhabits. According to Gerould Wilhelm (botanist, Morton Arboretum) prairie bush clover (*Lespedeza leptostachya*) is not known from West Chicago Prairie and the prairie is not the correct habitat for this plant. Over 500 species of vascular plants have been recorded from West Chicago Prairie (Gerould Wilhelm, personal communication) and prairie bush clover has never been recorded here.

The proposed SSC site encompasses one other prairie remnant known from field work. It occurs along a railroad right-of-way, is wet-mesic prairie and does not contain habitat suitable for *Lespedeza leptostachya*.

Prairie bush clover is known to occur at one site in DuPage County and one site in Cook County, 13 miles east and 16 miles north-northeast of Fermilab on the eastern side of the proposed SSC site, respectively. It is not known to occur in Kane County. Specifically, this species occurs at Hindsdale Prairie, a dry-mesic silt loam prairie in east-central DuPage County (Kurz and Bowles 1981) and at Shoe Factory Road Prairie, a dry gravel prairie in northwest Cook County. The proposed SSC site will not impact either of these known locations for prairie bush clover.

References Cited

Kurz, D.R., and M.L. Bowles.
1981. Report on the status of Illinois vascular plants potentially endangered or threatened in the United States. Nat. Land Inst., Rockford, Illinois. [unpaged report]

LETTER 1279

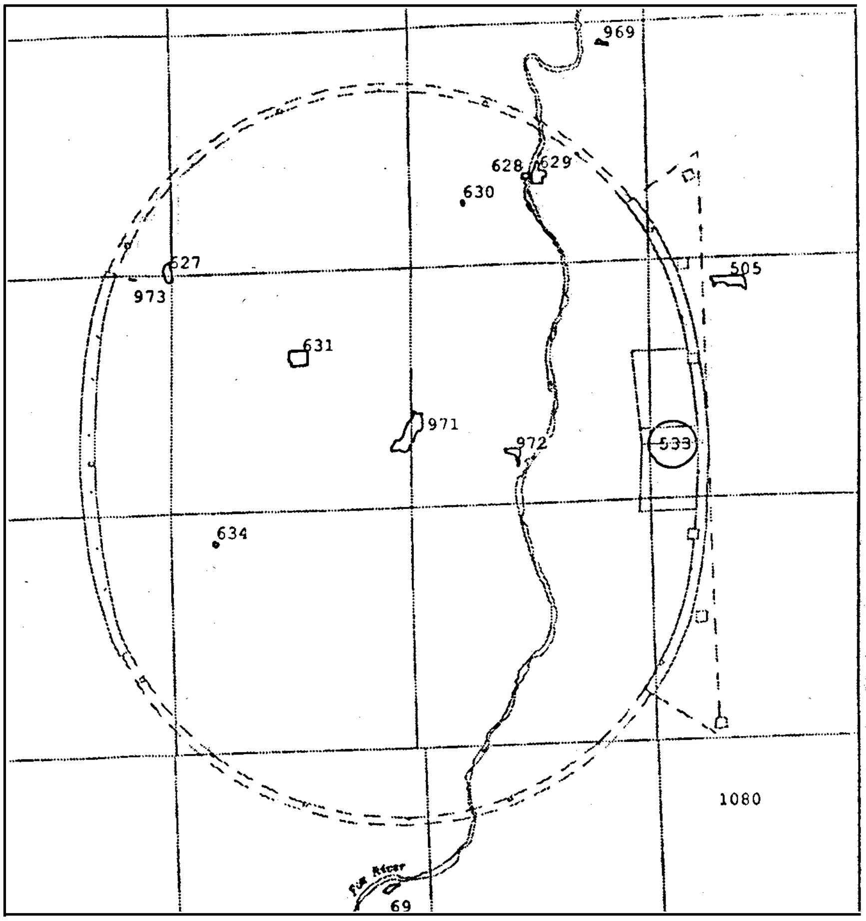


Figure 2.8 Natural Areas and the proposed SSC site

NO. COUNTY NAME
69 Kendall Yorkville Prairie
505 DuPage West Chicago Prairie
533 DuPage Fermilab Prairie Restoration
627 Kane Elburn Forest Preserve
628 Kane Ferson's Creek Sedge Meadow
629 Kane Jones Woods
631 Kane Johnson's Mound
634 Kane Kaneville Geological Area
969 Kane South Elgin Sedge Meadow
971 Kane Nelson Lake Marsh
972 Kane Mooseheart Ravine
973 Kane Chicago and NW Railroad Prairie
1080 Will Vermont Cemetery Prairie
630 Kane Murray Prairie
Source: Illinois Department of Conservation

LETTER 1279

Technical Comment TES 003

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Threatened and Endangered Species

LOCATION IN DEIS: Vol. I Chapter 4 PP 4-54 Paragraph 1

COMMENT IN REFERENCE TO: Prairie Bush Clover - Typographical error

TECHNICAL COMMENT:

253 The common name for Lespedeza leptostachya is Prairie Bush Clover, rather than prairie brush clover.

Technical Comment TES 004

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Threatened and Endangered Species

LOCATION IN DEIS: Vol. I Chapter 4 PP 4-54 Paragraph 2

COMMENT IN REFERENCE TO: Indiana Bat habitat

TECHNICAL COMMENT:

254 See Technical Comment TES 002.

LETTER 1279

Technical Comment TES 005

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Threatened and Endangered Species

LOCATION IN DEIS: Vol. I Chapter 4 PP 4-55 Table 4-17

COMMENT IN REFERENCE TO: Number of Endangered Species.

TECHNICAL COMMENT:

The threatened and endangered species identified for each of the site alternatives differs significantly from data obtained from the Endangered Species Information System (ESIS), a computer-based information system maintained by the U.S. Fish and Wildlife Service. The ESIS records, on a county by county basis, those areas where federally listed and candidate threatened and endangered species are known to occur or are likely to occur. A review of the counties proposed as hosts for the SSC revealed that some threatened and endangered species known to occur in these areas are not considered in the DEIS.

255 The major discrepencies relate to the sites in Arizona and Tennessee. The DEIS identifies a single endangered species, the Tumamoc globe-berry, at the Arizona site (DEIS, Vol, I Table 4-17). The ESIS identified this species as being likely to occur in Maricopa County. However, it lists six additional federally listed threatened and endangered species which are known to exist in Maricopa County (Table 1). The DEIS needs to consider potential impacts to these important species which are known to exist in the SSC project area at this site.

In the case of Tennessee, the DEIS identifies four threatened and endangered species (DEIS Vol. I Table 4-17). The ESIS identifies eight such species, five of which are known to exist within the four county area of the Tennessee site (Table 2). The statement that the tan riffle shell mussel may be affected (DEIS, Vol. I, pg. 4-54) should be reflected in Table 1-1.

These corrections should be noted also in the table on page 4-52 in Volume I of the DEIS.

LETTER 1279

TABLE 1

Federally listed threatened and endangered species known or likely to occur at the proposed Arizona site.

Species known to occur	Species likely to occur
Bald Eagle	Tumamoc Globe-Berry
Peregrine Falcon	
Yuma Clapper Rail	
Gila Topminnow	
Arizona Agave	
Arizona Cliffrose	

TABLE 2

Federally listed threatened and endangered species known or likely to occur at the proposed Tennessee site.

Species known to occur	Species likely to occur
Indiana Bat	Tan Riffle Shell Mussel
Birdwing Pearly Mussel	Turgid-Blossom Pearly Mussel
Tennessee Purple Coneflower	Pale Lilliput Pearly Mussel
Nashville Crayfish	
Gray Bat	

LETTER 1279

Technical Comment TES 006

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Threatened and Endangered Species

LOCATION IN DEIS: Vol. I Chapter 5 PP 5.1.5-11 Paragraph 1 and 4

COMMENT IN REFERENCE TO: Indiana bat discussion and Prairie Bush Clover comments

TECHNICAL COMMENT:

Myotis sodalis: Paragraph 1

1. This species also forages in forest canopies outside of the riparian zone.

2. Delete reference to 16 in. d.b.h. IDOC/INHS data (1985-86) indicate that *Myotis sodalis* also utilizes smaller trees for roosting.

256 3. It is likely that this species forages over areas near the site other than riparian wetlands. A survey of the site for "riparian habitat" would not be definitive in terms of *M. sodalis* presence on site.

Prairie Bush Clover: Paragraph 4.

1. Delete the last sentence in the discussion; it is not accurate as no adverse impact is indicated and thus, no mitigation is needed.

See Technical Comment TES 002. This discussion may be irrelevant.

Technical Comment TES 007

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Threatened and Endangered Species

LOCATION IN DEIS: Vol. I Chapter 5 PP 1 Paragraph

COMMENT IN REFERENCE TO: Potential Loss of Habitat for Prairie Bush Clover

TECHNICAL COMMENT:

257 See Technical Comment TES 002.

LETTER 1279

Technical Comment TES 008

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Threatened and Endangered Species

LOCATION IN DEIS: Vol. IV Appendix 5.3 PP 97 Paragraph 1

COMMENT IN REFERENCE TO: Status of Lakeside Daisy

TECHNICAL COMMENT:

258

1. The Lakeside Daisy is extinct in the wild in Illinois.
2. This species is now listed as threatened by the State.
3. Change Table 5.3.9-12 to reflect above change.
4. Change Table 4-17 (Vol. I, Ch. 4) to reflect above change.

Technical Comment TES 009

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Threatened and Endangered Species

LOCATION IN DEIS: Vol. IV Appendix 5.3 Table 5.3.9-12 PP 98

COMMENT IN REFERENCE TO: Federal threatened and endangered listing table.

TECHNICAL COMMENT:

259 Add "forest" to habitat type for Myotis sodalis. IDOC/INHS data (1985-88) clearly demonstrate the occurrence of this species in forest communities.

Technical Comment TRN 001

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Transportation

LOCATION IN DEIS: Vol. I Chapter 3 PP 3-39 Paragraph 4

COMMENT IN REFERENCE TO: "Few transportation and infrastructure improvements proposed" because few needed

TECHNICAL COMMENT:

260 As stated in the Illinois Proposal Illinois has an extensive transportation system already in place in and adjacent to the proposed site In Vol. 4, of the Illinois Site Proposal Regional Resources, Illinois proposed site specific improvements that would facilitate construction of the SSC and improve employee access during operation. When compared to the less developed sites of Arizona and Colorado, fewer transportation and infrastructure improvements were proposed in Illinois because fewer are needed.

Technical Comment TRN 002

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Transportation

LOCATION IN DEIS: Vol. I Chapter 3 PP 3-58 3-59 Paragraph Table 3-7

COMMENT IN REFERENCE TO 1-lane road

TECHNICAL COMMENT

261 In Table 3-7 "Impacts of Constructing and Operating the SSC on Site Alternatives", the DEIS shows Illinois with 1 mile of 1-lane road As stated in the Illinois Site Proposal, Vol. 4, Regional Resources access roads to be constructed will be designed as 2-lane, paved roads.

See also Technical Comment TRN 005, TRN 015, TRN 016, and TRN 017.

Technical Comment TRN 003

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Transportation

LOCATION IN DEIS: Vol. I Chapter 4 PP 4-90 Paragraph 5

COMMENT IN REFERENCE TO: Ridesharing programs in the area

TECHNICAL COMMENT:

262 The DEIS states that ridesharing programs "do not extend out to the proposed site areas." In Illinois Fermilab established a ridesharing program in conjunction with the Chicago Area Transportation Study's (CATS) CARS 3 program in 1986. They have approximately 150 Fermilab employees entered in the CATS data base. Additionally, several other large employers in the proposed site area participate in the CATS Rideshare Program. i.e., Nalco Chemical, Amoco, AT&T, Waste Management, Dow Jones, and DuPage County employees. Employees are not limited to finding a match within their own company. Employees from all of the large employers in the proposed site area with similar work routes and work hours can be matched by the CATS computer, thereby increasing the opportunity for a rideshare match. Future SSC employees and construction workers will be able to take advantage of this existing program.

Technical Comment TRN 004

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Transportation

LOCATION IN DEIS Vol. I Chapter 4 PP 4-90 Paragraph 1

COMMENT IN REFERENCE TO. Access to Mississippi Waterways

TECHNICAL COMMENT:

263 The Illinois site has access not only to the Great Lakes/St. Lawrence Seaway but also through the Chicago River/Sanitary Ship Canal and Illinois River to the Mississippi, Ohio and Tennessee River Systems, and the Gulf of Mexico.

Technical Comment TRN 005

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Transportation

LOCATION IN DEIS: Vol. I Chapter 5 PP 5.1.8-28 Table 5.1.8-9

COMMENT IN REFERENCE TO: "New 1-lane road" should not exist in Illinois; all roads will be paved, 2-lane roads (minimum design)

TECHNICAL COMMENT:

264 In Table 5.1.8-9 "Comparison of Transportation Impacts During Construction at Proposed SSC Sites", the DEIS shows one mile of one-lane road. No one-lane roads are proposed. See Technical Comments TRN 002, TRN 016, and TRN 017.

Technical Comment TRN 006

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Transportation

LOCATION IN DEIS· Vol. I Chapter 5 PP 5.1.8-27 Paragraph 4

COMMENT IN REFERENCE TO: E&F Level of Service on state routes due to spot problems and do not occur on entire route length identified

TECHNICAL COMMENT:

Measuring the traffic impacts of a development such as the SSC is a complex task. The direct impacts at entrances to the site proper and roadways adjacent to the site are relatively straight forward. However, as you proceed further from the site the art of forecasting is less precise. This is especially true for a site such as the Fermilab site where urban, suburban and rural demographics co-exit. Our review of the transportation impacts indicate that the information presented (especially that in Tables 14.2.1-5 and 14.2.1-6) are reasonable reflections of the traffic and indicate isolated pockets of congestion in the area within 10 miles of the site. It should be noted however that in most cases these congested links are relatively short and are due to commercial land uses adjacent to the roadway (e.g. State Route 64 through downtown St. Charles and U.S. Route 34 adjacent to the Fox Valley Mall).

265 SSC generated traffic will have little impact on these areas. In fact, the mature nature of the roadway network should help disperse SSC related traffic throughout the area with little impact to the use of any one roadway.

Finally, the level of transportation investment in fast growth areas such as in this area of Illinois tends be to dynamic, responding to the rapidly changing character of development. In the proposal $57 million of highway improvements were identified for the SSC study site. These improvements included projects specific to the SSC as well as projects planned for the 1988-1992 period regardless of whether the SSC is constructed at the Illinois site. This investment is dwarfed by the annual and multi-year highway program already budgeted for the Chicago area (IDOT District 1). Between Fiscal Years 1984 and 1989, the highway investment program for

District 1 exceeded $350 million annually, or 38% of the state's highway program. While specific investment levels or projects cannot be guaranteed by the state, it would seem likely that growing congestion problems such as those identified by the DEIS for the year 2000 would be addressed through this on-going investment program. This is particularly true of U.S. 34 which was not originally considered by the State as influencing the SSC site selection. An engineering study of this route is included in the current 1989-1993 Highway Program as the initial step toward responding to traffic congestion issues. Similarly, other long-term projects are just now being considered. As an example, the Fox Valley Freeway which would serve as a major north-south artery for traffic in the SSC site area is currently being considered for inclusion in the 2010 Plan for the Chicago area. To exemplify the on-going program to meet the transportation demands arising in the proposed project area, several projects are currently under construction. Projects recently completed or under construction include extension of the Route 53 expressway from I-190 south to Joliet, widening and resurfacing of Randall Road between Route 64 and the Fabyan Parkway, a new interchange at Orchard Road and I-88, and a new commuter train station at Route 59 near the Fox Valley Shopping Mall in Aurora.

Technical Comment TRN 007

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Transportation

LOCATION IN DEIS: Vol. I Chapter 5 PP 5.1.8-29 Table 5.1.8-9

COMMENT IN REFERENCE TO: Airport Modifications

TECHNICAL COMMENT:

266 Footnote 10 states that the proposed DuPage County general aviation air field is located in stratified fee areas. From reports that IDOT has received on the planned expansion of DuPage County Airport, the runways, as presently designed, are located in area G which will be fee simple rather than stratified fee as stated in the DEIS. However, the planned airport expansion will have no effect on the SSC or vice versa. As stated on page 5.1.8-32 of the DEIS, the impacts to the airfield "would be negligible because construction and operation activities would occur below ground in these areas."

Technical Comment TRN 008

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA Transportation

LOCATION IN DEIS Vol. I Chapter 5 PP 5.1.8-30 Table 5.1.8-10

COMMENT IN REFERENCE TO: Direct traffic impacts on roads

TECHNICAL COMMENT:

This analysis ignores normal program investment beyond the existing 5-year period. (See Technical Comment DOT 065). Recently, the average annual highway investment in the IDOT District 1 jurisdiction has represented 38
267 percent of the statewide program (approximately $350 million each year). While exact funding levels in future years can not be determined at this time, continuation of this level of investment seem likely given the rapid growth in the area.

Technical Comment TRN 009

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Transportation

LOCATION IN DEIS: Vol. I Chapter 5 PP 5.1.8-32 Paragraph 3

COMMENT IN REFERENCE TO: DuPage airport expansion plans

TECHNICAL COMMENT:

268 See Technical Comment TRN 007.

Technical Comment TRN 010

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Transportation

LOCATION IN DEIS: Vol. I Chapter 5 PP 5.1.8-32 Paragraph 1

COMMENT IN REFERENCE TO: Rail spur

TECHNICAL COMMENT:

If a rail spur is needed during the construction phase the Illinois Department of Transportation has indicated that it could be located in a north-south corridor east of Dauberman Road. The exact location of the spur alignment has not been determined, but if this alignment disrupted the existing farming operations, the Department would propose an alignment east along the section line (where property ownership boundaries tend to exist) to mitigate this disruption.

269 In addition, the construction of a rail spur will disrupt existing drainage patterns. With regard to surface drainage, all construction activities must comply with state law which requires existing drainage patterns to be maintained. All plans and specifications for the rail spur will adhere to this requirement. Also the state will investigate potential methods to control erosion caused b the conversion of sheet runoff to concentrated flow. One potential method that could be considered is to riprap the ends of culverts to reduce the velocity of the concentrated flow.

For subsurface drainage, the standard construction specifications will provide for maintaining existing tile drainage patterns. Exploration trenches will generally be excavated along the right-of-way to find drainage tiles before earth-moving activities begin. Care will be taken during construction operations to avoid destruction of farm field-tile systems. Tile systems will be maintained to preserve existing drainage patterns.

Technical Comment TRN 011

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Transportation

LOCATION IN DEIS: Vol. IV Appendix 5.3 PP 149-153

COMMENT IN REFERENCE TO: Level of service analysis

TECHNICAL COMMENT:

270 See Technical Comment TRN 006.

Technical Comment TRN 012

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Transportation

LOCATION IN DEIS. Vol. IV Appendix 5.3 PP 154 Paragraph 6

COMMENT IN REFERENCE TO: DuPage airport expansion plans

TECHNICAL COMMENT·

271 See Technical Comment TRN 007.

Technical Comment TRN 013

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Transportation

LOCATION IN DEIS: Vol. IV Appendix 5.3 PP 155-157

COMMENT IN REFERENCE TO: Ridesharing program discussion

TECHNICAL COMMENT:

272 See Technical Comment TRN 003.

Technical Comment TRN 014

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Transportation

LOCATION IN DEIS: Vol. IV Appendix 9 PP 46-50 Paragraph Text

COMMENT IN REFERENCE TO: "Highly - Annoyed" Noise can be Reduced through Dispersion and Reduction of Traffic.

TECHNICAL COMMENT:

273 See Technical Comment EXC 016. Noise and vibration can be mitigated by reducing traffic through use of greater on-site storage capacity and/or distributing spoils to more disposal sites.

Technical Comment TRN 015

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Transportation

LOCATION IN DEIS: Vol. IV Appendix 14 PP 31 Paragraph 5

COMMENT IN REFERENCE TO: One-lane, gravel roads

TECHNICAL COMMENT:

274 The statement "Roads to intermediate access areas would be gravel roads" is incorrect and should read paved instead of gravel. No Illinois roads proposed for the SSC will have a gravel surface; all will be paved.

Technical Comment TRN 016

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Transportation

LOCATION IN DEIS: Vol. IV Appendix 14 PP 32 Fig. 14.2.1-4

COMMENT IN REFERENCE TO: One-lane, gravel roads

TECHNICAL COMMENT:

275 In the Figure 14.2.1.-4 "Site Access Roads Proposed by Illinois", Drawing AR-3 depicts the E points as having 1-lane, unpaved roads. This is incorrect. All roads will be a minimum of 2-lane and will be paved whether they be access, entrance or driveway type. In all cases where the drawing AR-3 (as identified in Figure 14.2.1-4) appears, it should reflect the changes from 1-lane unpaved to 2-lane, paved.

Technical Comment TRN 017

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Transportation

LOCATION IN DEIS: Vol. IV Appendix 14 PP 33 Paragraph 3

COMMENT IN REFERENCE TO: Miles of road construction and improvement

TECHNICAL COMMENT:

276 The Illinois Site Proposal, Vol. 4, Regional Resources, p. 4.7, Table 4-3 outlines the State's planned highway improvements for the SSC. The DEIS incorrectly states that 4 miles of 4-lane highway will be constructed; however 4 miles of Butterfield Road will be upgraded to 4-lanes. The DEIS refers to construction of 3 miles of 2-lane roads and 3 miles of 2-lane highway. The Illinois proposal states that approximately 6 miles of 2-lane (paved) roads will be constructed as access roads. The DEIS refers to construction of 1 mile of new 1-lane road. If this in reference to what the DEIS refers to as the 1-lane road at the E points, this is incorrect. The E points will also be served by 2-lane (paved) roads as are the F points. The DEIS is correct in saying that 20 miles of 2-lane road will be upgraded.

See also Technical Comments TRN 015 and TRN 016.

Technical Comment TRN 018

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Transportation

LOCATION IN DEIS: Vol. IV Appendix 14 PP 34-39

COMMENT IN REFERENCE TO: Level of service analysis

TECHNICAL COMMENT:

277 See Technical Comment TRN 006.

Technical Comment TRN 019

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Transportation

LOCATION IN DEIS: Vol. IV Appendix 14 PP 39 Paragraph 8

COMMENT IN REFERENCE TO: Rail crossings of 3 upgraded facility access

TECHNICAL COMMENT:

278 For clarification. three existing roads, designated for upgrading to handle transport of excavated material to disposal sites, cross existing rail lines. However, none of the proposed access roads from the E and F points to the existing road system crosses existing rail lines.

Technical Comment TRN 020

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Transportation

LOCATION IN DEIS: Vol. IV Appendix 14 PP 39-40 Paragraph 2A

COMMENT IN REFERENCE TO: Rail spur

TECHNICAL COMMENT:

279 See Technical Comment TRN 010.

Technical Comment TRN 021

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA. Transportation

LOCATION IN DEIS: Vol. IV Appendix 14 PP 41 Paragraph 1

COMMENT IN REFERENCE TO: DuPage Airport expansion plan

TECHNICAL COMMENT:

280 See Technical Comment TRN 007.

Technical Comment TRN 022

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Transportation

LOCATION IN DEIS: Vol. IV Appendix 14 PP 42 Paragraph 5

COMMENT IN REFERENCE TO: Proposed bus service for the SSC

TECHNICAL COMMENT:

281 Suburban bus service is operated by PACE, which maintains an extensive network of bus routes in the Fermilab area. Possible route adjustment may be possible if sufficient ridership demand exists. For example, an extension of the Warrenville feeder (Route £ 679) to the Fermilab campus might be extended to provide peak hour service. This possibility, however, may be more appropriately considered for the operations phase of the project, rather than the construction phase.

Technical Comment UTL 001

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Utilities

LOCATION IN DEIS: Vol. I Chapter 4 PP 4-91 Paragraph 1

COMMENT IN REFERENCE TO: Electric power, natural gas and telecommunications.

TECHNICAL COMMENT:

282 The three prominent utilities that would serve the SSC in Illinois are Commonwealth Edison, Northern Illinois Gas and Illinois Bell Telephone.* Each utility has independently submitted comments on the DEIS. The State has reviewed these comments and found them to be appropriate and consistent with State information related to the topics cited in their responses. The comments submitted by the utilities as are attached for convenient reference.

* Comment not received in time for inclusion in this document.

Commonwealth Edison
72 West Adams Street, Chicago, Illinois
Address Reply to: Post Office Box 767
Chicago, Illinois 60690 - 0767

September 30, 1988

Mr. Thomas M. Jacobius
Technology & Market Planning
IIT Research Institute
10 West 35th Street
Chicago, Illinois 60616-3799

Dear Tom:

Enclosed is a copy of Commonwealth Edison's comments on the Draft Environmental Impact Statement for the SSC.

If you have any questions, please call me on 294-2890.

Yours truly,

Wayne

Wayne Zessin

0192S/dlg

Encl.

Superconducting Super Collider
Commonwealth Edison Company
Comments Concerning
Draft Environmental Impact Statement

Item 1

Volume IV Appendix 5b
Section 5.3.11.2.B.1.b (page 157)

Existing wording:

> **Commonwealth Edison supplies electricity to 3 million customers (approximately 8 million people) in Chicago and northern Illinois. The 11,252-mi service area extends into 25 counties and contains nearly 400 municipalities, including 702 of the state's population (Zessin 1988). Figure 5.3.11-5 delineates the boundaries of the Commonwealth Edison service territory.**

Comments:

283 Apparent typographical error, "702" in second sentence should read "70%."

Superconducting Super Collider
Commonwealth Edison Company
Comments Concerning
Draft Environmental Impact Statement

Item 2

Volume IV Appendix 5b
Section 5.3.11.2.8.1.e (page 159)

Existing wording:

e. Planned Future Upgrades/Additions

Commonwealth Edison recently announced a construction budget of $3.65 billion for the period 1988-1992. The new budget continues an overall downward trend that has prevailed since the spending plan peaked at $5.85 billion for the period 1981-1985. No new generating stations are planned prior to the late 1990s, as it is believed there is an abundant capacity to handle growth. Planned expenditures will be applied to operating generating stations as well as the reinforcement of transmission and distribution systems (Commonwealth Edison 1987).

Comments:

284 The statement that "No new generating stations are planned prior to the late 1990s ..." is not correct. The 1988-1992 construction budget includes costs for the completion of Braidwood Unit 2. In fact, the unit was declared in-service on August 5, 1988.

The table of Edison Generating Plants (Table 5.3.11-11, page 160) is current as of December 31, 1987 and does not include Braidwood Unit 2. Consequently, the unit should be considered as additional capacity after 1987.

Superconducting Super Collider
Commonwealth Edison Company
Comments Concerning
Draft Environmental Impact Statement

Item 3

Volume I Chapter 4
Section 4.9.2.2.A (page 4-91)

Existing wording:

> The majority of electric utilities have planned for future additions to generating capacity. The exception is Illinois, which has projected that it has sufficient capacity to handle near-term growth. For most states, additional capacity is due on-line by the mid-1990's. For Michigan, it is due by the end of 1988; for Arizona, it is due by 2005.

Comments:

285 The sentence, "The exception is Illinois, which has projected that it has sufficient capacity to handle near-term growth," should be eliminated. While it is true that Illinois has sufficient generating capacity, the sentence implies that no new additions to generating capacity are planned. As discussed in item 2, the 1100 MW Braidwood Unit 2 was put on line in 1988. Since the time of reference of this paragraph is 1987, the Braidwood unit should be considered additional capacity. Likewise, the beginning of the last sentence should be changed to read "For Illinois and Michigan, it is due by the end of 1988;".

Superconducting Super Collider
Commonwealth Edison Company
Comments Concerning
Draft Environmental Impact Statement

Item 4

Volume I Chapter 4
Table 4-30 (page 4-92)

286

Existing wording:

Parameter	Existing Wording: Illinois	Should Read: Illinois
Electricity		
Capacity of serving Utility (MW)	21,000	21,400
Future Upgrades/ Additions (MW)	None Planned	1,100 (by 1988)

The reason for revising the capacity figure is that 21,400 is the correct rounded sum of existing station capacities as shown in Volume IV, Appendix 5b, Table 5.3.11-11 (page 160).

The future addition shown is for Braidwood Unit 2. It should be shown for the reasons discussed in Item 2.

Superconducting Super Collider
Commonwealth Edison Company
Comments Concerning
Draft Environmental Impact Statement

Item 5

Volume IV Appendix 4
Section 4.4.3.5 (pages 22 and 23)

Existing wording:

4.4.3.5 Acreage Requirements for Proposed Ancillary Facilities

Illinois proposes to construct a small number of ancillary facilities in support of the SSC project (see Volume IV, Appendix 1, Sections 1.2.3.8-1.2.3.15), some of which will require the acquisition of additional acreage for new construction. These new facilities that require additional rights-of-way or easements include:

- One partial and one complete tollway interchange
- 3.5 mi of new access roads
- A 0.8-mi railroad siding
- 1.5 mi of 138kV transmission line

Table 4-3 lists the acreage requirements needed to construct these facilities. A total of 27 acres are needed, which includes 16 acres for roads, 5 acres for the railroad siding, and 6 acres for the transmission line and miscellaneous utilities.

Comments:

Commonwealth Edison does not require additional right-of-way to construct the 1.5 miles of 138kV transmission line. It is intended to build this line along existing public highway right-of-way (Dauberman Road). The listed reference to transmission right-of-way and the statement that 6 acres are required for transmission work should be revised. The 6 acres are needed for miscellaneous utilities only.

287 Accordingly, Table 4-3 (page 17) should also be revised.

	Existing Wording:			Should Read:		
State	Total	Electric Transmission	Water	Total	Electric Transmission	Water
Illinois	27	6[b]	b	27	0	6[b]

Footnote "b" should be changed from "All utilities" to "All utilities except electric power."

Superconducting Super Collider
Commonwealth Edison Company
Comments Concerning
Draft Environmental Impact Statement

Item 6

Volume IV Appendix 14
Section 14.2.2.C.1.a.3 (page 119)

Existing wording:

> Commonwealth Edison, being a member system of the Mid-America Interconnected Network (MAIN), is considered in MAIN assessments of system capabilities and operations. MAIN currently has 48,053 MW of generating capacity and 12,110 MW of reserves. In 1996, MAIN is projected to have 7,949 MW of reserve generating capacity. This capacity is backed up by the regional transmission interties to neighboring electric utility systems.

Comments:

The data used in this paragraph can be found in the report entitled "MAIN - Regional Reliability Council Coordinated Bulk Power Supply Program - Department of Energy - Code 1E-411," filed by Commonwealth Edison on April 1, 1987. Subsequently, a more recent report was filed by Edison on April 1, 1988.

The updated numbers are as follows: current generating capacity of MAIN, 46,788 MW; current reserves, 10,309 MW; 1996 projected reserve, 8,205 MW.

288 Also the following paragraph, found on page 120, can be updated.

> The generating reserve criterion used in MAIN provides that the utilities should maintain a capacity margin of at least 13 to 17%. This figure was determined to be applicable for conditions expected in MAIN during the forecast period 1987-1996. A capacity margin of 18% is projected for 1996.

Based on the previous discussions, the last sentence of this paragraph should show a capacity margin of 17% rather than 18%.

Superconducting Super Collider
Commonwealth Edison Company
Comments Concerning
Draft Environmental Impact Statement

Item 7

Volume IV Appendix 14
Section 14.2.2.C.1.a.3 (page 120)

Existing wording:

> Four new nuclear units with a total capacity of 4,310 MW are expected to be placed in commercial operation and join the MAIN network by 1988. With these four new units generating capacity scheduled for 1996 should be adequate for reliable supply to the projected peak demand. No major additional units are now planned for service during the 1989-1996 period.

Comments:

289 The four new nuclear units referred to in this paragraph have been placed in commercial operation. The remainder of the paragraph is still appropriate.

Superconducting Super Collider
Commonwealth Edison Company
Comments Concerning
Draft Environmental Impact Statement

Item 8

Volume IV Appendix 14
Section 14.2.2.C.1.a.3 (page 120)

Existing wording:

> Since there is believed to be an abundant capacity to handle growth, Commonwealth Edison plans no new generating stations for the next several years. Planned expenditures in their latest construction budget are slated for operating generating stations, and reinforcing the existing transmission and distribution systems.

Comments:

290 This paragraph uses as a reference, generating capacity installed as of 1988. As such it is correct since it is assuming Braidwood Unit 2 is in service. This is in contrast to generating capacity previously discussed in Items 2, 3 and 4, in which the reference is generating capacity installed as of 1987. Perhaps it should be noted that such a change in reference has taken place, since it could result in some confusion to the reader.

Superconducting Super Collider
Commonwealth Edison Company
Comments Concerning
Draft Environmental Impact Statement

Item 9

Volume IV Appendix 14
Section 14.2.2.C.1.a (last paragraph), b, and c (pages 120-122)

Comments:

Commonwealth Edison will have sufficient capacity to meet SSC requirements in 1997 and beyond. The effects of such factors as the possible impact of future regulatory actions dealing with acid rain, and the uncertainties of load forecasts are unknown at this time. However Edison is committed to maintaining not only the necessary generating capacity as required by its customers (including the SSC), but also providing sufficient reserve capacity as well.

291 In assessing the needs for future generating capacity, Edison will pursue all options available at the time the decision must be made. One such option, as described in the DEIS is to defer the planned retirement of certain generating units.

Additionally, it is felt that the indicated loads for the SSC, and secondary loads, are overstated in the DEIS as they pertain to siting the SSC in Illinois. The reason for this is Fermilab. The current electrical demand at Fermilab is approximately 60 MW. This load, and the secondary load due to current Fermilab employes, will overlap with the loads expected for the SSC. Although the amount of overlap is not known, the net increase in demand on the Edison system should be less than the 200 MW and 11 MW shown for SSC and secondary loads on the DEIS.

NORTHERN ILLINOIS GAS

One of the NICOR basic energy companies

P.O. Box 190 Aurora, Illinois 60507-0190 Phone 312 983 8888

September 26, 1988

Mr. John S. Herrington
Secretary of Energy
United States Department of Energy
Washington, D.C. 20545

Dear Mr. Herrington:

Northern Illinois Gas (NI-Gas) has reviewed the draft Environmental Impact
Statement (EIS) for the proposed Superconducting Super Collider (SSC),
document DOE/EIS-0138D, Volumes I, III and IV, dated August 1988. The
292 purpose of NI-Gas' review was to examine those sections of the draft EIS
containing input provided by NI-Gas relative to its existing and/or proposed
infrastructure for purposes of servicing natural gas energy to the SSC.

The majority of NI-Gas' information supplied to DOE for the EIS report is
contained in Volume IV Appendix 5b of 16 (pages 159 and 161). NI-Gas finds
the information contained within this section to be correct to the best of
293 its knowledge. NI-Gas believes that its existing and proposed infrastructure
has little or no impact on the environment of the proposed Illinois site.

NI-Gas, one of the largest natural gas utility companies in the United
States, is prepared to serve the SSC with clean, low cost and dependable
supplies of energy into the foreseeable future. Four interstate pipeline
294 companies provide natural gas to NI-Gas under long-term contracts. As a
result of a prudent gas purchasing policy and a vast underground storage
system, NI-Gas' customers pay less per therm than most consumers across the
country.

Should you have any questions regarding this response, please contact NI-Gas at the above address.

Sincerely,

J. Robert White
Manager Industrial Development

bcc: Tom Jacobius, IITRI
T. J. Brennan, NI-Gas
J. R. Cookingham, NI-Gas
M. E. Musial, NI-Gas

Technical Comment WST 001

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Waste Disposal

LOCATION IN DEIS: Vol. IV Appendix 5.3 PP 74 Table 5.3.8-1

COMMENT IN REFERENCE TO: Available publicly owned treatment facilities

TECHNICAL COMMENT:

The table (Table 5.3.8-1) lists sewage treatment facilities that are likely
to be impacted by the direct and indirect growth of the SSC. It does not
include all sewage treatment plants within 30 miles of the ring as the text
295 indicates. If the EIS were to include all such plants, the West South West
Water reclamation Plant of the Metropolitan Sanitary District of Greater
Chicago, which has a design capacity of 1200 million gal/d, and a remaining
capacity approaching 400 million gal/d, would have to be included, among
others.

Technical Comment WST 002

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Waste Disposal

LOCATION IN DEIS: Vol. IV Appendix 10 PP 2 Paragraph 4

COMMENT IN REFERENCE TO: Cooling tower blow down stream

TECHNICAL COMMENT:

The use of vacuum compression brine concentrator units and side stream
softening may not be necessary. The industrial community of Illinois has
296 successfully met effluent standards and water quality criteria through the
application of management practices and careful selection of antifouling
agents.

Technical Comment WST 003

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Waste Disposal

LOCATION IN DEIS: Vol. IV Appendix 10 PP 4,7 Paragraph C

COMMENT IN REFERENCE TO: The Illinois Solid Waste Proposal

TECHNICAL COMMENT:

Landfill Impacts

The solid waste disposal capacity information developed in the DEIS appears to accurate and defendable. The statewide waste generation volume for 1987 is anticipated to be close to that of 1988, which was 52 million cubic yards.

297 Specific solid waste disposal capacity in the immediate region of the proposed project is adequate to handle the estimated 30,000 cubic yards that will be generated annually. While several of the smaller permitted landfills in the area have a remaining estimated disposal capacity of five years or less (Engstrom-Dekalb, Sexton-Will Co., Land and Lakes - Will Co.), Settlers Hill in Kane County has a remaining capacity of 22,677,190 cubic yards, and a remaining useful life of approximately 12 years. In addition, new disposal capacity for solid waste is being established in Will County through the development or conversion of sites already having met state permit requirements.

The quantity of solid waste projected to be generated by the SSC facility is not anticipated to be of sufficient volume to adversely impact remaining capacity of existing landfill facilities in the region, nor will it, on its own accord, necessitate the construction on new landfill sites or expansion of existing sites. Solid waste generated by current operation of Fermilab would account for the majority of that expected from the SSC.

Recycling Potential

A major component of SSC's solid waste will likely be office paper (computer paper, ledger, notepads, etc.) and corrugated paper. These materials are readily recyclable. The State of Illinois will assist SSC personnel in establishing a facility-wide waste paper recovery and reclying program. Markets for wastepaper are currently very good and are projected to remain steady for at least the next several years. We estimate that, conservately, 25% of the estimated 30,000 annual cubic yards of solid waste to be generated by the operation of the SSC could be readily recycled. This amounts to 2,275 tons of recyclable paper, having a projected economic value of $80,000, $137,000 a year. Markets in the Chicagoland area for various grades of mixed wastepaper and segregated grades of higher grade paper are excellent. There are twelve primary manufacturers of various paper products in Northern Illinois that are end users of wastepaper generated by SSC.

In addition, numerous paperbrokers are located in Illinois that purchase various grades of wastepaper for local and regional markets. Other recyclable or reusable materials generated by SSC construction and operation include scrap ferrous metals, aluminum beverage containers, glass containers, specialty packaging materials, plastic packaging and containers. The recovery of these materials would be dependent of the quantities generated by the development of specially designed collection programs, the degree of contamination present in these waste streams, available markets, and the economics and avoided disposal costs recyling/reuse in comparison with landfill disposal only.

Technical Comment WET 001

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Wetlands

LOCATION IN DEIS: Vol. I Chapter 1 PP 1-4 Table 1-1

COMMENT IN REFERENCE TO: Proported Impact to 850 Acres of Wetlands

TECHNICAL COMMENT:

In Table 1-1, Volume I, and throughout the DEIS, the statement that 850 acres of wetlands will be lost in Illinois is inconsistant with the data available and present land use. Table 1A (attached) is provided to show the distributaion of wetland acreage at the proposed Illinois SSC site. Experience in wetland mangement and identification is extensive in Illinois and the Final EIS prepared by DOE should reflect the inventory presentd herein.

298 With the exception of the Fermilab property, very few acres of wetlands fall within sites where construction is planned and all of these have already been degraded or modified by human activity. Good quality wetlands are abundant at the proposed site in Illinois in large part because of the existence of the Fermilab National Accelerator Laboratory where considerable effort hs been expended to recreate and sustain wetland habitats. Assuming that management practices will not drastically change, the use of the proposed land for the SSC would represent minimal change in the present land use on the Fermilab site. For this reason it is expected that, with the possible exception of new construction for facilities, most of the wetlands on the site would not be threatened or lost. Fermilab's 6,800 acres represent roughtly two thirds of all land offered in fee simple. If the current mangement policies of the DOE at Fermilab are extended to new SSC properties, the use of additional lands for the SSC would most likely result in a net increase in the quality and quantity of wetlands in northeastern Illinois.

Less than one acre of good quality wetland habitat (DEIS Figure 5.1.5-2) not presently disturbed by agricultural cultivation (at site J6) falls within any of the 32 surface sites (E, F, J, and K). This particluar wetland is 2 acres in total size and less than half of it lies within site J6. Further, its hydrology has already been altered by human activity and facilities placement will avoid further impact.

The remaining wetlands falling within any of the 32 surface site total 5.7 acres at sites E1, J2, J4, and J5. All of these wetlands are presently impacted by farming and, as such, represent low quality habitat (See Technical Comments AGR 005 and AGR 006).

The State of Illinois has proposed the use of the existing Fermilab property to satisfy the land requirements for the East Campus area. Due to this substitution the amount of land "offered" exceeds, by some 2,800 acres, the land requirements specified in the ISP. This is important in assessing the acreages of wetlands lying within fee simple areas. Due to laudable management practices a substantial number of wetlands exist on the Fermilab property (1,029 acres according to the USFWS National Wetlands Inventory). This includes cooling ponds and other surface waters associated with operating the facility as well as the substantial high quality habitat in the wetlands complex within the Tevatron accelerator. Some 775 acres (75.5%) have been modified by human activity, including 44 acres impacted by farming.

Thus, all references to wetland disturbance at the Illinois proposed SSC site should be amended to reflect the distribution of inventoried wetlands as given in the attached table. Inconsistencies throughout the DEIS in the assessment of wetland impacts need to be addressed to properly reflect the proportion of wetlands to the entire project. For example, Table 3-2, Appendix 11, page 15, projects that a total of 435 acres of land would be disturbed during construction. Given the virtual absence of wetlands at surface sites (Table 1) the statement that 100 acres of wetlands could be disturbed implies that 25 to 33 percent of all lands disturbed are wetlands and is contradictory with the known inventory. As the data suggest, the greatest potential for impact to wetlands exists in the construction of campus facilities due to the relative abundance of this habitat on the Fermilab property. However, as noted earlier, proper management combined with a final campus design that considers wetland occurrence will make it very unlikely that a significant amount of wetlands will be permanently impacted.

In summary, 650 acres of wetlands will not be lost at the Illinois site and no wetlands exist in the areas identified as access or service areas which have not been previously impacted by agricultural practices or other human activities.

Further, Section 1.4 of Volume I of the DEIS, states it may be possible to mitigate residual impacts (e.g. wetlands) through modifications to the final site design. As discussed in Section 4.2.4, "Wetlands" of Volume 3, Environmental Assessment, of the State of Illinois BQL data submittal (Chapter 4 of this document), there are options available to avoid wetland impacts and the State is committed to mitigate any impact on wetlands by the construction of surface facilities (see also Volume 5, Environmental, of the Illinois Site Proposal).

TABLE 1A

Acreages of wetlands at the proposed Illinois SSC site

Feature	Total Acres Feature	Total Acres Wetlands	Wetland Acres Modified by Human Activity
Fermilab	6,800.0	1,029.0	778.00
Surface sites			
E1	1.0	0.37	0.37
J2	40.0	0.04	0.04
J4	40.0	3.29	3.29
J5	40.0	1.69	1.69
J6	40.0	1.19	.30
Other fee simple areas			
G*	1,528.0	164.1	69.55
H	1,980	18.95	8.45

*G area falling outside Fermilab property

Figures based on the USFWS National Wetlands Inventory

Technical Comment WET 002

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Wetlands

LOCATION IN DEIS: Vol. I Chapter 1 PP 1-4 Table 1-1

COMMENT IN REFERENCE TO: Wetland acreage in fee simple areas

TECHNICAL COMMENT:

299 See Technical Comment WET 001

Technical Comment WET 003

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Wetlands

LOCATION IN DEIS: Vol. I Chapter 3 PP 3-52 Table 3-7

COMMENT IN REFERENCE TO: Impact for Illinois

TECHNICAL COMMENT:

300 The table title is Impacts of Constructing and Operating the SSC On Site Alternatives. Table title should read "Potential Impacts ----" as Illinois plans to avoid impacts to threatened and endangered species and wetlands through judicious placement of service facilities. Until a final configuration is completed, all the impacts are potential rather than actual at this stage of planning the project.

Technical Comment WET 004

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Wetlands

LOCATION IN DEIS: Vol. I Chapter 3 PP 3-61 Paragraph 6

COMMENT IN REFERENCE TO: Consultation Procedures for Potential Wetland Damage

TECHNICAL COMMENT:

301 Michigan is the only site mentioned here. Illinois would also consult with the DOE relative to mitigation of wetlands. This sentence should be amended to include the State of Illinois.

Technical Comment WET 005

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Wetlands

LOCATION IN DEIS: Vol. I Chapter 3 PP 3-68

COMMENT IN REFERENCE TO: Wetland acreage and presence at surface sites

TECHNICAL COMMENT:

302 See Technical Comment WET 001

Technical Comment WET 006

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Wetlands

LOCATION IN DEIS: Vol. I Chapter 4 PP 4-66, 4-67 Paragraph 5

COMMENT IN REFERENCE TO: Consistency reference

TECHNICAL COMMENT:

303 See Technical Comments WET 015, BIO 008, BIO 010 and WET 016

Technical Comment WET 007

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Wetlands

LOCATION IN DEIS: Vol. I Chapter 5 PP 5.1.5-7

COMMENT IN REFERENCE TO: Potential Dewatering of the Surface Water Resources

TECHNICAL COMMENT:

304 The surface waters, including wetlands, adjacent to shafts, will not be affected during construction as Illinois has already made provision to avoid this. As stated in the Geotechnical Summary to the Proposal to Site the Superconducting Super-Collider in Illinois (July, 1987), a slurry-trench cutoff wall can be placed around the perimeter of each shaft prior to excavation, essentially precluding any problems with dewatering of surface waters.

Technical Comment WET 008

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Wetlands

LOCATION IN DEIS: Vol. I Chapter 5 PP 5.1.5-14 Paragraph 3

COMMENT IN REFERENCE TO: Misrepresentation of impacts in fee simple areas

TECHNICAL COMMENT:

305 The statement that "Wetlands comprise about 11 percent of approximately 850 acres where surface facilities would be constructed" clearly misrepresents the potential impacts to these areas. A proper assessment would simply state that this quantity of wetlands lie within the fee simple areas, which appears to be the intent of this statement. Estimates of the total acreage to be affected by the entire project range from 320 acres (Table 3-2) of which 200 acres is projected as temporary, to 435 acres, of which 235 is temporary (Vol. IV, Appendix 11, page 15).

Few wetlands (less than 7 acres outside the campus area), none of high quality, are in or near areas where construction is anticipated. This is discussed in more detail in Vol. 5 of the Illinois Site Proposal; in the Illinois responses to the BQL questions; and in Vol. III, Environmental Assessment Supplementing the Illinois responses to the BQL questions (Chapter 4 of this document). See Technical Comments WET 001 and WET 007.

Technical Comment WET 009

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Wetlands

LOCATION IN DEIS: Vol. I Chapter 5 PP 5.1.5-14 Paragraph 4

COMMENT IN REFERENCE TO: Impact to Wetlands Adjacent to Construction Sites

TECHNICAL COMMENT:

306 The statement that "Wetlands that are not directly on construction sites but adjacent to them could also realize some adverse impacts during construction" is a true statement. It demands, however, that some assessment be provided as to the likelihood of this occurring. No data are provided to suggest that construction sites tend to be adjacent to wetlands areas. In fact, with the exception of the campus area where no site design has been done and site J6, it seems very unlikely that any wetlands of even moderate quality would be affected due to their proximity to construction sites.

Technical Comment WET 010

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Wetlands

LOCATION IN DEIS: Vol. I Chapter 5 PP 5.1.5-15 Figure 5.1.5-1

COMMENT IN REFERENCE TO: Map of wetlands near campus

TECHNICAL COMMENT:

307 Figure 5.1.5-1 does not depict any of the existing infrastructure on the Fermilab property as suggested in the text on page 5.1.4-14, para. 3. We suggest that a map of the existing Fermilab facilities be overlain on the figure to demonstrate their relationship to the wetland areas.

Technical Comment WET 011

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Wetlands

LOCATION IN DEIS: Vol. I Chapter 5 PP 5.1.5-16 Figure 5.1.5-2

COMMENT IN REFERENCE TO: Omission of 2 acre Palustrine Emergent wetland at Site J6

TECHNICAL COMMENT:

308 Figure 5.1.5-2 showing wetlands at site J6 fails to depict a 2 acre palustrine emergent wetland area, 0.9 acres of which lies within the western edge of the 40 acre surface site. This is the only wetland which falls within any of the 32 surface sites (E, F, J, and K sites) which is not affected by farming. Even this site has been hydrologically altered.

309 See Technical Comments WET 010 and AGR 006.

Technical Comment WET 012

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Wetlands

LOCATION IN DEIS: Vol. I Chapter 5 PP 5.2-4 Paragraph 2

COMMENT IN REFERENCE TO: Wetland acreage affected by surface facilities

310 TECHNICAL COMMENT: See Technical Comment WET 001

Technical Comment WET 013

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Wetlands

LOCATION IN DEIS: Vol. I Chapter 5 PP 5.4-1

COMMENT IN REFERENCE TO: Loss of Wetlands

311 TECHNICAL COMMENT: See Technical Comment WET 001

Technical Comment WET 014

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Wetlands

LOCATION IN DEIS: Vol. I Chapter 5 PP 5.6-5 Table 5.6-2

COMMENT IN REFERENCE TO: Wetlands at Surface Sites

TECHNICAL COMMENT:

312 See Technical Comments WET 009 and WET 001.

Technical Comment WET 015

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Wetlands

LOCATION IN DEIS: Vol. IV Appendix 5.3 PP 80 Paragraph C

COMMENT IN REFERENCE TO: Inconsistent reference to wetland ecotypes

TECHNICAL COMMENT:

313 Suggest that the wetland ecotypes presented here reflect those presented in the Illinois' Supplement to the Site Proposal, Vol. 3, Environmental Assessment, Sec. 4.2.4., p. 38 (Chapter 4 of this document).

Technical Comment WET 016

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Wetlands

LOCATION IN DEIS: Vol. IV Appendix 5.3 PP 88 Paragraph 1

COMMENT IN REFERENCE TO: Definition and description

TECHNICAL COMMENT:

Marshes are found not only near waterways and lakes, but also in isolated, upland areas.

314 Degradation occurs from drainage, siltation from non-point soil erosion and placement of dredge and fill material within the wetland. (See Technical Comment AGR 006).

Characteristic marsh plants include Swamp milkweed, common cattail, softstem bulrush, river bulrush, and rice cutgrass.

Change "sedge meadow" to "wet meadow."

Technical Comment WET 017

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Wetlands

LOCATION IN DEIS: Vol. IV Appendix 5.3 PP 102 Paragraph C

COMMENT IN REFERENCE TO: Add transition zone

TECHNICAL COMMENT:

315 The wetland are also a transitional environment between upland and deep-water habitat, and should be incorporated into the list. Also, because much of the area in northeast Illinois is cultivated, we recommend consideration to add: Agricultural/wetland transition.

Technical Comment WET 018

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Wetlands

LOCATION IN DEIS: Vol. IV Appendix 11 PP 2 Paragraph 5

COMMENT IN REFERENCE TO: Assessment of Quality of Potentially Affected Wetlands

TECHNICAL COMMENT:

316 It is explicitly stated that the "location, extent and quality of potentially affected wetlands" will be provided in the analysis. In fact, no assessment of the quality of the wetlands falling within the surface sites at the Illinois site is offered in the DEIS. The quality of wetlands occurring in the vicinity of the Illinois site is discussed in detail in Vol. 5 of the Illinois Proposal and in the Illinois responses to the BQL questions and Supplemental information. In addition, it appears that the only quantitative assessment of wetland acreages contained in the DEIS is the figure of 850 acres which is assumed to be the totallity of wetland habitat falling within the fee simple areas.

The State's assessment of wetlands, based on the USFWS National Wetlands Inventory, has identified less than 7 acres of wetlands falling within all of the 32 surface sites (E, F, J and K). Of these 6+ acres, less than one acre is not presently disturbed by farming. Please see Technical Comment WET 001.

Technical Comment WET 019

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Wetlands

LOCATION IN DEIS: Vol. IV Appendix 11 PP 4 Paragraph 1

COMMENT IN REFERENCE TO: Difference in impact to surface land due to existence of HEB (Tevatron).

TECHNICAL COMMENT:

317 In characterizing the differences between sites, the existence of the Tevatron accelerator should be noted. The reduced level of potential impact at the Illinois site should be considered in the same manner as is the increased impact due to cut-and-cover construction at the Arizona site. This reduced potential impact, relative to other sites, is explicitly acknowledged in Table 3-2 of Volume I, Chapter 3 which projects that the area which would be disturbed in Illinois is 200 acres less because of the existence of the Tevatron. Not only should this exception be noted but, more importantly, it should be reflected in the subsequent analyses.

Technical Comment WET 020

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Wetlands

LOCATION IN DEIS: Vol. IV Appendix 11 PP 17 Paragraph 2

COMMENT IN REFERENCE TO: Hydrologic effects on wetlands of pumping and seepage

TECHNICAL COMMENT:

318 The suggestion that construction activities could affect wetlands due to seepage and pumping of water from shaft construction is not supported. In particular, the assumption that wetlands at sites E1, J2, J4, and J5 could be adversely affected by seepage and pumping suggests that the quality and character of wetlands in these areas has not been taken into account in the analysis of possible impacts. The wetlands at these sites are all self-contained, are not part of larger wetland complexes or riverine complexes, and all are presently impacted by farming. The impact of farming includes cultivation, siltation and drainage network due to agricultural practices (sea Technical Comments IDA 020 and IDA 022). These areas are already, and will continue to, undergo impacts similar to that which the environmental assessment suggests would result from construction.

319 See Technical Comments WET 007, and WET 001.

Technical Comment WET 021

STATE OF ILLINOIS

SUPERCONDUCTING SUPER COLLIDER

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TECHNICAL COMMENTS

TOPIC AREA: Wetlands

LOCATION IN DEIS: Vol. IV Appendix 11 PP 19 Figure 11-2

COMMENT IN REFERENCE TO: Wetlands in Site J6

TECHNICAL COMMENT:

320 See Technical Comments WET 011 and WET 001.

Comments on the DEIS for th

Supe llider in

Superconducting

ILLINOIS

Chapter 3
Mitigation Strategies for the Illinois SSC Site

CHAPTER INDEX TO THE ILLINOIS
COMMENTS ON THE SSC DEIS

Chapter 3

COMMENT

367 The State has determined, in its review of the DEIS, that DOE has failed to recognize the many mitigation strategies possible to decrease the overall environmental impact of the SSC. This includes alternative site designs which, in the case of the Illinois site, could be implemented using the Fermilab campus.

The State requests that the DOE utilize the attached document, which presents these mitigation options, to develop a best environmental alternative at the Illinois site.

Chapter 3 of the State of Illinois
Comments on the Draft
Environmental Impact Statement

MITIGATION STRATEGIES FOR THE
ILLINOIS SSC SITE

Prepared for:

U.S. Department of Energy

Prepared by:

State of Illinois

October, 1988

FOREWORD

The State of Illinois has continued to identify and respond to environmental issues that are associated with design, siting, construction and operation of the Superconducting Super Collider (SSC). The Illinois Site Proposal was developed with careful attention to minimizing potential environmental consequences, including effects on people, within the bounds of submitting a responsive, competitive proposal.

This was followed by active and sustained attention by the State to informing and preparing an environmental assessment (with mitigation concepts) for DOE consideration (Volume 3 of the March 15, 1988 BQL Submittal).

This document reflects the most recent attention the State has given to minimizing environmental consequences while preserving or enhancing the competitiveness of Illinois as a candidate for preferred site designation by DOE. This document contains mitigation strategies and recommendations that address issues in an overall, comprehensive fashion. The State has also responded to a specific initiative expressed by Dr. Wilmot Hess (during the DOE SSC Site Task Force visit of the Illinois site in May 1988) by beginning to consider the potential mitigation strategies associated with minimizing effects at the proposed West Campus location and in particular at Kaneville.

Issues raised by citizens are summarized in a separate report (Chapter 7 of the DEIS comments by the State of Illinois). The State considers its strategies to be generally compatible with and responsive to the substance of issues of concern to those most affected by the SSC siting in Illinois. While the State has briefly reviewed this report which became available on Octoer 14, and made appropriate references to it in this mitigation document, there was insufficient time to thoroughly study its recommendations. The citizens report will be carefully studied and the issues it addresses will be taken under serious advisement. In this context, this mitigation strategies document continues to evolve, and the State anticipates that the strategies will be further refined as site evaluation progresses.

The State is pleased to submit the results of its efforts to develop mitigation strategies for the Illinois SSC site as part of its comment on the Draft Environmental Impact Statement. Illinois continues to sustain its attention to every aspect of SSC siting in Illinois in parallel with DOE's site selection schedule. Illinois is prepared to follow through at the earliest possible date to work with DOE, build the SSC, and achieve the greatest possible compatibility with the environment for national benefit.

Mitigation Strategies for the Illinois SSC Site

1. INTRODUCTION

1.1. Objectives and Scope

This document summarizes the mitigation strategies that the State of Illinois (the State) feels, in its judgement, merit serious consideration by the U.S. Department of Energy (DOE) in the final environmental analysis, planning and design of the Illinois site for the proposed Superconducting Super Collider (SSC).

Potential mitigation strategies include both modified designs (alternative layouts of surface lands) and "best management" construction and operation practices that can eliminate impacts without negatively affecting operational requirements of the SSC. These strategies have been strengthened by the State by giving careful attention to specific concerns and suggestions expressed by the citizens of Illinois, particularly those that will be directly affected at the proposed site or adjacent to it.

The mitigation strategies that include alternative surface facility layouts are offered as options for DOE consideration. These strategies should not be considered as revisions to the State's August 1987 Site Proposal offer, which is based on the "standard template" SSC design as specified in DOE's Invitation for Site Proposals. Neither should these alternative layouts be construed as conditions of SSC development by the State. Rather, they are options presented to DOE as reasonable and responsible ways to facilitate the site-specific final planning, design and construction of the Illinois site as the preferred site for the SSC.

In contrast, mitigation strategies that relate to land and property acquisition, excavation of shafts and tunnels and implementation of other infrastructure improvements--activities for which the State would be responsible--do represent commitments by the State at this stage of proposal evaluation and environmental review.

1.2. Summary of Findings

There are few significant impacts to the physical or biological environment at the Illinois SSC site. The State has commented extensively in Chapters 1 and 2 (bound separately with this submittal) that based on extensive review of its site-specific database, the number of wells affected, groundwater overdraft and wetlands are not major impacts as stated in the DEIS. Public focus has principally been on impacts to human resources, particularly to property owners in and near the proposed surface facilities, and on capacities and services used by the population in the area (roads, water supplies, waste disposal). Accordingly, the State has concentrated on developing mitigation plans that reduce or eliminate these people-related impacts to the maximum extent possible.

First, the State has identified a number of minor modifications in the siting of the smaller surface features (access shafts and service areas) which, when combined with appropriate architectural treatment, largely eliminate any visual/aesthetic impacts to local residents.

Second, variations are possible for the West Campus layout wherein portions of the area are selectively eliminated. Due to the existence of the 6,800 acres of Fermilab, as described below, it is possible to selectively eliminate West Campus land areas, while still accommodating all the necessary project elements required by DOE.

Third, the Illinois site is unique among all proposed sites for the SSC, since Fermilab provides both land and infrastructure that is directly useful to development of the SSC. This includes the Fermilab Tevatron, which can act as the injector for the SSC (while continuing to meet independent research objectives as well), and the existing Fermilab lands and structures which can accommodate much of the SSC campus.

This unique aspect of the Illinois site combines most fortuitously with recent thinking concerning preferred design alternatives for the SSC (Lederman and Teng, 1987). Their concept of a single campus design for the SSC, a natural progression in the thinking of the theoretical physics community (which originally proposed a design with numerous experimental areas all around the ring), serendipitously provides an opportunity to mitigate, almost completely, impacts to property owners, farmlands and residents in the West Campus area. Selection of a single campus alternative would allow DOE to almost completely eliminate West Campus surface land. Implementation of such an alternative would mitigate the most prominent and permanent socioeconomic impacts about which affected citizens have voiced concern. Equally important, it would provide both the State and DOE significant schedule and cost savings related to property acquisition, operation, and maintenance. At the same time, a single campus would improve efficiency of operation by concentrating critical project components near the main campus.

Finally, the State has identified (and in some cases already implemented) a number of measures for property acquisition, construction and operation of the SSC which further reduce potential impacts of the project. Developed in large part out of Illinois' public involvement activities over the past year, these measures include the Good Neighbor legislation enacted by the State to protect property owners and local taxing entities, creation of a Citizens Advisory Program (already functioning), commitment to continuing a local project office that could provide services, along the lines of the "office of mitigation" as proposed by the Citizens Advisory Task Force, to ensure effective communication with affected individuals, and numerous "best management construction practices" requirements to control erosion, noise, vibration, traffic and dust. These measures all relate to activities for which the State will have responsibility, and thus represent commitments by the State. Combined with possible aesthetic mitigation measures, wildlife habitat, recreation use and farmland leaseback practices that DOE may choose to implement, these mitigation actions would result in an overall improvement to the area environment and quality of life.

1.3. Criteria for Development of Mitigation Strategies

The State has independently analyzed potential mitigation strategies that might be possible for the Illinois Site. These include:

1. Alternative surface land arrangements for the SSC.

2. Actions to mitigate the impacts of property acquisition and relocations on both property owners and local governments (Good Neighbor Legislation).

3. Best Practices to be employed during construction to avoid or minimize noise, dust, erosion, traffic and other construction related problems.

4. Post-construction practices to maximize secondary project benefits (farm leaseback, habitat enhancement, etc.).

In conducting this analysis, the State developed a large list of potential mitigation strategies based on assessments by various technical specialists and on issues raised by concerned citizens over the past several months. This list of issues was made part of a step by step evaluation process. The original strategies were first evaluated by the State to determine if they could reasonably be implemented without compromising DOE's ability to successfully construct and operate the SSC. Those that passed this criterion were then evaluated in detail. This evaluation included technical analysis by the State through the Governor's Interagency Task Force on the SSC, and involvement of the public via an ongoing Citizens Advisory Program (described herein and, in itself, an important part of the State's continuing mitigation activities). The strategies that are regarded as having the greatest potential effectiveness for mitigation are presented herein.

1.4. Conclusions and Recommendations

A single campus alternative for the Illinois site would significantly reduce impacts to local residents and landowners (as many as 59 fewer relocations and 128 fewer property acquisitions). Given this fact, and in light of current thinking by the theoretical physics community on the operation and maintenance advantages of a single campus for the SSC, it is recommended that DOE consider this alternative along with other possible "downsizing" alternatives for the West Campus presented here. These alternatives are intended to take full advantage of existing Fermilab facilities and property to eliminate many potential relocation and land acquisition impacts. The DOE should at least consider adopting the alternative West Campus layout that excludes Kaneville from the fee simple lands. In so doing, a significant reduction in relocations (an estimated 28) as well as project costs should be realized.

It is further recommended that DOE evaluate the other potential mitigation actions described herein to reduce impacts on the campus, access shaft and service area lands, and to reduce or eliminate as many of the minor construction and operation impacts as is reasonably possible. For all those found to be technically feasible, cost effective and in accordance with DOE policy, it is recommended that they become part of an Illinois site-specific design for the SSC, and that the environmental impact assessment be adjusted accordingly.

2. SURFACE LAND MITIGATION STRATEGIES FOR THE PREFERRED SSC SITE

2.1. Background

In the August 1987 Site Proposal the State included a single campus alternative based on Lederman and Teng's (1987) concept. This alternative was referenced in the Geotechnical Summary to the Proposal to Site the Superconducting Super Collider in Illinois (Illinois State Geological Survey (ISGS) and Harza Engineering Company, 1987).

The State has begun working with the "SSC Citizens Mitigation Advisory Task Force", referred to in this document as the Citizens Advisory Task Force, as part of its commitment to developing comprehensive mitigation strategies for the SSC in Illinois that can be a solid basis for planning by DOE and the State following site selection. The Citizens Advisory Task Force, formed in consultation with the government leadership of DuPage, Kane, and Kendall counties, has participated in mitigation planning by identifying and ranking the environmental impact issues for the Illinois SSC site and providing input on possible mitigation measures. This advisory task force has identified land acquisition and people relocation issues as among the most important. The advisory task force has questioned the absolute necessity for siting the West Campus lands to include Kaneville, and the necessity for a West Campus.

The DEIS recognizes the potential for such alternative site configurations at some later date (DEIS Vol. I, Chap. 3 pp 3-24). The DEIS does not, however, explore the technical and environmental feasibility of the single campus alternative suggested by the State, nor does it examine the possibility of selectively eliminating specific areas of surface land.

The State feels the existence of Fermilab, with its expansive 6,800 acre campus, provides the opportunity to consider reduced-size West Campus concepts and the single campus concept. The citizens of Illinois, in the vicinity of the proposed site, particularly those most seriously and permanently affected by the project, have raised this issue as well. Recognizing that these alternative strategies can significantly affect environmental consequences at the preferred site, the State has compiled a series of site-specific alternatives that could eliminate much of the land and people relocation impact of the project. These alternatives are offered for DOE consideration in preparing the Final EIS.

2.2. <u>The Concept</u>

Reducing the size or eliminating the West Campus surface land requirements is possible for Illinois, given:

1. The technical feasibility of the single-campus, bypass-clustered IR concept presented by Lederman and Teng (1987).

2. The availability of the existing 6,800 acre Fermilab campus

3. The premise that the State and DOE can agree on variances for transporting SSC equipment over public roads without permitting delays.

As Lederman and Teng (1987) have pointed out, a single campus concept results in increased efficiency of operation and decreased operation and maintenance costs due to:

a. Improved ability to service the detectors

b. Increased efficiency of operation and maintenance

c. Decreased need for duplicate support facilities (shops, computer centers, libraries, cafetería, stockrooms, lecture halls, water, sewage, gas, electricity, fire protection, security, roads, etc.)

d. Improved communications

e. Decreased manpower requirements

f. Improved availability of test beams to users

g. Decreased land acquisition and maintenance costs.

Based on this possibility, it is prudent to develop and evaluate alternatives that can reduce the number of acres to be obtained for the SSC from 7,690 (for the standard design template in the ISP) to an estimated 100-200 acres, i.e., no West Campus, fee simple lands required only for E and F sites, and limited access and infrastructure).

There are a number of other possibilities that are intermediate to this alternative and the standard design template provided in the Invitation for Site Proposals (ISP). The following range of alternatives are developed in more detail on the following pages:

1. Complete elimination of the West Campus (with special transportation variances for moving equipment between service areas and access shafts).

2. Elimination of selected portions of the West Campus lands, beginning with the 48 acres of Kaneville where most of the relocations and property acquisitions are required.

3. A "Beads on a String" alternative in which parcels of land surrounding service, access and interaction areas are acquired in fee simple and connected by roadways on which DOE is given a special variance to allow transportation of equipment as needed.

These potential alternative layouts are presented in Figures 1 and 2. The differential impacts each alternative would have on farmland, wetlands, number of parcels of land and number of relocations are summarized in Table 1.

Table 1

ACREAGES ASSOCIATED WITH MITIGATION ALTERNATIVES, FAR CLUSTER

OPTION	TOTAL ACRES	FARMLAND ACRES	WETLAND ACRES	# PARCELS	# PARCELS W/ RELOCATIONS	# RELOCATIONS
ISP	1,965	1,800	19.0	136	61	83
A	48	0	0.0	45	28	28
B	450	425	10.6	37	12	17
C	509	484	2.2	14	7	15
D	958	891	6.2	40	14	23

Assessing cumulative acquisition:

ACQUIRE						
BEADS	333	280	0.9	8	1	2
D	958	891	6.2	40	14	23
D+C	1,467	1,375	8.4	54	21	38
B+C+D	1,917	1,800	19.0	91	33	55

Description of areas:

ISP - Invitation for Site Proposals, Standard Template Requirements

A - Kaneville, residential (48 acres)
B - areas north of E6 and south of E5
C - areas north and south of K sites including sites E5 and E6
D - land area including all K sites but excluding Kaneville

BEADS - distributed surface areas that provide for localized E, F and K facilities.

Excluding Kaneville from the fee simple land eliminates 45 of the 136 parcels required in fee simple (a 33 percent reduction), and decreases the number of required relocations by 28 out of a total of 61 (a 46 percent decrease). Completely eliminating the West Campus would virtually eliminate any relocations for the project.

LETTER 1279 (CONTINUED)

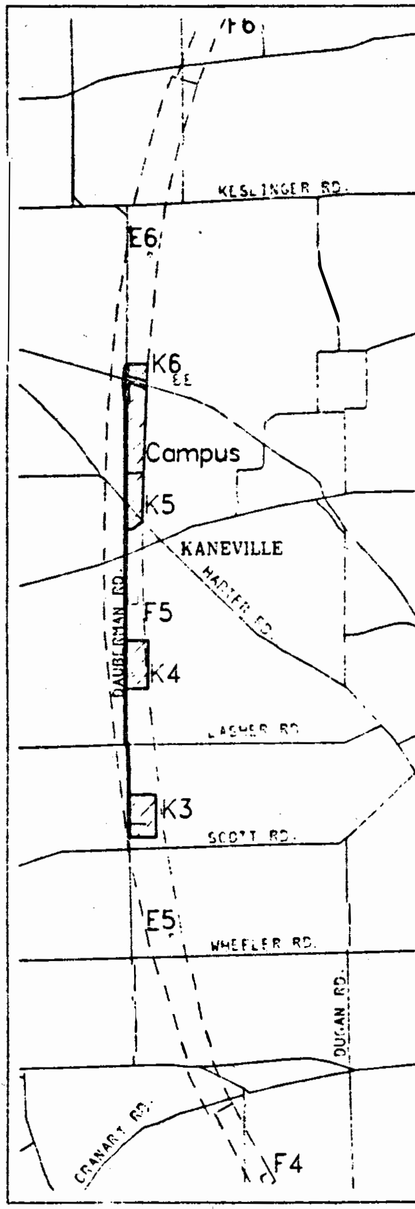


FIGURE 1

MITIGATION OPTION
Beads on a String

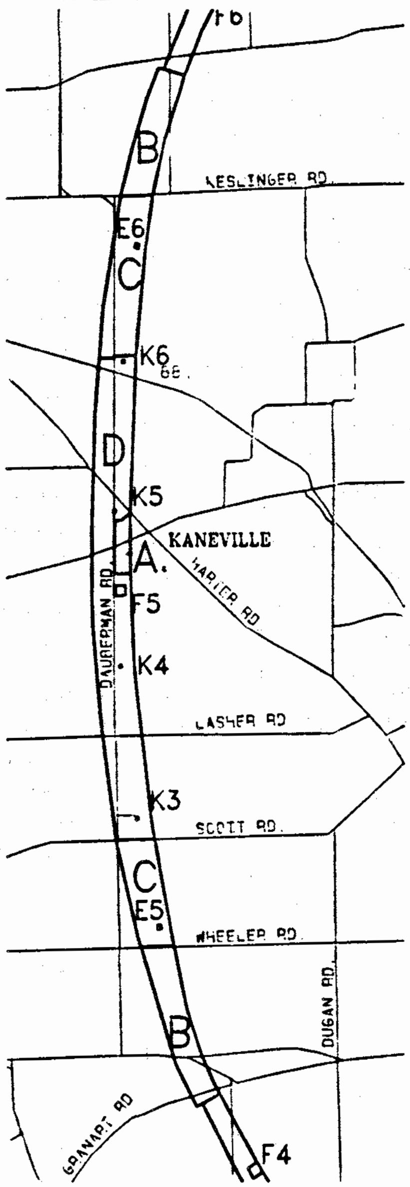
The shaded areas represent one possible configuration for the far cluster. It results in one relocation near K5

Site	Acres
K6	15.5
K5	53.0
K4	57.0
K3	60.0
E5	1.0
E6	1.0
F5	6.0
Campus	87.0
Roads	53.0
Total	333.5

Scale 1:70 000

2-6

FIGURE 2



MITIGATION OPTIONS
Far Cluster

Breakdown of acreages associated with various sections of the far cluster area. These areas have been choosen to provide a continuum for evaluating alternate configurations for the far cluster

Site Area	Acres Acres
A	46
B	450
C	509
D	956
Total	1,965

Scale 1:70,000

2-7

The number of land parcels to be acquired, that are currently associated with the West Campus, would be reduced by more than 95 percent.

2.3. Conclusion

The DOE should seriously consider the alternative that eliminates Kaneville from the fee simple lands to be acquired for the West Campus area. Elimination of the approximately 48 acres of Kaneville land (only 2 percent of the total West Campus as proposed) would reduce the impact to families requiring relocation in this area by almost half (eliminating 28 relocations). Cost savings to the project associated with land and property eliminated from the fee simple category associated with Kaneville could be on the order of $4.6 million, including an estimate of approximately $4 million for real estate acquisition and approximately $600,000 for relocation expenses. The 6,800 acre Fermilab campus has appropriate available land area that can more than suffice as compensation for a 48 acre reduction in Kaneville land associated with the Far Cluster. In fact, as detailed below, Fermilab acreage could probably serve the entire SSC requirements for experimental areas.

Serious consideration should also be given to various intermediate alternatives for the West Campus as described herein. Again, with the 6,800 acre Fermilab campus available, any reasonable reduction in other fee simple lands should be considered and the relative reductions in land and relocation impacts be weighed against the functional requirements of the SSC.

However, it is the State's recommendation to DOE that the single campus alternative with complete elimination of the West Campus be considered as the most efficient, least-cost and environmentally best alternative possible for the SSC, from a national perspective as well as a State perspective.

The benefit of decreased land acquisition costs is a particular asset for the Illinois site, since the 6,800 acre Fermilab complex could essentially serve all the SSC experimental area needs, with an additional few hundred distributed acres of land for access shaft and service area lands around the ring. This could save an estimated $15.3 million ($14 million for real estate acquisition and $1.3 million for relocation expenses), and would clearly further strengthen the Illinois site as the least cost alternative.

The major, permanent impacts of the SSC, wherever it is sited, are (1) displacement of people, and, (2) long term commitment of land to single purpose use as a federally owned, high energy physics research facility. A single campus alternative, using the Fermilab complex could reduce the total number of acres required in fee simple from the 7,690 acres specified in the ISP to something on the order of 200 acres. This is a reduction on the order of 98 percent for the single most significant long term impact the project will have on an Illinois site that is selected as the preferred site. (The Illinois site already requires acquisition of only half the land that the alternative sites must obtain and commit to the SSC.)

The advantages of efficiency, cost effectiveness and environmental superiority suggest that this alternative merits serious consideration by DOE.

3. OVERALL MITIGATION STRATEGIES AND RECOMMENDATIONS

There are five principal groups of mitigation strategies and recommendations that have evolved since the release of the Invitation for Site Proposals (ISP) in April 1987.

- State Mitigation Actions at the Site Proposal Stage
- Citizens Assistance Program
- SSC Good Neighbor Legislation
- Construction Practices
- Post-Construction Practices

These strategies and recommendations offer a combined, comprehensive perspective of mitigation opportunities for the proposed Illinois SSC site from the State perspective. Preliminary review has also been given to issues expressed by the SSC Citizens Mitigation Advisory Task Force as summarized in subsequent Chapter 7, and their report provides a focus for continued study and planning by the State. Illinois' own Environmental Assessment (Volume 3 of the March 15, 1988 BQL submittal) also represents a key reference document in reviewing the contents of this section, and in fact mitigation concepts presented in Volume 3 have been liberally excerpted in compiling the strategies presented here.

The types of mitigation strategies presented here are appropriate for DOE consideration under the assumption of a standard template as specified by the ISP (and adjusted within limits approved by DOE), or under reduced or eliminated West Campus alternatives.

The difference in implementation will be in the extent and magnitude of mitigation necessary under various surface land mitigation alternatives as presented in the previous section. The strategies presented in the following pages are thus offered in the context of the standard template, as proposed by Illinois, only for convenience of discussion and so that mitigation strategies presented in the Illinois Environmental Assessment (Volume 3) could be used directly without engaging in a substantial revision.

3.1. State Mitigation Actions at the Site Proposal Stage

368 The technical design requirements, stipulated by the U.S. DOE in its Invitation for Site Proposals in April 1987, were made site specific in each competing proposal. In the Illinois case, the basic template for the ring configuration was adjusted in a unique fashion. It was not simply placed on the landscape. Rather, State experts and consultants, using the geologic and environmental data already gathered, began detailed technical work to determine how to best configure the design. Their goal was to mitigate impacts that would otherwise affect adjacent properties and the environment, and still satisfy site requirements. From the early work done between 1983 and 1987, the technical and environmental suitability strategy led the State to formally request the U.S. DOE to approve or advise, prior to proposal submission, on the:

- Use of Fermilab's 6,800 acres as a portion of the site requirement.
  Result: approval, thereby reducing land impacts.

- Use of the Tevatron as the injection.
  Result: no objection.

- Placement of experimental areas between two injection/abort areas.
  Result: approval, thereby keeping experimental activity on Fermilab property.

Also, the State has proposed:

- The conceptual possibility of placing all six experimental areas on Fermilab property in one experimental cluster.
- A preferred placement of the main collider ring to minimize disturbance to existing structures, roads, wetlands, cemeteries, and other sensitive features.
- A preferred placement of shafts and acreage to follow existing road rights-of-way, property lines, subdivision boundaries, natural area delineations, et al.
- Joint SSC-Fermilab use of existing Fermilab water wells to meet water needs.
- Water connections to existing systems that are close to SSC surface sites.
- A water well located to serve the dual purpose of the SSC and local needs.
- A wastewater treatment plant sized and located so that it can serve a dual purpose of the SSC and local needs.
- A modest 1.5 mile power line on wooden poles that would follow Dauberman road to connect to Commonwealth Edison's existing grid to met SSC power needs.

- Minimum possible lengths for access roads to surface/shaft locations and pavement of access roads to eliminate fugitive dust.

- Strengthening of roads used to haul excavated material to disposal sites prior to construction.

- Use of quarry and/or gravel pits around the ring to minimize spoil haul distances.

- The U.S. DOE continue the Fermilab agricultural lease back practice at the SSC site.

- Management of the tunnel excavation by the State in order to maintain State control of potential disruption or property damage.

3.2. Citizens Assistance Program

3.2.1. Purpose of the Program. The Citizens Assistance Program is designed to provide the maximum information possible to persons affected by the SSC land acquisition process, and the most complete response possible to the concerns or problems of persons affected by the construction of the SSC or its related infrastructure improvements. The program will be implemented after Illinois is designated as the preferred site for the SSC.

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3.2.2. Structure of Program Delivery. The program will respond to two distinctly different needs of area residents. During the land acquisition phase, citizens will need information to respond fully to their own personal needs and situations. Due to the divergent roles of affected property owners and the State during this phase, and consistent with the requirements of the Uniform Relocation Act, the information dissemination activities related to land acquisition must be separate from other local project office advocacy activities. The State will assure adequate dissemination of information needed by affected persons.

During the construction phase, when the objectives of the State and affected residents are more fully aligned, the local SSC office will continue to address individual needs and concerns brought on by the disruption of increased traffic, noise, dust and other impacts of the project. A responsibility of this office will be as an advocate for the resident(s), communicating issues to the project engineer or the state agency with the authority to rectify construction procedures or to set new operational guidelines. Because the project engineer or state agency's actions may involve contractual issues with construction firms, the local office must realistically advise affected persons about the uncertain prospects of implementing significant changes to operations. Costly ammendments to contracts may preclude the DOE or the State from fully complying with individual requests.

The State envisions that the local office and the Citizens Advisory Task Force will work with the project engineer or appropriate state agencies in advance in order to avoid significant conflicts. This can help assure that the concerns of local communities and area residents are reviewed and addressed before construction contracts are let, thereby facilitating the smooth, uninterrupted completion of the project without undue adverse consequences to any one community or individual.

The local office will be designed to provide the maximum assistance possible to persons affected by SSC construction and to independently assure that uniform and consistent services are provided to everyone affected. This office will be part of the Illinois Department of Energy and Natural Resources.

The local office will maintain personal contact and exchange information with other agencies providing services and payments to eligible persons. Primary among these will be the SSC project's Resident Engineer Office. Other offices and agencies will include, but will not be limited to, other state agencies and units of local government. Personal contact will also be maintained with local community organizations.

3.3. The SSC "Good Neighbor" Legislation

Supporting the siting of the Superconducting Super Collider (SSC) in Illinois, the 85th General Assembly approved House Bill 3512, now referred to as the SSC "Good Neighbor" Legislation. This legislation is a direct response to three of the most often expressed concerns related to the Illinois SSC site. These concerns are: loss of revenue to local taxing bodies; SSC-related construction damage; and financial loss if the construction of

370 the SSC results in a decline in property values. The State has received citizen comments on the legislation, and these comments are under review.

3.3.1. Local Jurisdiction Tax Base Protection. An Illinois SSC will require that the State purchase as much as 3,708 acres of land. This land is located within the jurisdictional boundaries of 56 local taxing bodies. Because of the land purchase by the State, these local taxing bodies will incur some loss in revenue. The Illinois Department of Energy and Natural Resources (ENR) has estimated that the total revenue losses to all 56 of the local taxing bodies will be approximately $815,000. (These losses could be reduced if the West Campus is reduced in size, particularly with respect to Kaneville.)

Payments shall be made from funds appropriated by the General Assembly to the Illinois Department of Revenue in order to compensate for any revenue losses for a period of five years. The amount of payment is equal to the most recent equalized assessed value of the property purchased multiplied by the tax rate for the current year. This payment is only available to compensate for real property acquired by the State for construction of the SSC.

3.3.2. Construction Damage Insurance. The General Assembly authorized the creation of the SSC Construction Insurance Fund to be the repository of funds to ensure payment to property owners for the full value of actual damage caused by the construction of the SSC.

ENR will make pre-construction inspections available to landowners from whom sub-surface property interests are purchased. This pre-construction inspection will be the basis for asserting claims under the insurance program. ENR is authorized to develop guidelines to operate the construction insurance program. Funding for the program comes from the proceeds of the sale of bonds earmarked for SSC land acquisition. The issue of pre-construction inspection is consistent with the suggestions of the Citizens Advisory Task Force.

3.3.3. Property Value Protection. The General Assembly has acted to define the SSC land acquisition to include payment to residential property owners who incur a financial loss because of SSC related decline in property values. This property equity insurance is available to persons from whom the State purchases sub-surface property rights.

Prior to construction of the SSC and prior to actual land acquisition, ENR will conduct an appraisal of the property needed for the SSC project. This appraisal shall establish the fair market value of real property and will be required as proof that property values in fact declined.

ENR shall provide compensation to property owners equal to 80 percent of the difference between the appraisal value and actual sale price. The program will run for three years from the date of the acquisition of sub-surface property rights by ENR, and eligibility shall be restricted to the owner of record at the time of the appraisal. The General Assembly approved a payment equal to 80 percent of the difference in the appraised value and the actual sale price for several reasons:

1. To maintain equity with other existing home-equity programs. These existing programs authorized payments of 80 percent of value as does the SSC program.

2. To cover a decline in value that is solely attributable to the SSC. An 80 percent payment will keep the State from covering any general decline in property values in the area.

The SSC property value program is wholly paid by the State, unlike other home equity programs considered by the General Assembly that have included a tax or fee on eligible homeowners. The 80 percent reimbursement will encourage property owners to properly maintain the condition of their property. By not allowing full payment, property owners have incentive to keep up the value of their property.

ENR is also authorized to provide additional compensation for owners of farmland to compensate for possible declining farm values.

3.3.4. Conclusion. Anyone who owns an insurance policy hopes that the insurance they purchase will never be used. The State has the reasonable hope and expectation that the provisions of this bill will never have to be used as well.

For example, the State believes that the tax base will recover quickly, property values will not decline, and construction techniques have improved to such an extent that damage to property is rare.

3.4. Construction Practices

There are three types of construction-related impacts that are of public concern for the SSC:

- Noise and vibration from shaft and tunnel construction
- Traffic and dust from tunnel spoil disposal activities
- Other normal construction impacts due to surface disturbance and traffic.

The State's proposed mitigation of these impacts is presented below.

371 3.4.1. Noise and Vibration. The depth of tunnel and use of tunnel boring machines will virtually eliminate the potential for major problems from excavating the Illinois SSC tunnel. However, limited blasting will be required at shafts constructed around the ring and underground at the location of the experimental areas. (Blasting to create underground experimental chambers in bedrock will not have the potential to create damage at the surface.) On average there is about 100 ft of overburden (glacial till) overlying the dolomite rock where blasting for shafts would be required. Thus, in most cases the initial 100 ft or so of the shafts will be excavated conventionally, and

blasting will begin at a depth of 100 ft. The associated noise and vibration would be naturally buffered by overburden till. However, to completely prevent any unforeseen damage to property due to blasting vibration, Illinois proposes that the following procedure be followed by all contractors:

- Appropriate pre-construction surveys of nearby properties.
- Special care in initial blasting activities that limit charge sizes.
- Monitoring of structures during blasting.
- Post-construction evaluations to ascertain that no damage has been done.
- Clear assignment of responsibility to provide appropriate and timely compensation in the unlikely event that any damage does occur, as provided by the Good Neighbor legislation discussed previously. The local office will serve to facilitate claims and mediate between contractor and property owner.

3.4.2. Roads and Traffic

Area Roads

372 A network of roads will be needed within the main campus (i.e., at Fermilab), injector, and experimental areas, and to connect the service areas and intermediate access points located around the perimeter of the SSC collider tunnel and at the abort/external beam access areas. Where possible, existing roads will be improved and used. This will generally consist of road widening

and, possibly, resurfacing. Access roads will be required from the adjacent road network to the major service areas and to the spoil disposal sites at nearby quarries.

Access to and from I-88 in the vicinity of the far cluster is also anticipated. Two alternatives are being considered for improving access to I-88. Either the interchange at Route 47 will be upgraded to allow access to eastbound I-88 and from westbound I-88, or a new interchange at Dauberman Road will be constructed. Effects of a new interchange must be carefully considered in terms of all environmental conditions.

There are several potential transportation effects associated with constructing and operating the SSC. Many of these effects can be characterized as relatively minor, temporary in nature and readily controlled through conventional practices. Other effects are regarded as permanent alterations that are generally considered as infrastructure improvements.

Construction-Related Effects. The most noticeable temporary effects are those to be associated with construction of the SSC at the main campus, the far experimental areas and the distributed service and access areas.

These effects will not occur at all locations around the SSC site simultaneously; they will not occur in equal measure at each location, nor will they be sustained over the estimated seven years of construction. The temporary effects are those typically associated with excavation and small industrial facility construction: dust, noise, truck traffic and general construction worker movement to and from the site and on site with various types of vehicles. Good construction practices and careful control of activities and movements can help to minimize these potential effects, as presented in the mitigation discussion and other parts of this assessment. For example, paving access roads will significantly reduce dust generation.

The SSC will require building approximately 5.5 miles of new roads to provide access from existing roads to points around the proposed ring location where service shafts and access shafts must be located. The proposed ring alignment was in part selected to assure that the required shaft locations created a minimum of intereference with existing roads and buildings. In addition, some locations were shifted so they were placed adjacent to existing road or property lines to further minimize adverse effects. The extensiveness of the ring, and the necessity of maintaining shafts at reasonably equi-distant locations, creates the need to build 5.5 miles of access roads and to route them in as benign a fashion as possible. These access roads will be constructed as permanent roads and will be used as a right-of-way for utilities, as appropriate.

During construction, the SSC project will create additional traffic on the existing network or roads that cross the site. Construction workers will travel back and forth to work and will traverse the ring during the normal course of their work activities. In addition, trucks will haul excavated rock material from the shaft locations during periods of tunneling. As construction is completed for a given tunnel segment, rock haulage will cease from the associated shaft. Once construction is completed, there will be little traffic associated with these shaft locations. A way to address such issues is to introduce additional traffic controls and speed limits to maintain safe conditions for all who use the roads in the area. Truck routes will be selected with care to minimize traffic in populated or heavily used areas. Specific suggestions of the Citizens Advisory Task Force provide a good initial basis for making these difficult truck route selection decisions.

During SSC construction, State highways will be used instead of local roads to the extent possible. Since heavily used local roads might deteriorate to some degree, the State plans to strengthen the haul roads as necessary prior to construction, so that they will be in better condition than existing roads, even after construction is complete. The net long-term effect would be an improved quality road network in the area. This will support the increasing trend toward economic developed occurring in Kane County, as evidenced by the nature and extent of major construction projects in the area.

A total of 40 quarries or gravel pits exist within approximately five miles of the proposed SSC collider ring. Of these quarry and gravel pit operators, 17 are near the ring and have expressed an interest in receiving excavated material from SSC construction. Use of more distributed excavated material disposal sites will reduce traffic induced by long haul distances.

Just as significant is the selective use of stockpiling on the construction sites to control the volume of traffic in an acceptable way, and in particular to avoid specific periods associated with school bus movement -- i.e., early morning, mid-afternoon and late afternoon, as specified, for example, by the Superintendent of the Kaneland School District. The Citizens Advisory Task Force has made similar recommendations that provide a basis for scheduling guidelines. At the same time, stockpiling practices must be evaluated and controlled to minimize surface runoff and fugitive dust emissions.

3.4.3. Other Impacts

373 A comprehensive set of mitigation actions is recommended for all construction activities, particularly those associated with

Intermediate Access Areas (E), Service Areas (F), Abort External Beam Areas (J), Entrances and Driveways, and Haul Road Access.

The State recommends that those actions be specified as part of the terms and conditions of each contract document. The contractors bidding on the project can then properly plan for these actions and include appropriate costs to cover them. These are important mitigation steps that have also been recommended by the Citizens Advisory Task Force. A preliminary set of recommended actions to be specified in construction contracts is presented here:

1) A slurry trench cutoff or similar method will be used prior to excavating or drilling any access shafts, in order to protect surface waters, such as wetlands.

2) A landscape plan shall be prepared to include all new access, service and entrance roads or driveways. The plan will maximize buffer areas between the sites and the surrounding land use (existing or planned). Special provisions for protecting trees and shrubs, that are to remain following construction, shall be implemented.

3) All new and existing unpaved access roads, driveways and entrances will be paved to eliminate fugitive dust.

4) Sprinkling all unpaved construction use or activity areas with water four times a day will be required when the area is in use. This procedure will maintain a minimum of 50 percent reduction of fugitive dust.

5) Stake, sign and fence the defined limits of minimum surface land disruption and restricted construction areas at each site.

6) Specific erosion control requirement methods, techniques and USDA/SCS accepted practices of the U.S. Department of Agriculture, Soil Conservation Service (USDA/SCS) shall be used.

7) An erosion control plan for each surface activity shall be required by each contract, prepared by each contractor and approved and monitored throughout construction in accordance with provisions such as those used by the Illinois Department of Transportation.

8) All agricultural field tile along and under access roads, entrances, drives and on construction sites shall be located, maintained and replaced if necessary.

9) Work schedules shall be prepared to minimize surface construction noise, fugitive dust and traffic congestion.

10) Work schedules shall minimize neighborhood (residential) land use disruptions that may become identified through local coordination as a problem or nuisance.

11) Weekly construction progress and coordination meetings with municipal and neighborhood representatives will be held at each active site to monitor progress, impact and mitigation. This input to a monitoring program will be essential to provide effective mitigation.

12) Access safety, security and construction traffic control persons will be provided at all active surface sites during construction.

13) All spoil disposal trucks will be routed to the nearest State highway and/or closest disposal area receiving

excavated material, with careful consideration given to whether the shortest route is the best from the standpoint of minimizing disturbances on local population due to traffic, noise and dust.

14) Only twenty ton (approximately ten cubic yards) trucks shall haul spoil adjacent or through residential land use areas.

15) The side walls and beds (beds may not be practicable) of trucks hauling excavated material will be lined to reduce loading noise.

16) Excavated material will be bermed and mounded on site as much as possible according to an adopted landscape plan.

17) All trucks hauling excavated gravel, stone, asphalt and similar materials will be tarpaulined.

18) All vehicles, machines and activities must meet IDOT construction noise, IEPA noise or USEPA noise requirements as applicable.

19) Backing of trucks or loading equipment near residential areas shall be kept to an absolute minimum to reduce annoyance from backup alarms.

20) Protection and preservation of aboriginal records and antiquities.

21) Protection of streams, lakes, reservoirs, natural areas and endangered and threatened species.

3.5. Post-Construction Practices

The State has also given considerable attention to other aspects of the SSC project that affect the post-construction period. There are several mitigation actions that can significantly preclude or reduce potential impacts, if carefully identified, studied and integrated into SSC site-specific design immediately following site selection. At least six prominent action areas have been identified by the State:

- o visual and aesthetic
- o roads and traffic
- o health and safety
- o shared land use
- o water supply
- o waste disposal

Each area is described in the following paragraphs in terms of specific mitigation strategies that are reasonable to consider, or that have been made part of the Illinois site proposal. The recommendations of the Citizens Advisory Task Force should also be carefully reviewed in the context of these strategies.

3.5.1. Visual and Aesthetic

374 Mitigation of the visual and aesthetic impact of the SSC in Illinois has begun to take into account a range of varying sites, landscapes types, and adjacent uses. Across the breadth and

width of the SSC site, as the land changes from morainal hills to agricultural plains, from new residential subdivisions to the characteristic groupings that form our region's farms, designs for the surface facilities of the SSC have been altered, rearranged, and tailored for their locale.

This process of study and adjustment has just begun, and the task of rooting each facility specifically into its site lies ahead. The work to date has been to identify sensitive and critical zones, and begin to look at some of the host of alternatives that might be possible, in four basic areas of concentration in the mitigation effort. These areas of study each provide some of the means by which the visual and aesthetic impact of the SSC surface facilities can be managed and mitigated: they are the tools of a collaborative and comprehensive process. Briefly described, they are:

- o patterns of land use
- o landscape and landform
- o building arrangement
- o building architecture and construction

<u>Patterns of Land Use</u>. How can the overall site for the facility be arranged? Can the site include recreational facilities and be a park in residential areas? Can the site and its buildings be grouped as, and included in, agricultural areas? Can the points of access to the site be arranged in ways similar to adjacent uses? Can the basic geometry and extent of the site be consistent with the manner in which adjacent uses are arranged?

These questions, and others, begin to suggest some of the options available at the largest scale of site size and character. Of course the SSC requires a variety of types of surface facilities, and this too has an affect on site questions, and opportunities for accompanying simultaneous uses of sites. Thus, many options for site patterns and site land use will arise and develop as specific facilities and specific sites are combined.

Landscape and Landform. As has been noted, the character of the landscape varies widely across the site. And thus the treatment of each SSC facility should be handled in a way consistent with that character. It is simply inadequate to recommend the obvious and often repeated formula of evergreen planting and earth berms. Instead, the landscaping of each site should in addition utilize local and vernacular plant materials, arranged in ways consistent with the northern Illinois environment.

When the facility is in the midst of agricultural activity, then cultured landforms such as hedgerows and windbreaks, or trees arranged in tight groves, (so often a feature of our farming landscape), will aid in allowing the facility to be integrated into the local context. In the hilly northern portions of the site, where planting is more dense, the resources for integrating the facility into the adjacent scene are again clear, though critically different. It is in working with and acknowledging these differences that efforts have been directed.

The goal of this way of thinking about landscape is to produce a facility that is as harmonious and unobtrusive as possible. Whether driving by each site in an automobile at speed, or viewing the site from home or workplace, the presence of a facility in the sweep of vision should never seem jarring or foreign.

Building Arrangement. The buildings which constitute a surface facility have been rearranged in early studies, in order to allow the overall grouping of elements and structures to adjust to their local conditions to the greatest extent possible. Existing agricultural and residential groupings have been examined in detail, and studies illustrate the extent to which SSC facilities can be arranged in similar ways. Dozens of farms have been photographed, historic structures, building types and resources identified and catalogued, so that early sketches could begin to adopt these indigenous features into their character.

Further, building arrangement has been investigated in an attempt to use the structures as screens for parking areas, organize and clarify site circulation, and integrate external technical equipment.

The placement of structures on site and the relationship between structures are crucial elements in the mitigation effort. Here issues of scale, view corridors, screening of onsite activities, siting as related to landscape and form, all can be taken into consideration.

Building Architecture and Construction. The visual appearance of each individual structure snould derive from the precedent of local example. It is a relatively simple matter to employ building materials and forms consistent with the surrounding environment. The addition of scale-giving elements such as windows, doors, dormers, eave lines, coupled with buildings massed similar to local building type will make each appear familiar and unobtrusive.

For example, a facility could be constructed of local brick, massed with appropriately pitched roof, given windows and doors located in a manner similar to adjacent types, and thus seem substantially less noticeable as a result. Perhaps more than any other single resource of mitigation, this way of thinking about construction can prove a huge benefit to adjusting and altering a facility so that it fits and integrates with its context.

Early sketches indicate farmlike buildings, residential types, historic buildings, and even some that appear to be clubs, or park and recreation buildings. There are, obviously, as many alternatives as there are sites: this potential represents the next step in the mitigation process.

The visual and aesthetic mitigation effort has attempted to deal sensitively with the resources of our locale, putting them in the service of imagining integrated, unobtrusive, (in fact, potentially attractive), SSC surface facilities. The foundations have been established for a continuing process based on a site-by-site working method, a method which underscores Illinois' commitment to a collaborative and comprehensive mitigation effort.

3.5.2. Roads and Traffic

The increase in total staff and visitors at the main campus on Fermilab property due to the SSC will have little impact on the transportation system and services that are adjacent to the facility. The area immediately surrounding Fermilab's boundaries is experiencing rapid development in the form of residential and
375 multi-family projects, as well as shopping strips and industrial parks. The capacity of the highway system can readily accommodate all of these developments as well as the SSC; public transportation services can be expanded as demand warrants.

About 500 staff may work at the far experimental cluster area. State and local governments have considered the increase in traffic that will result from the influx of permanent, commuting staff into the vicinity of Kaneville. Commuting patterns are likely to develop along Interstate 88, Dauberman Road, and Butterfield Road. For this reason, Illinois has proposed to make significant investments to improve the quality of these roads. In its technical comments on the DEIS, the State has also recognized the increasing pattern of commuting along Route 34, and is prepared to improve conditions as part of its normal transportation planning process. In addition, interchange points will be improved so that traffic patterns will evolve with minimum impacts on the resident population and to allow other development to proceed in an acceptable fashion and in accordance with land use plans. The Citizens Advisory Task Force has noted several concerns with respect to Route 47, and these merit serious consideration as development in the area in general progresses.

If further rail support is considered by DOE to be essential for the SSC to service the far experimental cluster area, the State will construct a rail siding and rail spur that connect with the Burlington Northern Railroad Aurora-Savanna main line. The rail siding will not involve the acquisition of a significant amount of land nor affect highway usage significantly. The rail spur parallels Dauberman Road to a point near F5. Three alternatives alignments are possible for the spur, and the improvement would be made on the most prudent alignment to minimize possible effects to the surrounding natural environment and human activities.

Local effects on roads have been addressed in a previous discussion. In a regional sense, the SSC will have little measurable effect on the highway system that provides access to various parts of the metropolitan area. The suburban area west of Chicago is, in general, developing rapidly, and considerable attention is placed on planning to assure that transportation needs are met. The incremental increase in staff and families due to the SSC does not alter regional transportation plans. Projects like the SSC that lead to economic development in the area along natural growth corridors are implicity considered in the transportation planning process. The transportation planning information and traffic statistics provided to DOE offer extensive support of this assessment.

Regional transportation authorities are prepared to initiate community bus service or other public transportation in the area. The plans for such service will depend on how commuting patterns associated with the SSC and other growth in the area develop.

3.5.3. Health and Safety

There are important safety issues directly related to SSC operations that require careful attention and mitigation planning. This discussion highlights such operations-related mitigation actions. The following siting, design and construction mitigation actions that have implications for health and safety have been addressed in other sections of this document:

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- Post-construction evaluations will be conducted to ascertain that no damage has been done.
- Clear requirements will be established to provide appropriate and timely compensation in the unlikely event that any damage does occur. The local office will serve to facilitate claims and mediate between contractor and property owner.
- The collider tunnel has been proposed in bedrock because this geologic structure offers the best conditions for tunnelling. The bedrock that will accommodate the tunnel is an aquitard, and therefore

the number of wells affected will be small. The depth of tunnel in bedrock provides earth shielding that far exceeds the 35 feet minimum specified by DOE.

- Traffic brought about by construction will be planned, controlled and carefully monitored on a local basis to assure that the potential for accidents is kept to an absolute minimum. This also has implications for other health and safety aspects of traffic, in particular dust emissions, and other air quality effects.

Operation of the SSC will parallel Fermilab operations, and equipment and facility usage and procedures successfully applied at Fermilab can be extended to the SSC. For example, distributed SSC service areas will require compressors, pumps, and other equipment housed in buildings over the shafts. Established pressure vessel codes and other safety requirements assure good design, installation, and maintenance practices.

There are also a range of safety considerations typical of research facility operations that DOE's SSC safety staff will implement. These considerations include handling hazardous and special materials, instituting emergency procedures and awareness about them, controlling traffic, controlling indoor air quality, and protecting electrical equipment. Particular attention will be given to establishing safety procedures at the distributed SSC surface facilities that are adjacent to concentrations of population. Fermilab experience has demonstrated that safety practices for both workers and the public can be effective and can become standard operating procedures. Concerns expressed by the Citizens Advisory Task Force merit careful consideration in developing safety procedures that will apply to each distributed facility location.

Since the SSC will be a distributed facility around a 53-mile ring, it is important to assure that all health and safety procedures are maintained at a standard, high level. This suggests the merits, as the Citizens Advisory Task Force also stresses, of not only a well-trained DOE SSC staff to specify, implement and maintain acceptable procedures, but also the merits of enhancing the knowledge and preparedness of local services (e.g., police, fire, hospital and other health and safety-related occupations) concerning SSC operations within their jurisdiction. For example, the materials used and equipment operation associated with a service area at a specific distributed location should be made familiar to local services so that they can work in a highly responsive fashion with SSC staff should the need arise. Experience of Fermilab has also shown that its emergency staffs offer an important resource to local services by (1) providing support in managing emergencies in the communities adjacent to Fermilab and (2) providing useful information on safety issues. The DOE SSC staff should also be available in a similar fashion to augment local services when feasible and appropriate

3.5.4. Shared Land Use

377 There are clear and overwhelming benefits for land use planning at the Illinois SSC site because of the nature of the proposed facility. Much of the land to be acquired for the SSC at various locations around the ring is characterized as open field and agricultural. SSC facilities will actually occupy a small proportion of the land to be acquired, thus creating significant opportunities for preserving or creating open space buffers, restoring prairies and wetlands, and permitting continued agricultural production. These are alternatives to the likely residential, commercial and industrial development of the lands, should the SSC not be sited in Illinois.

The prominent land uses in the site area are listed here:

- farmland
- residential/commercial/industrial
- open space/recreation
- wetlands
- wildlife habitat

There are significant mitigation actions following construction that can be introduced to assure maximum compatibility between the SSC and adjacent land uses. These actions are focused predominantly on farmland (e.g., leaseback practices) and the combined uses of open space, recreation, wetlands, and wildlife habitat. Regarding residential/commercial/industrial land use, the State proposes to mitigate various incompatible uses through actions described in other sections: Good Neighbor legislation, alternative water supplies development, visual and aesthetic treatments, as well as all of the proposed practices to minimize construction-related impacts. There is very little potential commercial and industrial property that will be taken out of use by the SSC; and, therefore, the "opportunity-cost" of foregone job creation prospects is minimal and speculative compared to the relatively well-defined and immediate opportunities brought about by the SSC.

Fermilab is an excellent model for establishing good land use practices at the SSC site. The amount of Fermilab lands leased for farming or developed as natural habitat areas is conservatively estimated at 45 percent. Approximately 2,000 acres (30 percent) of Fermilab's 6,800 acre property is leased back to farmers and, therefore, not taken out of production. Another 1,000 acres (15 percent) is used for prairie restoration areas and wetlands, thus not physically altering farmland. Prairie restoration reestablishes soil structure and actually improves current conditions (e.g., by reducing erosion).

Farmland

In a fashion similar to Fermilab, a large portion of the prime and important farmland to be acquired by the State for the SSC could continue to be farmed, depending on agreements reached with DOE. The 1,955 acre far cluster area includes 1,761 acres of prime farmland and 107 acres of important farmland. This area could substantially remain under cultivation through lease-back agreements with local farmers. Similar agreements could be made to retain production on 1,100 acres of prime and important farmland in the near cluster area, outside the existing Fermilab property.

A sampling of additional strategies for mitigating a variety of effects related to farmland is presented here. These strategy options, prepared by the Illinois Department of Agriculture, may not all apply as SSC site-specific design progresses. Nevertheless, they serve to illustrate the range of conventional measures that can be used as effects are identified and as SSC project requirements are further evaluated in the context of the Illinois landscape.

- Provide for handling the excess runoff from all impervious surfaces, such as parking lots, roofs, etc.

- Construct all roads adjacent and parallel to existing field boundaries, public and private roads, and other utilization lines. Constructing road diagonally across cropland creates parcels of land that are irregular in shape, and thus, difficult to farm, or it can create land-locked parcels that may have no practical access points.

- Maintain field and farmstead access adjacent to highways.
- Keep all fee simple right-of-way purchases to a minimum by designing roads in accordance with minimum federal and State design criteria.
- Determine the location of underground field tile that may traverse the land upon which a road will be constructed in order that precautions can be taken to assure the tile's continued operation. Proper field drainage is absolutely essential for sustaining a high-level of crop production on soils such as those located in the SSC corridor.
- Properly seed all land disturbed by construction to achieve an adequate level of erosion protection.
- Maintain the capacity of all existing surface drainage ways intercepted by new road construction. Increase the capacity of those surface drainage ways that will carry the runoff from any impervious highway surfaces.
- Keep all medians on divided highways as narrow as the State and/or federal guidelines will allow to minimize land acquisition.
- If interchanges are needed on divided four lane highway extensions, utilize compressed diamond interchanges.

- If feasible, place surface facilities on land possessing lesser productive soils or on tracts of land that are irregular in shape, on parcels that are too small to farm economically, or on land that has poor access for agricultural equipment.

- If highly productive, easily farmable land cannot be avoided, locate surface facilities in field corners, adjacent to a road, or in some other manner that will provide the least inconvenience and disruption to the adjacent farming operation(s).

- Provide methods to handle runoff generated by any impervious surfaces so as to not flood adjacent or downstream agricultural land.

- Protect all land disturbed by construction from excessive soil erosion during and after construction to prevent sediment damage to adjacent fields and drainage systems.

- Construct and landscape surface facilities so they blend in aesthetically with the surrounding rural landscape.

- Contain on the site or remove in an acceptable manner all runoff of a nature that is toxic to humans, livestock, and crops.

- Make efforts to preclude the interruption of private wells. If interception is unavoidable, appropriate arrangements can be made to furnish sufficient water to the landowner, particularly when a livestock operation exists on the farm.

- Place electric transmission poles as close as possible to highway rights-of-way or on field borders, fence lines, and grass waterways.

- Make every effort to keep guy wires and their anchors from being placed on adjacent row cropped land. All guy wires should be marked with guy markers to make the guy wires highly visible.

Open Space/Recreation/Wetlands/Wildlife Habitat

There are opportunities for enhancing recreational resources by using excavated materials from the SSC project. Several options exist for disposal, and it is likely that more than one will be used. For example, if abandoned quarries are landscaped using these materials, new recreational sites could be created. Another opportunity for enhancing recreational resources in conjunction with the project is the possible reclamation of the Kaneville Esker to establish a park near Sugar Grove.

It is highly unlikely that population increases attributable to SSC operations (staff, families, and visitors) can affect the quality or availability of recreational open space resources. Existing land use plans are designed to provide adequate resources as general population growth develops.

Land acquired for the SSC and development of the project structures can provide a mixture of recreation opportunities integrated with buildings and grounds. The coexistence of high-energy physics research facilities and recreation opportunity has been effectively demonstrated through the existing Fermilab facilities. Recreational resources and opportunities may in a similar fashion be enhanced in the long term as a consequence of SSC construction and operation. The extent of enhancement will depend on site-specific design and layout considerations. Using Fermilab as a model, it is probable that the SSC will expand such recreational opportunities as hiking, jogging, cross country skiing, and bird watching. The creation of large parts of SSC lands as open space that can be accessed by the public (much as Fermilab is today) offers opportunities for the counties to carefully shape its own open space plans and futures at an early date to benefit the quality of life of its citizens.

The Illinois Environmental Assessment (Volume 3 of the March 15, 1988 submittal to DOE) provides considerable discussion of the potential mitigation actions that are appropriate if wetlands or wildlife habitats are encountered and are unavoidable. These mitigation needs can only be specifically identified and considered rigorously by DOE, with State support and public participation, when site-specific design is initiated. The State currently estimates, however, that less than one acre of wetland is potentially of such an undisturbed nature as to warrant particular mitigation attention.

3.5.5. Water Supplies

The State takes exception to the DEIS assessment of impacts on wells and groundwater resources in the site area. State perspectives are presented in Chapters 1 and 2 of its DEIS comment submittal. The concerns of citizens are recognized; but
370 based on careful study of all data, the State regards overall potential impacts as minor and readily addressed through well replacement and other conventional approaches.

There is also no indication that the quality of water supplies will be affected by the development of the SSC.

Water Sources for the SSC

The State has identified water sources to serve the SSC that will not significantly affect other users at various points around the proposed ring. This identification process has been accomplished with the cooperation of county and local governments.

Because a combined potable/cooling water system is recommended and a potable water supply system with sufficient yield already exists at Fermilab, only modification of the existing distribution system will be required for the main campus and injector complex. Wells will be installed by the State in underlying glacial drift or bedrock aquifers at the far cluster experimental area and five of the service areas (F3, F4, F6, F7, and F8). The three remaining services areas (F1, F2, and F9) are within one-half mile of municipal public water distribution systems and can be supplied from existing sources. The local governments of St. Charles, Aurora, and Oswego have agreed to make water connection improvements to these three SSC facilities that are likely to be situated in their communities. These new wells and connections to existing systems will have little effect on available capacities at these locations.

Surface Water

During operation, seepage water will be pumped to the surface at all 10 service areas. The water will be held in ponds and some of it may be used for the SSC closed-loop cooling system. The surface impoundments will be used for monitoring and controlling the water prior to release to the off-site or external surface drainage system.

There is some potential for release of small quantities of nonradioactive effluents into the on-site discharges. An extensive monitoring program will be conducted to verify that radiation exposures, as well as nonradioactive releases, are well within permissible (safe) limits. Currently, such a system is operating well and safely at Fermilab.

During some experimental work, radioactive particles will be created. While the amounts of these particles will be very small and confined to the collision area, occasionally some cooling water may become contaminated with low-level radioactivity. Disposable cartridge filters and ion exchangers may be used to remove radionuclides from the wastewater.

Groundwater

The construction and routine operation of the SSC will not affect groundwater quality. The placement of excavated materials at quarry sites has been analyzed in the context of leachate effect on surface water. The excavated material has no hazardous effect.

The SSC has been designed by DOE so that its routine operation will have no effect on its natural surroundings. This design has been proven feasible through the long and successful operation of Fermilab. Nevertheless, it is important to evaluate the potential for generating radioactive water in the rock in which the collider tunnel is located. This rock is highly impermeable, with groundwater flow of one foot per year or less. The SSC vacuum tube, magnets, and other shielding are designed to protect material surrounding the tunnel from accidental loss of the collider beam. (Accidental loss has never occurred at Fermilab.) Should such a loss occur, the extremely slow groundwater flow will be nature move toward the tunnel; there it will be carefully controlled and treated to reduce radioactivity to an acceptable level. To further protect against groundwater contamination, no wells will be permitted to operate within 35 feet of the center line of the tunnel.

An inventory of existing wells within the proposed SSC corridor indicates that there are 1,505 wells. Based on existing well records (773 wells or 51 percent), an estimated six to 31 wells will have to be relocated by the State. This is based on a conservative assumption that wells (there are six) within 35 feet on either side of the tunnel centerline will have to be relocated. An additional 25 wells are within 150 feet on either side of the tunnel centerline, and the DOE will have the option of requesting that these wells be relocated.

The State will provide alternative water supplies to all affected well users, either by drilling new wells or by providing another surface water supply of equal or better quality. No municipal wells will have to be moved.

During operation of the SSC, groundwater infiltration into the SSC underground facilities will be conveyed by the tunnel and chamber drainage system to several pumping stations. The design capacity of these will allow for possible large inflows during early operation of the SSC and as a contingency to cover emergencies. The number and shaft location of pumping stations will depend on:

- the amount and location of seepage
- selection of a final tunnel configuration (inclined or horizontal) and grade
- final design of the drainage system

o possible use of the seepage for various purposes, such as cooling.

The seepage of groundwater into the collider tunnel after grouting has been estimated as 50 gallons per minute (gpm) per mile. The spacing between service areas is about 5.1 miles. Thus, seepage water pumped from the tunnel at a given service area will be 0.57 cubic feet per second (cfs). The requirement for cooling water is 125 gpm or 0.28 cfs. If seepage water is use for cooling purposes, the discharge to an area stream will be 0.29 cfs.

The discharge of 0.29 cfs of seepage water to an area stream will increase the low flow in the stream, which will be beneficial for the aquatic habitats and recreation. This discharge of seepage water during flood conditions (100-year flood) will increase the flood flows by 0.1 to 1.0 percent, a negligible amount,

3.5.6. Waste Disposal

379 The waste disposal aspects of the SSC effort are not significant for two important reasons. First, Fermilab already generates and disposes of a considerable proportion of waste that has been estimated as part of the SSC conceptual design. This is true for wastewater, solid waste, hazardous waste, and low level radioactive waste (LLW). Second, the incremental additional waste that an SSC facility is expected to produce can readily be accommodated by the waste disposal and treatment resources available in northeastern Illinois. In the case of LLW, the policy of DOE is to dispose of it as its own facilities outside of Illinois, which is the current Fermilab practice. This discussion focuses on waste disposal plans that mitigate possible effects of the SSC on local capacities.

Wastewater

The potential effects of the SSC on the installation of wastewater collection and conveyance facilities and wastewater treatment facilities are minor in Illinois. The plan for wastewater management for the SSC waste follows.

Main Campus. Fermilab currently conveys its sewage to the Batavia wastewater treatment facility. Wastewater generated on the SSC main campus is estimated to be 0.15 million gallons per day (MGD). Current Fermilab wastewater volume accounts for a significant proportion of that estimated for the SSC. It is proposed that this flow be directed to the Batavia wastewater system. The Batavia wastewater treatment system currently has 1.16 MGD of available unused capacity, sufficient to handle population growth in Batavia to the year 2010. The treatment and collection facilities are adequate to accommodate the additional discharge from the SSC, and Batavia is also studying its system characteristics to determine whether additional expansion will be warranted.

If the Batavia system becomes unavailable for use for some unforeseen reason, there are a number of other treatment facilities in the vicinity with adequate available capacity to accommodate the wastewater flow.

There is no significant new construction required to accommodate the wastewater generated from the main campus. There will only be pipeline extensions to any new buildings and facilities from the existing Fermilab wastewater system. Therefore, no siting or construction impacts are anticipated for sewage treatment at the main campus location.

Far Cluster. Wastewater generated at the far experimental areas is estimated to be 0.03 MGD. The State has proposed to construct a new wastewater treatment plant to accommodate the effluent from the far experimental areas and the village of Kaneville, which may experience some growth as a result of the SSC. A 0.15 MGD facility is planned near Kaneville. The proposed site of the wastewater treatment facility is along Welch Creek, about 0.5 miles west of the K4 experimental area. It is outside the 100-year flood plain and 0.5 miles from any habitation. Kane County has reviewed the proposed siting and regards it as compatible with land use plans. The planned process employs a multi-cell oxidation lagoon system and will conform with Illinois Recommended Standards for Sewage Works. A polishing lagoon will allow discharge to the low-flow receiving stream.

Overall, the impacts of the proposed new treatment facility appear relatively minor and controllable. Potential effects of construction include dust, noise, and traffic impacts. Given the relatively open nature of the proposed construction area and the modest extent of construction required, good construction practices should be adequate to control impacts within acceptable levels. Careful attention will be given to assure that effects on the drain tile system are minimized and alleviated. The facility is not expected to adversely affect flooding patterns in the vicinity, and specific siting and design studies will assure that the potential for such effects are minimized. These reflect important concerns of the Citizens Advisory Task Force.

Fermilab Village. Wastewater generated at the Fermilab Village can be expected to approach 0.15 MGD if the Village expands from its current 200 housing units to 500 housing units in the future. Currently, the wastewater from Fermilab Village is conveyed to the Naperville Springbrook Treatment Plant via the City of

Warrenville. There are other excess-capacity wastewater treatment facilities available within five miles of the Fermilab Village. Construction required will probably be limited to wastewater collection lines. Environmental affects will be limited to temporary nuisance impacts related to sewer construction (traffic, noise, and dust), which good construction practices can mitigate.

<u>Staff Family Residences</u>. Wastewater generated from family residences associated with SSC staff and dependents could amount to 1.0 MGD. The residents probably will be distributed over the greater metropolitan Chicago area, in much the same fashion as Fermilab staff and families are currently. As a result, the 1.0 MGD of additional flow will be diffused throughout a wide area. The present aggregate wastewater flows and outstanding permits in the vicinity of the SSC total 93 MGD. The amount of flow generated by the staff and dependents represents only 1 percent of this flow. Thus, the projected additional SSC staff and dependents will have minimal effect on wastewater management in the area.

<u>Solid Waste</u>

No new solid waste facilities will need to be built to manage the waste generated by the SSC. Solid waste generated from the SSC is estimated to be 30,000 cubic yards per year. This quantity will be landfilled, incinerated, or partially recycled. The potential impact of solid waste can be placed in perspective by recognizing that the four-county area presently landfills 480 times the anticipated solid waste production of the SSC each year. Current Fermilab solid waste volume accounts for a significant proportion of that estimated for the SSC.

Off-site landfilling is likely to be the primary means of solid waste disposal, particularly during the early years of the SSC operation. A number of large landfills located near the SSC site offer solid waste disposal options. In 1987, remaining landfill capacity exceeded 100 million cubic yards. The solid waste disposal requirements for the SSC will have little effect on available capacity in nortneastern Illinois.

The 17,000 cubic yards per year of solid waste that may result from the expansion of the Fermilab Village for staff and families is also relatively small compared to the remaining capacity in nearby landfills.

Overall, it is unlikely that the presence of the SSC could alter the siting and construction of landfills in the region area. The SSC itself will not require construction of a dedicated landfill facility.

The decreasing availability of landfill space and increasing cost of landfill operation may ultimately lead to decreased reliance on landfills and increased reliance on incineration and recycling. As is the case for the landfill alternative, area-wide incineration or recycling plans will not depend on the presence or absence of the SSC, and the SSC itself will not require an incinerator facility.

Hazardous Waste

The DOE estimates that the SSC will generate approximately 10,000 gallons of hazardous waste material annually. These modest quantities of hazardous waste will not require construction of any new, dedicated hazardous waste facilities beyond those necessary for temporary storage. The hazardous waste generated during SSC operation is quite small relative to the amounts generated throughout the state. For example, one Illinois university produces as much as 70,000 gallons of hazardous waste per year.

Illinois has one of the nation's five RCRA-permitted hazardous waste landfills. Because a dedicated hazardous waste facility is not contemplated, a negligible fraction of the existing landfill risk can be assigned to the SSC. Furthermore, the fraction of risk assigned to the SSC will itself be minimized by the use of volume-reducing methods mandated by Illinois law.

Fermilab itself generated 10,000 gallons of waste in 1986. Since a great proportion of the type of operations necessary for the SSC are part of Fermilab's current operations, it is likely that much of the projected hazardous waste for the SSC is already part of that generated at Fermilab. This waste includes freon, ferric chloride, lead contaminated solids, and solvents for degreasing.

The DOE has indicated an interest in exploring off-site landfill disposal of hazardous waste, possibly in conjunction with solidification. In 1986, Illinois' three permitted hazardous waste landfills accepted 288,000 cubic yards of hazardous waste, according to the Illinois Environmental Protection Agency. This is equivalent to 5,800 times the waste to be produced by the SSC. In 1986, Illinois industry produced almost 500 million gallons of hazardous waste. This is equivalent to 50,000 times the waste to be produced by the SSC.

The presence of Fermilab has established precedents for hazardous waste impact mitigation at scientific installations (e.g., the Fermilab water monitoring program). Fermilab monitors wells biennially to determine compliance with State of Illinois regulations. Laboratory staff analyze potable water wells for heavy metal content and check for organics in wells in the industrial area (a private testing firm provides the analyses). Fermilab also has a U.S. EPA interim hazardous waste storage permit that allows the temporary accumulation of waste prior to shipment to appropriate disposal locations. The permitted facility stores waste generated at Fermilab, including polychlorinated biphenyls (PCBs), used oil, and other assorted hazardous waste. (Fermilab has been gradually replacing its transformers that use materials containing PCBs.) Minimizing inventory and seeking environmentally acceptable alternative materials is a reasonable approach for the SSC to mitigate the hazard posed by these wastes.

Radioactive Waste

Operation of the SSC will produce small quantities of radioactive waste, as Fermilab currently does. The SSC will generate the same order of magnitude of radioactive waste as a hospital that provides radiation diagnostic and treatment services.

Only low-level, Class A waste, the least radioactive and least hazardous type, will be generated by the SSC. The DOE estimates that about 300 cubic yards of Class A low level radioactive waste (LLW) will be produced at the SSC annually.

Very little radioactive is generated in an accelerator using superconducting magnets compared to conventional magnets. Half of Fermilab low level waste comes from the fixed target physics program and half from the accelerator complex. The SSC would add a very large superconducting ring to Fermilab's present facilities. No fixed target physics program is planned for the SSC. These facts taken together suggest that the SSC would probably generate about the same volume of low level waste--or perhaps 10 to 20 percent more--than Fermilab.

Most of the waste produced will be solid (accelerator components and shielding); some will be tritiated water. Currently, the plan for disposal is to use tne tritiated water (and more water if necessary) to mix concrete for encasing the solid LLW. The DOE plans to dispose of LLW from the SSC at an out-of-state DOE facility. Current DOE policy requires that all LLW generated by Fermilab must be shipped to the DOE site at Richland, Washington.

Disposal of LLW is highly regulated; these regulations are, in effect, mitigation guidelines. No mitigation beyond federal regulations is anticipated to be needed for disposal of LLW from the SSC.

Following decommissioning, the SSC collider tunnel could not be used to store any radioactive components or other material, since the design of the tunnel is not suitable for such use.

Comments on the DEIS for the

Superconducting Super Collider in

ILLINOIS

Chapter 4
Environmental Assessment of
the Illinois SSC Site

Chapter 4

COMMENT

325 The State submitted an Environmental Assessment report to DOE in March of 1988. The purpose of this report was to assist the DOE in adequately addressing impacts and mitigation plans.

The State's review of the DEIS finds that information in the March 1988 Environmental Assessment has not been included in the DEIS. The State request DOE review the attached document and incorporate the information contained therein in the Final EIS.

Comments on the DEIS for the

Superconducting Super Collider in

ILLINOIS

Chapter 5
Single Campus Design

LETTER 1279

Chapter 5

COMMENT

324 The State finds that the single campus design alternative, as described in the attached publication, is the least cost, most efficient and environmentally best alternative possible for the SSC, if Fermilab is utilized to its maximum potential.

The State request that DOE evaluate this alternative in the Final EIS.

Comments on the DEIS for the

Superconducting Super Collider in

ILLINOIS

Chapter 6
Cost Study for the
Illinois SSC Site

Chapter 6

COMMENT

323 The State requests that the DOE include, as part of the Final EIS, a comparison of costs for the alternative sites and designs considered.

In preparing this analysis, DOE should utilize the attached report to develop costs for the Illinois alternatives, in order to ensure that the cost savings possible with Fermilab are appropriately included.

Comments on the DEIS for the

Superconducting Super Collider in

ILLINOIS

Chapter 7
Report of the Citizens Advisory Group on the Illinois SSC Site

Chapter 7

COMMENT

322 An Illinois SSC Citizens Mitigation Advisory Task Force has assisted in the identification of issues and concerns and suggested mitigation actions.

The State requests that DOE review the attached report by this group and within the framework of technical feasibility and cost, incorporate those suggestions in its mitigation plan for the Illinois SSC.

GENERAL INFORMATION ABOUT THE ILLINOIS SSC CITIZENS MITIGATION ADVISORY TASK FORCE

THE MISSION

The SSC Citizen Mitigation Advisory Task Force has a dual mission:

1. To identify and refine issues and concerns of local importance and recommend strategies useful to government planning.
2. To help shape the citizen participation process as the project moves from site selection through construction.

HOW THE GROUP WAS ESTABLISHED

Dialogue among local, county and state officials on the subject of public participation resulted in the concept of an advisory task force. The idea was to establish a group whose mind set would be that Illinois had been chosen as the site, and identification of local site specifics was required. In this context of moving toward the goal of site specific compatibility, and toward the future, allowed citizens from affected communities to sit together, share their concerns and develop their ideas, and provide valuable information for mitigation planning.

Local officials nominated and the County Board Chairmen from Kane, DuPage and Kendall Counties selected the Task Force members. The number of participants from each county was roughly proportional to the SSC ring and support of the SSC was not a condition of membership.

By the time the selection process was complete the State Mitigation Planning Team was preparing its response to the DEIS and thus the first task for the Task Force was to address the issues in such a way that their local specificity would provide useful advice to the State mitigation planning process and comment to the U.S. DOE in the context of response to the DEIS.

The Task Force met weekly for a 4-week period and devoted approximately 12 intensive hours to the preparation of the enclosed report. This report also appears as a chapter in the Illinois submission in response to the DEIS.

HOW THE TASK FORCE WORKED

The first of the four consecutive meetings was organizational and the State Mitigation Planning Team was invited to brief the group during the second part of the meeting.

In each of the next two meetings, the group broke into county groups. Discussion notes taken were given to the group facilitator who integrated them into a single document for review and discussion the following week. The same process was repeated. The last of the four meetings was a review and discussion of the second draft and subsequently finalized by the Task Force facilitator and submitted here. No attempt was made during the process to change, alter, or redirect the views or assumptions of the members.

The DEIS and the Illinois Environmental Assessment, Vol. 3, previously submitted to the U.S. DOE and Illinois maps were the basic resource materials used for the group's work.

ILLINOIS SSC CITIZENS MITIGATION ADVISORY TASK FORCE

AN ISSUES PAPER

October 14, 1988

ILLINOIS SSC CITIZENS MITIGATION ADVISORY TASK FORCE

AN ISSUES PAPER

October 14, 1988

INTRODUCTION

On September 22, 1988, the Illinois SSC Citizens Mitigation Advisory Task Force met for the first time to set the agenda for the subsequent month and be briefed by the Illinois mitigation planning team. At the September 27 Task Force meeting the group broke into three county subgroups for the purpose of raising issues specific to each. On October 4 the Task Force met and reviewed the interim draft that integrated the first set of notes from each of the county groups. On October 11, a second draft that reflected the additional comments from each of the county groups was reviewed by the whole Task Force. The content of this Issues Paper was developed after four task force meetings where a total of twelve hours was devoted to the development and refinement of issues.[1] In general, the issues and concerns raised in the county group notes appear to fall into several categories:

1. The identification of oversights, omissions or unclear information.
2. Mitigation measures.
3. The further detailing of issues to take simultaneous impacts into account.
4. The need for advanced planning that utilizes foresight and avoids an incremental approach.

Initially two out of the three counties prioritized the issues but did so in different ways. The Kendall County and Montgomery[2] people tended to prioritize the issues based on an understanding of the general concerns expressed by their communities. The DuPage people prioritized the issues on the basis

[1] See Appendix A for the issues list reviewed by the Task Force.

[2] Montgomery is actually in Kane County but geographically closer to Kendall County.

of time dependency--for example, land acquisition is the first action after site selection, thus land acquisition is the first item on the DuPage list,

As of this writing the Kane County group has not ranked the issues they have raised, but may do so. To preserve the integrity of the individual groups decisions, the following represent the issues as ranked by the Kendall and DuPage County task force members.

Kendall County and Montgomery	DuPage County (Time Dependent Order)
Traffic congestion	Land acquisition
Radiation and waste disposal	Blasting
Spoil disposal	Hauling/spoil disposal
Property values	Loss of local tax base
Visual/aesthetics of surface facilities	Electricity rates
Impacts of induced growth:	Groundwater
infrastructure planning and	Radioactive waste
financial planning	Loss of farm land)Considered non-
Land acquisition	Wildlife)issues for DuPage
Blasting	
Well and aquifer issues	

The Task Force members in both collective discussions and in the context of the county group's discussions raised and attempted to shape a means for citizen recourse in the event of problems or damages associated with the development of the SSC. The discussions included ideas for mitigating problems likely to arise in the acquisition and relocation stage and differentiated these from general impacts/problems associated with the construction of the ring and facilities.

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Among the DuPage Task Force members, land acquisition issues were ranked the top priority. They suggested the need for and use of a local point of contact for residents to provide answers to questions and resolve problems related to land acquisition and relocation. After further discussion they differentiated between land acquisition matters and all other problems that may arise and require mitigation or redress. It was suggested that a committee or "office of mitigation" with a role similar to that of an ombudsman be created to address general problems. The "office of mitigation" concept raised by the DuPage people was motivated by a broader question. . . whether or not after selection the state and the federal government would have a continuing interest in mitigation. In other words, will mitigation be reduced in priority after the SSC is awarded. They further suggested that an "impartial body" be established to hear citizen complaints, and that "body" be equipped with funds and authority to determine and award appropriate remedies in cases where people are adversely impacted. An example that was suggested to illustrate what problems may arise is the issue of property values of homes adjacent to the ring. Furthermore, they suggested that when construction contracts are let for bids, a condition of the bid (written into the specifications) include a requirement that bidders provide mitigation options in their proposals.

In their separate group discussion, the Kendall County and Montgomery people suggested and subsequently the Task Force as a whole agreed that the concept of a funded, authorized mitigation review board or boards (one or more as appropriate) be established to provide a vehicle for citizens redress and general protection in addition to what may be already available through the legal system. They thought initially that this review board might be comprised of county officials and citizens. They also thought this idea was a form of local recourse and it was the need for such recourse that the Task Force as a whole agreed would be useful and necessary.

With regard to property, the DuPage group agreed with the State proposed relocation assistance measure indicated in Volume 3, the Environmental Assessment (p. 35-36), that payment of a housing allowance of $22,500 and moving allowance was appropriate. The group suggested that the condemned houses be donated to organizations helping the homeless and the needy. Finally they urged flexibility in specific site location points for example, where possible adjustment should be made in the location of access shafts to preserve historic sites or particularly important private pieces of property.

Motivated by a concern about the selection of appraisers, the Kane County group on the issue of property and land acquisition has suggested arbitration be a part of the process and possible amendment to the 1985 Illinois SSC Act in this regard. The specifics could include a minimum of three independent appraisers, one selected by owners, one by the state and one by the appraisers and perhaps conceptually become a function of a "mitigation review board."

At the October 4 meeting, the Kendall County and Montgomery people discussed the basis for determining fair market value. They discussed the classic difficulty of the tax assessment value being below market value and the citizens caught between the historic desire to keep tax assessment value low and then at sale selling at higher values. The desirability of out of locale appraisers was discussed. One member who is particularly knowledgeable commented that if she were selling her home, she would get a higher appraisal for her home if her appraiser came from Chicago or Naperville than if he/she came from the local town.

Thus the question of who the independent assessors will be and how they will be chosen was raised as an important issue. Some fear a state policy of "bargain basement prices" for land acquisition will prevail, thus the interest conceptually in mechanisms that would attempt to assist citizens in the process.

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The Kane county group emphasized the importance of the state making good on the promise to negotiate the need for the western campus with U.S. DOE. They also emphasized the state commitment to spare homes and the town from land acquisition if the western campus is not constructed, i.e., prime farm land and old structures in Kaneville such as the 120 year old blacksmith shop, the oldest in Illinois and 100 year old farm houses.

Another issue raised in this context is a request to have identified by U.S. DOE all the possible land acquisition implied for expansion, such as the railroad spur to Kaneville or designated recreational lands. Similarly, DuPage queried whether or not additional shafts will be necessary for construction. Concern that "surprise" shafts may result in loss of additional surface areas was the root of the concern.

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The DuPage County group ranked blasting second in priority consistent with their time dependent criteria for ranking the issues. The Kendall County group did not initially discuss blasting, but at the October 4 meeting the

Kendall and Montgomery people suggested pre- and post-blasting inspection of area homes to determine if blasting actually caused any adverse affects. This might serve to protect citizens who might be affected and prevent abuse by some who might try to take advantage of the situation.

Kane County linked noise and blasting together. The Kane County discussion included the effect of noise and blasting near live stock and thoroughbred horses in confinement. They pointed out that there are an estimated 4,000 head of cattle, 2300 head of pigs and several horse breeding operations which would potentially require "relocation" during blasting near F4, E5, E6, E7, and E8. (See DEIS page 49.)

DuPage's discussion of blasting included a proposed mitigation strategy that would compensate affected people for nuisance value as well as for potential losses, for example, of sensitive equipment. They felt advance notice of blasting was appropriate and in general the State should insure for economic losses caused by blasting.

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DuPage ranked hauling next on their list and then added related noise as well, suggesting the use of birming as a potentially useful noise mitigation strategy. Included here is also the issue of excessive dust induced by truck traffic. The impact on Warrenville Road and the excessive dust resulting from N-S Toll road construction are already preexisting issues. Thus they suggest special access roads for trucks, the use of a maximum number of sites to dispose of spoils and the closest sites that would reduce truck mileage. The DuPage people further suggest avoiding rush hours for truck traffic and avoiding residential areas to the extent possible. To avoid traffic congestion they recommend advance planning, i.e., putting roads in before construction begins. Gridlock is already common place in some areas. Advance planning that includes the review of State, County, or local plans would assist in avoiding further problems. Both Kendall/Montgomery and DuPage emphasized enforcement of covered trucks during spoil hauls.

Kendall County and Montgomery people ranked traffic congestion and spoil disposal one and three in the prioritization. Kendall County is rapidly growing and traffic is increasing. The two bridges (south of Aurora) across the Fox River will not accommodate truck traffic thus Rt. 34 for construction routing is important but was not among those roads targeted for improvement. The whole area is not targeted for a road change for another ten years. They felt a 1990s transportation study is needed. Thus accelerating transportation plans or activities might avoid unnecessary inconvenience or transportation problems. This general issue, the need for advance planning and use of foresight, is what the Task Force as a whole agreed was at the root of many of the items they discussed. Kendall and Montgomery expressed concern about hauling from populated areas to nonpopulated areas potentially transferring impacts from one area to another. They felt it was important to know where the 17 (or more) spoils sites mentioned by the state team were located. It was suggested during the state briefing at the September 22 meeting that spoils did not necessarily have to be removed at every access shaft. The Kendall/Montgomery people suggest equitable distribution of the impacts of spoils removal and hauling be a factor in planning.

The Kane County Group identified where truck traffic might impact on schools and other areas of activities such as Dunham Road, St. Charles High School, E5, Lily Lake School, E7, and Kaneland Schools especially on Dauberman Road. They questioned whether Dauberman Road would be open for general use for routing children from Kaneville and Sugar Grove to school. It is now the primary and only artery. They further suggested that the routing of trucks not include: Main Street in Kaneville, Dunham, and Rt. 25 or County Club Rd. in St. Charles. They suggested Francis Road to Rt. 38 as an alternative route to avoid Kaneland Schools. They suggested that the need for new roads, such as the extension of Dauberman Road to Whilden to Camp Dean Road for spoil hauling to quarry #3 on Jericho Road near F4 will affect the environment. By way of example, they pointed out that according to a 1978 Kane County Natural areas inventory, this road development would go through a natural area developed for the Forest Preserve by Kane County (located north of Jericho Road, S.E. of Camp Dean Girl Scout Camp). In addition it was noted that Camp Dean Road is heavily traveled seasonally by families transporting scouts to camp. Based on this analysis they felt this may necessitate a railroad crossing from Rt. 30 to gain access to F4 and further suggest this may worsen the problems of Rt. 30.

The Kane County people suggested that the railroad Spur from Big Rock to Kaneville be located on DOE property rather than taking more farm land for this transportation purpose. Furthermore, they suggest the railroad crossing over Rt. 30 should be constructed as an overpass or underpass instead of a surface crossing. Route 30 is a high-traffic road which would have safety compromised by another surface railroad crossing.

Blackberry township, Kane County, in a separate communication indicated a citizen concern about road upgrades and safety features such as left turn lanes, intersection illumination and demand traffic signals along Route 47 from Waubansee Community College north to Elburn. Also they are concerned about the condition of the Harley Road railroad overpass, this is the only overpass between Randall Road and Route 38 at Meredith Road. Present plans include closing this road (the overpass is a narrow wooden structure) as a through route to Route 38. Repair is beyond the township's ability to fund from present sources. (The full letter was sent to the Illinois Department of Transportation and is appended to this report.)

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In the area of socioeconomic impact the issue of loss of local tax base was raised in the Kane County group and among the DuPage group members. In the Kane County discussion the loss of tax base especially the estimated 10 to 11 percent to Kaneville and the impact on the Kaneland Schools was of concern. After further discussion on October 4 the Kane County group decided that raising tax rates, one of the state mitigation options, was an inappropriate mitigation strategy. The DuPage group viewed loses of homes and businesses as displacement not tax base elimination and emphasized the offset in other revenues as outlined in the Draft EIS. They considered the 1989 loss at 1.3 million as estimated in the DEIS Volume IV, Appendix 14 as minimal if placed in the context of the anticipated longer term benefit.

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As was indicated earlier, the Kane County group linked noise and blasting. (See discussion of blasting). Other areas of noise concern were related to background noise levels that may have been overlooked such as the noise associated with proposed expansion in traffic at DuPage, Aurora, and O'Hare airports over Aurora Control Center. The incremental additional noise of the truck traffic in this context was raised as an issue. Concern was targeted on the impact of noise on the Kaneland School E6 and the Waubansee Valley School.

The Kane County group also noted omissions on the State map such as St. Charles H.S. and Norris Recreation Center plus a new home development of 1000 homes near E9 suggesting a portion of dense population may have been overlooked.

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Fear of radiation exposure from radioactive waste was identified by the Kendall County/Montgomery group. It was suggested that many people don't understand low-level and high-level radioactive waste regulations and handling but fear that at decommissioning the tunnel may be attractive place to store radioactive waste. The Task Force as a group reinforces the necessity to conduct an EIS on decommissioning. The group acknowledged the state environmental assessment Volume 3, page 72, characterization "lack of suitability" to describe why this use would not take place, but questions were raised concerning what it might take to go from "unsuitable" to "suitable".

The Kane County group's discussion of radiation included the acknowledgment of the dangers associated with radiation, and its cumulative effect as the basis of their concern. In this regard fear of beam loss, the basis for the 10mrem calculation, the radiation implications of a beam loss through a shaft site, and the potential impact of electromagnetic fields on humans were all identified as also of concern.

On the subject of waste the group's distrust of the federal commitment to ship wastes to an appropriate waste facility was expressed by a request for a commitment document that specifies a location for the waste and a storage limitation of 60 days on site. The motivation here is to assure that the regional bad experience with an industrial site in West Chicago is not repeated. The group also feels that the same kind of commitment should be made for mixed waste.

DuPage County group's single comment on the subject was the recommendation to use Fermilab's temporary storage capability.

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The subject of water and drainage arose in all discussions. The Kendall County group questioned sedimentation impacts. Adding to their previous discussion, the Kane County group operating under the assumption that significant silting of the aquifer and water loss will occur, questioned the availability of water for live stock demands and others affected by water loss. DuPage County members identified the impact on the water table and private wells as key and suggested contamination protection. The Kane County group suggested a variety of potential impacts concerning water supply and contamination and suggested that a definition of an "affected well user" be developed. They suggested a definition for a radius of responsibility for water supply be established as well, and a methodology by which people can document water loss should it occur, during SSC construction. Additional discussions about water focused on the discrepancies between the state environmental assessment Volume 3[3] and the federal DEIS and the federal emphasis on ground water supply. Illinois states that from 6 to 31 wells will have to be relocated (page 49, Il. Volume 3) whereas the U.S. DOE states that 320 wells lie within the zone for the ring (DEIS Vol. I, Ch. 4-21). Illinois does not identify concerns to the ground water supply, yet the U.S. DOE states throughout the DEIS that Illinois will experience local water level declines and aquifer overdraft which "...would be measurable at the regional level and of long-term consequence". Further it states "...that the impact cannot be effectively mitigated within the time frame of the project." (DEIS Vol. 1,

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[3]Supplement to the Site Proposal for the Superconducting Super Collider in Illinois, Volume 3, Environmental Assessment.

Ch. 5.1.2-28-29.) The statement by the DEIS that these overdrafts and significant depletions "...would recover once water withdrawals cease" (after the 25-30 year operation) is a concern.

Specific concern for Big Rock Drainage District 2 consisting of 3000 acres of watershed was expressed. The group suggested that this area was not included in the discussion of surface use. Concern about tile disruptions as a result of the proposed Kaneville sewage treatment plant and SSC waste water discharge was expressed. The group thought this would cause Welch Creek to rise, and affect the area septic fields and tile drainage. The tile system currently drains field acreage and the communities of Big Rock and Kaneville.

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In the general category of safety, several concerns were raised. The Kendall County group mentioned citizen concern was to some degree focused on the question of fire pertaining to the ring. The fear of explosion underlies the question of whether the size and scale of the ring magnifies any impacts. Kane County members expressed concern about security at the E and F sites and whether the aesthetics enable security at each location. The Kane County group also noted several gas pipelines near the K3 sites that were not identified on the state map. Elaborating on the issue of the gas lines parallel to Dauberman Road along the entire length of the "far cluster", the group identified four lines that are under high-pressure, three measuring 24 inch and one 36 inch in diameter located .3 to .4 miles from several access points along Dauberman Road. They also identified low and high pressure lines adjacent to St. Charles H.S. and through the Fox Chase Development, leading directly to the E9 site.

The Kane County people disagreed with the state conclusion (Volume 3) that area fire and police protection was adequate. While there may be a difference in risk assessment at the basis of the disagreement, the Kane County people indicated that the Western Kane County communities rely on county provided police service and noted that much of the fire protection to towns around the ring is provided by volunteer departments. They recommended that the State address the issue of funding, training, manpower, and equipment for fire departments in case of fire at regenerating plants, etc., or locations where chemicals and/or gases are stored.

Air pollution concerns were raised by Kane County noting the nonattainment status of the general area for ozone and carbon monoxide and excession of standards for suspended particulate emissions for the construction phase.

. . . .

As an example of an advanced planning strategy, the Kane County group recommended that the Department of Conservation consider targeting grant money to the Kane County Forest Preserve for land purchase. With the growth projections, the influx of population and addition of new roads, important possible future holdings could be either developed or otherwise become unavailable before they can be acquired by the Forest Preserve District.

ILLINOIS SSC CITIZENS MITIGATION ADVISORY TASK FORCE

Kane County

Mr. John B. (Jack) Powers
2 South 715 Oakwood Terrace
Elburn, IL 60119

Mr. Robert Anderson
4 North 972 Brown Road
St. Charles, IL 60174

Mr. Jim Coleman, Jr.
Coleman Land Company
703 East Main Street
P.O. Box 594
St. Charles, IL 60174

Mr. Jim O'Connell
47W961 Main Street Road
Elburn, IL 60119

Ms. Jeanette Wampach
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Mr. Tom Metzger
109 Third Avenue
Mongomery, IL 60538

Ms. Pam McConnell
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Ms. Mary Ochsenschlager
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Sugar Grove, IL 60554

Mr. Ron Gullstrand
Box 94, Thatcher Road
Maple Park, IL 60151

Mr. Pete Zachary
45 West 348 John Street
Big Rock, IL 60511

Ms. Betty Stafford
77 Highgate
St. Charles, IL 60174

Mr. John Stafford
77 Highgate
St. Charles, IL 60174

Ms. Carol Bayer
45 Stirrup Cup Court
St. Charles, IL 60174

Mr. Johan Bayer
45 Stirrup Cup Court
St. Charles, IL 60174

Ms. Carol Berger
P.O. Box 66
Wayne, IL 60184

Mr. Robert E. Pierson
46W498 Lasher Road
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Sugar Grove, IL 60554

Mr. James Scott
Box 414, Route 1
Wheeler Road
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Sugar Grove, IL 60554

Mr. Michael Zitkus
4N352 Citation Lane
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DuPage County

Ms. Debbie Tenison
129 Split Oak Road
Naperville, IL 60565

Dr. Manfred Kaminsky
906 South Park Avenue
Hinsdale, IL 60521

Mr. Richard J. Tarulis
830 North Elsworth
Naperville, IL 60540

Mr. Wallace P. Miller
P.O. Box 236
Wayne, IL 60184

Mr. John Brining
5 South 563 Kirk Place
Naperville, IL 60540

Mr. Howard Klee, Jr.
1164 Summit Hills Lane
Naperville, IL 60540

Mr. Timothy Ory
809 N Sleight St.
Naperville, IL 60540

Kendall County

Mr. Edward P. Gawne
7 Timbercreek Drive
Yorkville, IL 60560

Mr. Richard Saletri
115 Locust
Oswego, IL 60543

Mr. Robert F. Welch
6 Pletcher Drive
Yorkville, IL 60560

SIGNATURE PAGE

Howard Klee Jr.
Wallace T. Miller
Richard J. Tomlin
Debbie Tenison
[illegible]
John R. [illegible]
Michael [illegible]
Johan E. Bayer
[illegible]
[illegible]
Jeanette [illegible]
Robert E. [illegible]
James E. O'Connell
Mary Ochsenschlager
James M. Scott
Pete [illegible]
Tom [illegible]
Robert [illegible]
Edward B. [illegible]
Richard A. [illegible]

ILLINOIS SSC CITIZENS MITIGATION ADVISORY TASK FORCE

APPENDIX A

ISSUES LIST

Groundwater
Spoil Disposal
Transportation/Traffic Congestion
Sedimentation
Radiation/Waste Disposal
Property and Land Acquisition
Agriculture/Prime Farmland
Natural Areas/Wildlife
ISGS Blasting
Visual/Aesthetics
Property Values
Education
Induced Growth
Jobs
Solid Waste
Utility Rates

BLACKBERRY TOWNSHIP Kane County
COUNTY OF KANE
ELBURN, IL 60119
(312) 365-9109

October 3, 1988

Ms. Linda Cooper
Citizen's Mitigation Task Force
IIT Research Institute
10 West 35th St.
Chicago, IL 60616-3799

Dear Ms. Cooper:

Because of the time constraints of the Task Force, I have decided to write you directly concerning one of the primary concerns of the Blackberry Township citizens.

On Friday, September 30, I talked to Mr. Keith Sherman of IDOT to learn of plans for State Route 47 from Waubonsee Community College north to the village of Elburn. This stretch of highway has seven subdivisions with multiple entrances onto Route 47, (2) major county road crossings, (3) high traffic county road entrances and one high traffic gravel pit entrance. Mr. Sherman indicated the only plans for Route 47 were the upgrading of the I-88 interchange from a single exit/entrance to a full interchange. He also advised me to seek further information from Mr. Bill Barbel of the Schaumburg office. Mr. Barbel was not available on Friday, September 30.

The concern of the people residing in this area is for up-grading the safety features now available which include left turn lanes, intersection illumination and demand traffic signals.

We would recommend left turn lanes at Scott Road, Finley Road, Nottingham Drive, Willow Creek Drive, Smith Road, Timber Crest Drive, Kenmar Drive and Hughes Road. At the intersections of Main Street and Keslinger Roads, we would recommend left turn lanes and demand traffic signals. All intersections should be illuminated.

Another concern is the condition of the Harley Road railroad overpass. This is the only overpass between Randall Road and Route 38 at Meredith Road. It is a very narrow wooden structure. Present plans are to close this road as a through route from Kes-linger Road to Route 38 in the event it is condemned and repair would be expensive beyond the Township's ability to fund from present sources.

I'm not sure of the appropriate method of bringing these concerns to the State, but please include them in your communications.

Respectfully,

John B. Powers
Blackberry Township Supervisor
2S 715 Oakwood Terrace
Elburn, IL 60119

cc: Mr. Keith Sherman - IDOT
Mr. Bill Barbel - IDOT
Mr. Stan Yonkauski - Illinois Dept. of Energy
Mr. Frank Miller - Kane County Board

Comments on the DEIS for th

Superconducting Sup ollider in

ILLINOIS

Chapter 8
Illinois Good Neighbor
Legislation

Chapter 8

COMMENT

321 The State, in recognition of the concerns Illinois citizens and local governments potentially affected by the SSC might have concerning impacts to property and tax revenues, has enacted the attached Good Neighbor Legislation.

To more realistically characterize the level of impact the SSC will have on Illinois, the State request DOE to incorporate the provisions of this legislation into its impact assessment procedure in the Final EIS.

LETTER 1280

BAKER & McKENZIE

ATTORNEYS AT LAW
ONE PRUDENTIAL PLAZA
130 EAST RANDOLPH DRIVE
CHICAGO, ILLINOIS 60601
TELEPHONE (312) 861-8000
CABLE: ABOGADO · TELEX 25-4425
TELECOPIER (312) 861-2899

AMSTERDAM
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GENEVA
HONG KONG
JUAREZ
LONDON
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MANILA
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MEXICO CITY

MIAMI
MILAN
NEW YORK
PALO ALTO
PARIS
RIO DE JANEIRO
RIYADH
ROME
SAN FRANCISCO
SAO PAULO
SINGAPORE
SYDNEY
TAIPEI
TIJUANA
TOKYO
TORONTO
VALENCIA
WASHINGTON, D.C
ZURICH

September 27, 1988

ROBERT L. BERNER, JR.
(312) 861-2890

Dr. Wilmot Hess
Chairman
SSC Site Task Force
U. S. Department of Energy
Washington, D. C.

Re: SSC/Fermilab

Dear Dr. Hess:

Our law firm consists of approximately 1,100 attorneys practicing in forty-four offices located in twenty-six different countries. Our Chicago office is the largest and was the original office of our firm. The first of our foreign offices was established forty years ago.

Since the late 1940's we have attracted for temporary training in our Chicago office as well as for permanent residence in the Chicago area lawyers from dozens of countries around the world. We have learned first hand that the Chicago metropolitan area is an extraordinarily good place to attract and maintain professionals. It offers superior academic resources, cultural activities, physical environment and the other factors that go to affording an excellent quality of life.

In our professional life we serve the needs of many multinational companies throughout the world. We frequently are involved in site selection decisions by these companies. Our various offices do not compete

BAKER & MCKENZIE

Dr. Wilmot Hess
Page 2
September 27, 1988

with one another in this regard. As a matter of self interest, we are indifferent to the particular location chosen by our clients. Our interests are served when our clients select the location most suitable for them. On this basis, we find that recommending the Chicago metropolitan area to organizations that need the resources and amenities similar to those required by the SSC project is in the best interests of those clients and is almost unfailingly the correct and a successful site choice for the clients.

We point that out because we write this letter in support of the State of Illinois proposal to site the SSC here. You are familiar with the fiscal and political arguments that clearly support Illinois' case. We write you here only to tell you of our personal experience over the last forty years, an experience which suggests to us that Illinois is also the ideal location for the SSC.

Thank you for your consideration.

Sincerely yours,

Robert L. Berner, Jr.

RLBJr:

LETTER 1281

Vernon R. Loucks, Jr.
Chairman and
Chief Executive Officer

Baxter Healthcare Corporation
One Baxter Parkway
Deerfield, Illinois 60015

312.948.3600

Baxter

September 30, 1988

Dr. Wilmot Hess
Chairman
SSC Site Task Force
U. S. Department of Energy

Dear Dr. Hess:

I am writing to urge you to locate the new Superconducting Super Collider at Fermilab in Batavia, Illinois. A review of the draft Environmental Impact Statement shows that the Illinois site has few problems and many important benefits to the project.

We are experts at building large public works projects here. This is a major industrial center with the work force and the leadership to build the SSC quickly and efficiently. In addition, northern Illinois has ample electrical power available, and an excellent infrastructure in transportation. O'Hare International Airport supplies Fermilab with unmatched travel convenience for visiting scientists from around the world. Our roads and industrial infrastructure in the western suburbs are outstanding. The water supply at the site is very good, and is actually improving as we link the city's Lake Michigan water to the west suburban water systems.

Our tunneling expertise has been demonstrated by the remarkable TARP ("Big Tunnel") project, and the incentive package in our proposal, which offers to build the SSC tunnel for D.O.E., is backed with TARP's success. TARP has already excavated nearly four times more solid rock than the SSC ring will require, and it was completed on time and on budget.

Most important to your consideration must be the cost savings afforded by the existence of Fermilab and the human capital we as a nation have in place at that facility. Fermilab's talent and its spirit can be built upon if you site the machine in Illinois. SSC is an extension of the engineering, the mission, and the award-winning research at Fermilab. It is simply the most logical place to build the SSC. The Chicago area is eager

Baxter

Dr. Wilmot Hess
September 30, 1988
Page 2

to begin to work with D.O.E. next year to make the SSC the preeminent physics research facility in the world.

Thank you for your fine efforts to build this impressive project. I wish you the best of luck for its success.

Sincerely,

Vernon R. Loucks, Jr.
Chairman

eg

LETTER 1282

Borg-Warner Corporation

September 29, 1988

Dr. Wilmot Hess
Chairman
SSC Site Task Force
U. S. Department of Energy

Dear Dr. Hess:

All of us in Illinois are excited about the fact that Illinois is being considered as a prospective sight for the SSC at Fermilab.

There are many unique aspects about Illinois, however, the one I would like to highlight is the public-private partnership that has been exemplified among our leadership. This is manifested in the fine relationship between the business leaders and our Governor as well as the Mayor of Chicago and other political leaders. This, in my opinion, is unique in the U.S. and optimizes the talent of each without interfering with each other.

We look forward to a positive decision for Illinois.

With kindest regards, I remain,

Very truly yours,

James F Bere

JFB:lmc

IIA.1- 2842

LETTER 1283

the Rothschild realty group

DEVELOPERS FOR INDUSTRY

3000 Glenview Road, Wilmette, Illinois 60091, (312) 256-7700, FAX: (312) 982-0961

October 3, 1988

Dr. Wilmot Hess
Chairman
SSC Site Task Force
U. S. Department of Energy

Dear Dr. Hess,

We urge your task force to seriously consider the State of Illinois as the No. 1 site to receive the SSC. We respectfully submit that the factors comprising this decision will point to the proposed site with the Fermilab's influence, together with all of the other advantages, should you make Illinois the undisputed first choice.

It is hopeful that this decision will be made on pure merit rather than any political influence which may used by some other state.

Sincerely,

Herbert F. Rothschild

HFR:lm

LETTER 1284

JEFFREY B. SLEMMONS
ATTORNEY & COUNSELOR AT LAW

6146 N. NORTHWEST HWY.
CHICAGO, ILLINOIS 60631
(312) 631.7798

September 20, 1988

Dr. Wilmot Hess
Chairman
SSC site Task Force
U.S. Department of Energy

Dear Dr. Hess:

May I add my voice to the broadly based groups of supporters of Illinois as the best site for the SSC. Illinois offers not only the advance preparation and structure afforded by Fermi Lab and Argonne but proximity to academic and cultural resources that can combine to make the SSC the genuinely world leading research and analysis facility that it must be

------In this time of bugetary restriction, the in place support that Illinois offers makes it the only legitimate contender for the SSC. I sincerely hope that the clear savings offered by Illinois carry the weight that the savigns deserve. As appropriation measures are argued in the Congress, the taxpayers will demand that all possible savings and synergies between the SSC and ongoing research and development have been utilized. Only Illinois can offer such clear cut economies.

I thank you in advance for your consideration of the Illinois contributions and site promise.

Sincerely Yours,

Jeffrey B. Slemmons

IIA.1- 2844

LETTER 1285 (CONTINUED)

UNIVERSITY OF ILLINOIS

OFFICE OF THE PRESIDENT
[illegible] HENRY ADMINISTRATION BUILDING
[illegible] SOUTH WRIGHT STREET
URBANA, IL [illegible]
(217) 333-[illegible]

September 29, 1988

Dr. Wilmont Hess, Chairman
SSC Site Task Force
at the Department of Energy

Dear Dr. Hess:

I am writing to express my conviction that the success of the SSC Laboratory, its potential to contribute to science education and its impact on the regional and national economy all can best be exploited at the Illinois site.

The most critical factor in the success of the SSC will be its ability to bring together a highly talented and creative physics and engineering staff. In order for construction to be accomplished on schedule and on budget that staff will have to be assembled rapidly once the site is established. At no other site can that be done as quickly or as effectively as at Fermilab.

There are two crucial and unique advantages. First, Fermi already boasts precisely the kind of staff that will be required for the SSC, and staff extremely difficult to recruit. Secondly, the Fermilab site benefits enormously from its proximity to O'Hare airport. During the construction of Fermilab (on schedule and under budget) much of the expert help that was needed was made available just because uniquely qualified individuals from all over the country could be brought to the laboratory at short notice even for only a partial working day.

No matter where the Laboratory is situated it will surely make important contributions both to science and to science education. But at the Illinois site the laboratory will not only be in the immediate vicinity of the major institutions of the Chicago area (the campus of the University of Illinois in Chicago, The University of Chicago, Northwestern University, Illinois Institute of Technology and Northern Illinois University--to name a few) but also within 200 miles of the University of Wisconsin, Michigan State University, Indiana University, Purdue University, the University of Michigan, the University of Illinois at Urbana-Champaign, the University of Iowa, and the University of Notre Dame.

These major research universities, the heartland of U. S. academic science, serve more than a-third-of-a-million students. They produce a large fraction of the nation's science and engineering degrees and boast faculties of the highest quality and of a size that is commensurate with their educational task. The unique proximity of the Fermilab site to this major concentration of the country's institutions for higher education will certainly maximize the impact of the SSC upon the national community of science and engineering students and scholars.

Finally I must mention the potential impact of the SSC Laboratory upon economic factors. Granted the science and technology it produces will be a major economic asset to the country no matter where it is located. Granted the new laboratory will provide a stimulus to the local economy no matter where it is located. However, once again in this respect, there is something unique about the Fermilab site. Within a decade of the commissioning of the SSC Laboratory the scientific interest of the Fermilab facilities will begin to wane. To avoid a significant negative impact on the surrounding region another major investment would have to be made in what would then be obsolescent facilities. The onus of closing down a major installation has never been welcomed by agencies of the U. S. government. That onus can be effectively and efficiently avoided--or at least indefinitely postponed--by locating the SSC at the Fermilab site.

I truly believe that the advantages of the Fermilab site are overwhelming and overriding. I hope these arguments will be of some help to you.

Sincerely,

Stanley O. Ikenberry

Stanley O. Ikenberry
President

ms

LETTER 1286

WILLIAM F. CELLINI

October 3, 1988

Dr. Wilmot Hess, Chairman
SSC Site Task Force
Illinois Ambassadors
233 South Wacker Drive
6300 Sears Tower
Chicago, IL 60606

Dear Dr. Hess:

I serve as Executive Director of the following three infrastructure related associations:

Illinois Asphalt Pavement Association (IAPA)
Illinois Concrete Pipe Association (ICPA)
Precast-Prestressed Producers of Illinois (PPPI)

All three associations have formally committed their support to the successful siting of the SSC at Fermilab. Each of these associations has the majority of its capacity and expertise located in Chicago area. No where in the U.S. will a larger more skillful work force be available to produce the facilities necessary to support the SSC project.

I might also add that I serve as Executive Director of the Illinois Association of Sanitary Districts. One of our members, the Metropolitan Sanitary District of Chicago, has undertaken one of the greatest tunnelling efforts in history - the 31 mile long Deep Tunnel project. While the Deep Tunnel dwarfs the proposed SSC project - no better dress rehearsal could be imagined.

I believe Illinois will outshine the other competing states with respect to quality of life, academic resources and community support. I know Illinois will be unsurpassed when it comes to engineering and industry necessary to make the project a reality. If you choose Illinois, we can make it work.

Sincerely,

William F. Cellini

William F. Cellini

WFC:jla

IIA.1- 2847

LETTER 1287

NORTHERN TRUST CORPORATION

FIFTY SOUTH LA SALLE STREET

CHICAGO, ILLINOIS 60675

WESTON CHRISTOPHERSON

September 26, 1988

Dr. Wilmot Hess
Chairman
SSC Site Task Force
U.S. Department of Energy

Dear Dr. Hess:

In lieu of oral commentary at the Aurora meeting in early October, these written comments are meant to convey my strong feeling that SSC should be located in Illinois. The same bias that has caused me to spend my entire business life in Illinois is part of my conviction that here is the best home for SSC.

While I'm sure that technical considerations and economic factors are already well documented, one point that seems unassailable to me is this: not only does the existence of the world-class Fermilab offer huge dollar benefits to SSC if located in Illinois but the choice of another site likely would drain Fermilab of its brain power over time, possibly even destroying its viability. The existence of Fermilab, in which all the citizens of this country have a large investment, ought not to be jeopardized but ought to be viewed as a compelling reason for siting SSC adjacent to this national treasure.

What I want primarily to write about, however, is not of a technical or economic nature. It is simply that Chicagoland is a wonderfully fine place in which to live and in which to pursue professional and business interests. Many of the resources we take for granted will be of enormous benefit to the people who will constitute the SSC family. Some of the country's most distinguished research and teaching universities are located here and available not only from the professional perspective of those who will work at SSC but for their personal enrichment and that of their families. In Hyde Park, home of the University of Chicago, there is perhaps the country's most distinguished cluster of Theological Seminaries. In many ways, Chicago provides an intellectually stimulating environment.

Northern Trust Corporation
Chicago

September 26, 1988
Dr. Wilmot Hess

Page 2

Chicago has a world-renowned symphony orchestra, a distinguished Lyric Opera, and a range of world-class museums. We are building an oceanarium at the Shedd Aquarium. This beautiful and unique educational and entertainment facility will provide natural habitat for marine mammals of the Pacific Ocean.

We have a great variety of residential choices--whether in the City or in the Suburbs. Chicago is a first-class retailing center. We are replacing New York in terms of what the theater has to offer. Our sports teams may not be frequent champions but they are fun and they add to the diversity of life here. Ours is an ethnic mix of people that makes for a wholesome and stimulating environment.

Our transportation facilities are second to no other large city in the country. O'Hare is a major hub for air travel. Our rail-road commuter lines offer excellent service. Our expressways are busy but not nearly as congested as those in other major cities.

This is not a perfect city--we have crime, drugs, poverty, inner city schools that are not as good as need be. The important thing, though, is that leaders in business, the professions, government, religion and others work together in a commitment to alleviating the problems that exist. A broad-section of people, representing virtually every social and economic segment of Chicago, triumphed this summer in bringing about a school reform plan that will dramatically change the quality of education in the City of Chicago over time.

This is one of America's most interesting and hospitable cities and a genuinely nice place to live and work. The Northern Trust Company stands ready to be of help to the people who will be moving into our community to work at SSC. One of our core strengths is that of serving the private banking, personal financial consulting, and asset management needs of professional people and their families. Some of Chicago's other major banks offer similar services. We would view our responsibility as being that of helping SSC families settle into our community with ease and with a sense of security and comfort.

We realize that you and your colleagues are being deluged with arguments ranging in content from hard facts to emotional appeals. All I've tried to do is make the case that Chicago is a nice place on balance and that the people drawn to SSC will find life here to their liking.

Sincerely,

Wes Christopherson

LETTER 1288

October 10, 1988

Dr. Wilmot Hess, Chairman
SSC Site Task Force
ER-65/GTN
Office of Energy Research
U.S. Department of Energy
Washington, DC 20545

Dear Dr. Hess:

I know that you must be getting a lot of letters like this one, because I know all of my neighbors feel as I do. So pleases bear with me.

Me and my family moved to the St. Charles area to be living
1 in an area that is away from all the hussle and bussle of the Chicago city life. We thought that we moved to an ideal area where we could bring up our young family. However, we now find that the SSC will end all of this and actually place my families welfare in doubt. Since when should our government be allowed to force us to live above an experimental device which has not been shown to be harmless. Reading the Environmental Impact Statement has only increased my concerns about my families welfare. How are my children going to be protected from the hundreds of trucks hauling materials to and from the access shaft areas? they must stand on the corner to wait for their school bus to arrive, and then are dropped
2 off on the same corner. Will you stop this traffic during those designated hours? The EIS doesn't say so. Nor does the EIS indicate that my childrens' school is currently under construction on the corner of Bolcum and Burr roads. Bolcum road will be one of the most heavily used haul roads because it is situated between both the E8 and F8 access shafts. Why doesn't the EIS take our childrens safety into consideration?

You have 6 other sites where this project can go, and every
3 other selection involves fewer people and possibly the loss of fewer lives. You must in all conscience site the SSC in one of those other locations.

Sincerely yours,

Carla Williams
7N140 Nancy Lane
St Charles Il 60175
312-46?-4025

IIA.1- 2850

LETTER 1289

OCT. 10,1988

Dr. Wilmot Hess, Chairman,
SSC Site Task Force
ER-65, G-304
Germantown, Office of Energy Research
U.S. Dept. of Energy
Washington, D.C. 20545

Dear Dr. Hess;

During the past 6 months I have followed the planning and site selection for the SSC with great interest. After a fair amount of review and reading of much information in local papers I feel that the SSC is necessary project and will be best placed in Illinois. Illinois has the Fermi Lab, good building site, expert labor force, excellent educational and technical schools as well as the social aspects that are necessary to support a major project like the SSC.

1 I am currently in college and will be entering the job market. I believe the SSC will help the area have many good research jobs available. The Hi-Tech Corridor is the place for the SSC. The State of Illinois has shown its willingness to be a good neighbor, which is more than I can say for the minority group that oppose the SSC in Illinois. Illinos has the ability to work with the area residence to mitigate many of the so called negetive aspects of this project and I feel they have taken some goof faith steps to show they are truly concerned about the area residence. More may need to be done and I feel that the most important thing to do is only take the amount of land that is absolutely necessary for siting the SSC in Illinois. I would be happy to have the Fermi Lab or SSC as a neighbor rather than the Aurora Municipal Airport that now borders my community. I support the SSC in Illinois.

Sincerely yours

April Mason

April Mason
92 Neil Rd.
Sugar Grove Il. 60554

LETTER 1290

October 10, 1988

Dr. Wilmot Hess, Chairman
SSC Site Task Force
ER-65/GTN
Office of Energy Research
U.S. Department of Energy
Washington, DC 20545

Dear Dr. Hess:

My family and I are against siting the SSC in Illinois for the following reasons:

1. Illinois has a regional groundwater overdraft and both direct and indirect SSC water usage will only make matters worse.

2. There is a local groundwater shortage situation in the northern arc of the ring near Campton Township where as many as 20,000 people reside.

3. The DEIS in Appendix 11, Sec.11.3.3.3 indicates that some wetland habitats at the Illinois site will be adversely impacted or lost. You cannot allow this to happen.

This is just a very short list among many as to why Illinois will not be a good home for the SSC. Please put it in another state where the local people will welcome you---for we won't!

Sincerely yours,

Marjorie Meanger

LETTER 1291

Route 2, Box 299-8
Rougemont, NC 27572
October 7, 1988

Dr. Wilmot Hess, Chairman
SSC Site Task Force
ER-65/GTN
Office of Energy Research
U. S. Department of Energy
Washington, DC 20545

CATEGORIZE COVER LETTER ONLY THE REST IS [illegible] NC-154.

Attn: SSC DEIS Comments

Dear Dr. Hess:

Please address the following questions which pertain to the attached material:

1 1. The DEIS states that Dept. of Energy may provide their own fire protection. Mr. Dick Nolan said that DOE would provide their own protection. What will be the extent of the protection to be provided by DOE?

2 2. Who is going to provide emergency services, especially rescue, during construction?

3 3. Who is going to pay for the increases in equipment needed to serve the increase in population since North Carolina has the highest immigration?

Any assistance you could offer in answering the above questions would be greatly appreciated.

Sincerely,

Howard Wade Ellis

Howard Wade Ellis

IIA.1- 2853

MORIAH VOLUNTEER FIRE DEPARTMENT
Route 1, Box 215B
Rougemont, North Carolina 27572

Good morning. I am Chief Wade Ellis of the Moriah Volunteer Fire Department.

I would like to talk to you about fire protection concerning the Superconducting Super Collider, because between half and two thirds of the proposed campus site is now being protected by the Moriah Volunteer Fire Department and the other part of the campus site is served by Bahama Volunteer Fire Department and Butner Fire Department.

The part of the tunnel that is in Durham County will be served by Bahama Volunteer Fire Department, the portion of Person County to the west part of the circle will be covered by Hurdle Mills Volunteer Fire Department, the northwest and part of the northern circle is covered by Roxboro Fire Department, the northern part of the circle around the county line of Person and Granville is covered by Triple Springs Volunteer Fire Department. In Granville County, part of the circle near the campus is covered by Stem Volunteer Fire Department, the southwest part of the circle is covered by Providence Volunteer Fire Department, the east part of the circle is covered by Berea Volunteer Fire Department and the northeast and northern part of the circle is covered by Cornwall Volunteer Fire Department. Eight of the ten Fire Departments that would cover the fifty three mile SSC area are volunteer fire departments.

I would like to talk about the part of the SSC campus area that Moriah and Bahama Volunteer Fire Departments would be covering, because Butner Fire Department only covers what is known as the National Guard Range area.

Moriah Volunteer Fire Department is not equipped to handle an expansion of this size and potential danger area, as far as hazardous materials are considered, because only about four of our personnel has any hazmat training, so our personnel would have to be trained in hazmat incidents. Anytime you are storing, loading, unloading and trucking hazardous materials there is always a potential for hazardous material spills. A gasoline spill of more than fifteen gallons to the EPA is a hazardous material spill and is to be reported (see blue book 5.1.6-5 page on transporting of hazardous materials).

To cover the portion of the campus site that Moriah Volunteer Fire Department would be covering, the state or the federal government would have to put in abou four million, seven hundred and twenty five thousand dollars to the Moriah Volunteer Fire Department to be able to bring its equipment and buildings up to the standards to be able to protect the campus area facilities.

This is needed because of the number and size of the buildings to be covered. there will be high rise buildings which calls for the need of two 105' aerial platforms. There will be hazardous materials on the site, so there will be the need for a hazmat truck to handle these incidences. There will be the need for a rescue truck because the nearest ambulance to reach this area is about twenty to thirty minutes or longer away, depending on the time of day and if there is one available to come out from Durham, because some times all of their units are tied up and they have to call in Parkwood Volunteer Fire Department to come in and help or be on stand by. Two more pumpers will be needed for just the campus area that Moriah Volunteer Fire Department covers.

We will need paid personnel at Moriah due to the shortness of volunteers there in the daytime because of other jobs. The ones that work other jobs and do respond can not be answering calls to the campus several times a day to false alarms due to automatic alarms going off.

Bahama Volunteer Fire Department's district in Durham County which joins Moriah Volunteer Fire Department District and covers the Rougemont portion of the tunnel and dump site would need about three million dollars to protect this high risk area in Rougemont around the dump site. A minimum of two hundred thousand dollars for equipment, in the case of a tunnel accident, is needed for the other eight ~~fire departments~~.

LETTER 1291 (CONTINUED)

MORIAH VOLUNTEER FIRE DEPARTMENT
Route 1, Box 213B
Rougemont, North Carolina 27572

Concerning the part of the socioeconomic assessments (pg. 191) under Durham County which says basic facilities required by the project would include a police substation, a permanently staffed fire station and an emergency medical care facility (all presently existing in Durham), you can not count on the Durham Fire Department to cover the campus site because they are already pushed to the limit trying to cover what they already have. The man power in Durham is so short that they have to park aerial trucks, tanker trucks and on occasions a pumper truck and several of the trucks only run with three men on them most of the time and can not even man the new hazmat truck with four personnel as they told the citizens of East Durham they would do.

The Durham Fire Department can not even get their #12 station built in the new annexation of Parkwood due to the amount of money in their budget, so there is no way Durham Fire Department can cover the SSC site Durham's hazmat truck will not run mutual aid to the county of Durham or to other cities. Their reason for not doing this is that they can not leave the city because something might happen at Southchem, a chemical company. The water system that is proposed on (summary of conceptual engineering design & number 5 fire protection systems) says 250,000 gallons of a 300,000 gallon storage tank is dedicated to fire protection. On a major fire at the campus site, the water source that it is calling for would not be enough. The 250,000 gallons that is dedicated to fire protection would only last two aerial trucks flowing fifteen hundred gallons per minute for one hour, twenty three minutes and twenty three seconds and this if not counting what would be used by firefighters with handlines.

Will these buildings have sprinkler systems and stand pipes? If so the potential water storage would be cut even more if the sprinkler systems were activated. This is simply not enough storage.

So in closing, the State and the Government better back up and take a look at the cost of fire protection for this 53 mile circle called the SSC.

<u>Moriah Volunteer Fire Department</u>

2 1000-1000 pumper-tanker trucks	260,000.00
2 105' 1500 gpms aerial platforms	1,000,000.00
1 Hazmat truck	200,000.00
1 Rescue truck	150,000.00
66 paid personnel to cover area	1,365,000.00
station to house equipment and personnel	1,000,000.00
equipment to equip trucks and personnel	750,000.00
Bahama Volunteer Fire Department	3,000,000.00
Other eight volunteer fir departments	1,600,000.00

Howard Wade Ellis
Rt 2 Box 295-B
Rougemont - N.C. 27572

LETTER 1292

October 13, 1988

Dr. Wilmot Hess
SSC Draft EIS
SSC Site Task Force
ER-65-GTN
Office of Energy Research
U.S. Department of Energy
Washington, D.C. - 20545

Dear Dr. Hess:

1 As a citizen of Illinois, I wish to be included in the scoping process for the Draft EIS for the proposed Superconducting Super Collider.

2 I DO NOT want the SSC sited in Illinois for the many dangers it poses to our environment in this area. Following are some examples:

3 Some remnant prairie land loss is possible. (Table 307 DEIS)

4 Eight-hundred-and-fifty (850) acres of wetlands will be impacted in Illinois. This is the second largest amount of wetlands among the seven alternative sites. (Table 307 DEIS)

5 Some wetland habitat will be adversely impacted or lost. (Appendix 11, Section 11.3.3.3).

6 The air quality of the Illinois site is already the worst of the seven sites. Ours is the only site which is in a region of non-attainment for both carbon monoxide and ozone levels. (Appendix 4, Sec. 44.4.2, Page 4-26).

7 Only the Illinois site is located in an area that already has two sources contributing to an increase in the natural background radiation level — Fermilab and the Kerr-McGee Chemical Plant. (Appendix 5b, Section 5.3.6.2, Page 68).

8 Illinois is already the site with the greatest number of man-made sources of radioactivity. (Table 4-14).

9 Illinois is already the site with the greatest number of potentially hazardous or toxic materials sources. (Table 4-15).

10 Illinois already has the highest levels of background noise adjacent to proposed E and F access shafts. (Appendix 4, Sec. 4.5.1, Page 29).

11 The sedimentation ponds located at E and F shaft sites may or may not be large enough to hold the water long enough for adequate sedimentation. This could result in a measurable sediment impact on streams in the adjacent area. Sedimentation of our streams remains one of my major concerns. (Appendix 7, Sec. 7.1.33, Page 40).

12 We need to protect the delicate balance of nature. Siting the SSC in Illinois could result in upsetting our frail, natural environment. Illinois DOES NOT welcome the SSC!

Sincerely,

Stacy J. Naus

October 14, 1988

Dr. Willmot Hess
SSC Draft EIS
SSC Site Task Force
ER-65-GTN
Office of Energy Research
U.S. Department of Energy
Washington, D.C. - 20545

Dear Dr. Hess:

1 After reviewing the Draft EIS, I would like to comment on the many problems I foresee happening if the SSC were to be sited in Illinois. The following lists a few of my many concerns:

2 The roads at the Illinois site are the most congested of all seven sites, and are the only roads subject to breakdowns in the flow of traffic. More travel time will be required to move from point to point around the ring in Illinois versus any other site. (Table 5.3.11-10).

3 Illinois shows the lowest levels of public services available at all seven sites. Our student/teacher ratios are the worst of any site, and our fire and police protection for DuPage, Kane, and Kendall Counties are well below the national average. (Table 5.3.11-3)

4 The presence of methane gas at the Illinois site will pose a tunneling construction problem. (Appendix 4.1.5).

5 Reduction in the number of spoils dump sites down to four quarries in Illinois creates renewed problems of congested truck traffic on all haul roads and at the dump sites themselves. As many as 290 truckloads of material may be traveling toward Quarry #1 on any given day. Quarry #1 is on the corner of Rte. 31 and McLean Blvd., near South Elgin. (Appendix 10, Sec. 10.2.3.3).

6 Kendall County is only one of two counties at all sites where a negative economic benefit is anticipated for the life of the project. (Appendix 5, Sec. 5.1.8.4, Page 19).

7 The inclement and LONG Illinois winters can be expected to reduce the numbers of available working days, and thereby increase tunnel construction time. (Table 4-5).

8 The Illinois site has the most historical sites and the most prehistoric or archaeological sites that may be adversely impacted by the siting of the SSC in our state. (Table 3-7).

9 Illinois is NOT the most logical site to build the SSC. Keep the SSC out of Illinois. WE DO NOT WANT IT!

Sincerely,

Kathleen H. Kaprelian
5N589 Deer Run Dr.
St. Charles IL 60175

LETTER 1294

14 Oct 1988

DR Wilmot Hess
SSC Site Task Force
ER-65 / GTN
Office of Energy Research
US Department of Energy
Washington DC 20545

Dear DR Hess

There are numerous environmental issues that can be better discussed in the Draft EIS.
1 However I believe that the following three have to be brought to the decision makers attention before a determination is made to locate the SSC in Illinois rather than some other Locations.

1. The Draft EIS states that the
2 proposed Location of the SSC in Illinois is in a nonattainment area for carbon monoxide and ozone.

2

The Draft EIS shows that the construction of the SSC will increase the carbon monoxide for the area. It also shows that TSP will increase 3 times for the 24 hour average and NOX will almost double. However there is no discussion on ozone. Since NOX is increasing by twice I would expect a large increase in ozone.

Since the Draft EIS has been published two actions have taken place that must be discussed in the EIS. The first action has been brought by the State of Wisconsin when
3 they filed the first Clean Air suit against EPA for failure to require Illinois to curb output of ozone pollution. Also the deadline Aug 31, 1988 for imposing the sanctions required

3

my law has passed and the Clean Air Act has not been amended. Lee Thomas EPA Chief has stated that he has no recourse, he now has to impose sanctions against the construction of major projects in non attainment areas. How then can EPA approve the construction of the SSC in Illinois. It seems that EPA must state their position on this issue in the Final EIS. The Administrator of DOE and the President must be told in the briefing paper on this EIS that the project if built in Illinois is going to be in non compliance with EPA rules.

2. Wetlands have been discussed and
4 they also are an issue that is in conflict with EPA goals. EPA has a published goal

4

that the United States will not loss any more wetlands. We have lost too many at this point. The Draft EIS only states that there will not be any real impact. However the loss of any wetlands is an impact. The Final EIS must state how the SSC can be built without the loss of any wetlands or how DOE can replace the wetlands that they propose to remove. The replacement must be on DOE present land. You have proposed to take too much ~~land~~ with the present proposal.

The President can't allow one federal agency to disregard the goals and requirements of
5 another federal agency. I would suggest that both of these issues be resolved by OMB before the final EIS is prepared. If not I believe you are misleading the decision maker.

5

3. The third issue is the ground water wells. The Draft EIS states that there are 1500 wells within 0.25 mile (1320 feet) of the ring. First there are more than this number of wells. Second the Draft EIS will only consider 320 of these wells within

6 the 1000 foot band along the tunnel. It is apparent that none of the authors have had anything to do with wells in this part of Illinois. Ground water wells in this area are drilled and cased to the bed rock then a bore hole is drilled in the rock to the depth necessary to obtain the required amount of water. In this way the bore hole will pass the numerous fractors and areas of low permibility to supply the

6

required recharge. Thus there is no doubt that the tunnel will effect the wells for 1000 to 1500 feet on each side of the tunnel. You must tell the decision-maker in the Final EIS that there is a better than 50-50 chance that this project will affect 1500 to 2000 wells in Illinois.

7 I look forward to receiving a copy of the Final EIS in which these issues in Illinois are discussed. I request a copy of the complete Final EIS

Sincerely

John E Bayer

JOHAN E BAYER PhD
45 Stirrup Cup Ct
St Charles Il 60174

LETTER 1296

October 15, 1988

Dr. Wilmot Hess
SSC Draft EIS
SSC Site Task Force
ER-65-GTN
Office of Energy Research
U.S. Department of Energy
Washington, D.C. - 20545

Dear Dr. Hess:

I have four items that I wish included in your scoping process pertaining to the Draft Environmental Impact Statement.

1 I want it known from the onset that I firmly believe the SSC should NOT be
sited in Illinois. The DEIS reconfirmed my strong conviction -- I knew all
along that Illinois was not the best site for the SSC! The following list
is but a few reasons that prove my point:

More wells will be closed in Illinois than in all other states combined.
2 (Table 3-7, Page 3-51, and parcel count from Land Acquisition Plans,
A-3C thru A-3Y).

More water channels across the proposed ring at the Illinois site than
at any other. The Fox River is the largest surface water channel with
3 the largest watershed area to cross the ring at any site. This means
that the Illinois site has the highest probability for siltation of
streams to occur. (Table 402 and Section 4.2.1.1).

The presence of the largest and most organized local opposition to the
SSC in Illinois is a problem itself. Litigation against the State of
Illinois and the U.S. Department of Energy can be expected to lengthen
4 tunnel construction time in Illinois. Our 20,000 plus signatures
against the SSC being sited in Illinois is a number greater than the
amount that New york State had when their Governor withdrew their
state's proposal.

Finally, Illinois is the only site where land use patterns are expected
to change to a higher level without the SSC. The Fox Valley site is
5 moving from agricultural to residential or commercial. Only the
Illinois site has alternative land uses. This opportunity cost is
never taken into consideration in any economic assessments.
(Appendix 4, Sec. 4.8.7, Page 4-76)

Do not underestimate the resolve the people of the Fox Valley have in this
6 issue. We are determined to do whatever it takes to keep the SSC from
being built in Illinois. KEEP THE SSC OUT OF ILLINOIS!

Sincerely,

Lyle & Virginia T Larson
39 W 783 Buckskin Ct.
St. Charles, Il
60175

(Lyle + Virginia Larson)

LETTER 1297

October 10, 1988

Dr. Wilmot Hess, Chairman
SSC Site Task Force
ER-65/GTN
Office of Energy Research
U.S. Department of Energy
Washington, DC 20545

Dear Sir:

1 We do not want the SSC to be placed in our community. Here are some of the reasons why:

2 ---The surface water at the Illinois site is already the worst of any of the alternative sites.

3 ---The air quality of the Illinois site is already the worst of the seven sites.

4 The noise level adjacent to E, F, and J sites is already the highest of any of the alternatives.

5 ---Illinois is already the site with the greatest number of potentially hazardous or toxic material sources.

6 These and many other problems at the Illinois SSC site make Illinois the illogical choice for the collider.

Respectfully yours,

Dave & Laura Gonda
Post Office Box 22
Wayne, Illinois
60184

LETTER 1298

October 10,1988

Dr Wilmot Hess
SSC Site Task Force
ER-65/GTN
Office of Energy Research
U.S. Department of Energy
Washington, DC 20545

Attn: SSC DEIS Comments

Dear Dr. Hess:

The recent SSC Hearings at Waubonsee High School pointed out
1 several key areas where the Illinois proposal is insufficient
or lacking in merit. Among them are the following:

1. The EIS makes it clear that there will be some wetlands
   loss at the Illinois site. This is a problem that cannot
2 be mitigated, and the recent court ruling of <u>Bersani</u> and
   <u>Robichaud</u> , 850 Fed. 2nd., page 36 should preclude the
   Illinois site from being legally considered.

2. The presentation of 20,000 signed petitions by local Fox
3 Valley residents gives the Illinois site the largest
   organised opposition group that exists against the SSC
   project in any state.

3.The regional and local groundwater overdrafts that exist
4 at the Illinois site will create additional problems for
   30,000 plus well water users in the Kane county vicinity.

4. The extensive water infiltration problem that will be part
5 of the SSC throughout its existance will only create more
   problems for our dwindling groundwater supplies.

5. There is a major groundwater infiltration problem between
   E3 and E4 where 5200 gallons/min./100 feet are expected to
6 leak into the tunnel. The inadiquate size of the sedimen-
tation ponds at this and other locations will lead tc the
   sitation of our streams and waterways.

6. There is a direct hydrological connection between the
   surface waters and our groundwater supplies at the Illinois
7 site. This creates the opportunity for our groundwater
   supplies to be adversely impacted by siltation or other
   pollutants entering our surface waters because of SSC
   construction or operations.

7. More water channels cross the proposed ring at the Illinois
8 site than at any other. The Fox River is also the largest
   surface water channel with the largest watershed area to
cross the ring at any site. This means that the Illinois
site has the highest probability for siltation of streams
to occur.

Sincerely yours,

Karen Vollmer

IIA.1- 2866

LETTER 1299

Oct 10, 1988

Dr. Wilmot Hess, Chairman
SSC Site Task Force
ER-65 / GTN
Office of Energy Research
U.S. Department of Energy
Washington, DC 20545

Attn: SSC DEIS Comments

Dear Sir:

Table 4-27 page 4-83 compares the levels of public service available at each site. It deserves mention that Illinois has the second fewest number of people employed per 1000 population for education and the lowest number of people employed per 1000 for health care. Our schools in the Fox Valley area are among the most crowded in the state because of the very rapid growth that has occurred over the past 2 years. Recent referendums were necessary in order to raise taxes in order to build new schools. This increased tax burden in never mentioned by the EIS. The addition of the SSC will only make matter worse. Take your experiment to some other state where they may want you — for we don't.

Sincerely yours,

Patricia Gilson
Patricia P. Gilson
39W534 Antler Trail
St. Charles, IL 60175

LETTER 1300

October 10, 1988

Dr. Wilmot Hess, Chairman
SSC Site Task Force
ER-65/GTN
Office of Energy Research
U.S. Department of Energy
Washington, DC 20545

Attn: SSC DEIS Comments

Dear Dr. Hess:

Table 4-5 page 4-24 indicates that Illinois has the highest
average annual snowfall of the seven SSC sites. What this
chart Doesn't tell you is that this high snowfall rate will
1 directly increase the amount of time spent on tunnel con-
struction in Illinois. Most sites under consideration ex-
perience weather that allows outside work year round. This
is not true for Illinois.

Section 10.2.3.3 of the DEIS indicates that as many as 6
tunnel boring machines will be working at any one time in
order to speed up tunnel construction. As many as 290 semi
trucks are expected to be removing spoils from the tunnel
on any given day. Does the DOE really expect construction
2 to go on unabated when a 6 to 10 inch snow fall occurs?
How can 290 semis be expected to highball down our country
roads when our 4 wheel drive vehicles are often forced out
of service because of inclement weather conditions. Isn't
the DOE aware of the fact that the first roads in the Chicago
area to close down because of drifting snows are the roads
west of the Fox River in Kane County? Has the Illinois ENR
failed to notify you about this situation?

Let me guarentee you that because of the winters that we
normally experience here in the Chicago area, the DOE better expect
3 tunnel construction to proceed at a much slower pace than
in Texas, Arizona, Tennessee, or North Carolina. Illinois
again stands out as being a negative for your precious
1996 timetable.

Respectfully yours,

[illegible]
42 W 428 Jens Jensen Lane
St. Charles, IL 60175

LETTER 1301

October 12, 1988

Dr. Willmot Hess
SSC Draft EIS
SSC Site Task Force
ER-65-GTN
Office of Energy Research
U.S. Department of Energy
Washington, D.C. - 20545

Dear Dr. Hess:

I wish to be included in the scoping process that is to respond to the
Draft Environmental Impact Statement. After reviewing the Draft EIS,
1 what I have known for a long time is rather obvious -- the SSC DOES NOT
belong in Illinois! Far too many people would be adversely impacted.
Following is a discussion of some of my many reasons:

2 More acres of prime farmland are being removed from production
in Illinois than at any other side. (Table 4-23 DEIS)

More property owners are involved in Illinois than in all other
3 states combined. (Table 4-2 and parcel count from Land Acquisition
Plans A-3C thru A-3Y).

4 More businesses will be closed or relocated in Illinois than at
all other sites combined. (Table 4-2).

Because of the great amounts of farmland, property owners and
5 businesses being taken, Illinois will have the most difficult
land acquisition process of any site.

The Illinois site has the largest number of people living adjacent
to proposed SSC facility sites (E, F, and J sites). As a result,
more people in Illinois will be adversely impacted by noise pollution,
6 air pollution, exposure to airbourne radionuclides, adverse visual
impacts, and noise and vibration impacts due to dynamiting than at
any other site. (Appendix 4, Section 4.5.1, Page 4-29).

Lastly, because of the large number of human receptors at the
Illinois site and their closeness to SSC facilities, a greater
7 amount of mitigation changes will be required versus alternate sites.
This equates to increased cost and increased construction time.
(Figure 5.1.4-3 DEIS).

The great number of people being affected at the Illinois site is a very
critical factor. Surely a state that has fewer people being affected would
8 be the wiser choice. And you can be sure that by the time the SSC project
is even completed, Kane County will have near the number of people that DuPage
County has now. The SSC designers dared not place the ring east of Fermilab
because of the density of DuPage County -- why then build it to the west of
Fermilab when it will be just as dense? Keep the SSC out of Illinois! It
does NOT belong here!

Sincerely,

Carol Lynn Manns
39W612 Carillon Trail St. Chas, Il. - Purdue U.

LETTER 1302

C.A.T.C.H.-Illinois

Citizens Against the Collider Here

Oct. 6, 1988

Dr. Wilmot Hess, Chairman
SSC Site Task Force
ER-65/GTN
Office of Energy Research
U.S. Department of Energy
Washington, D.C. 20545

Attn: SSC DEIS Comments--- Economic Alternatives & Emotions

Dear Sir:

1 One of the major reasons why Illinois should not be the final site for the SSC is due to the extensive degree of development which exists at the Illinois site. Page 4-72 and Table 4-21 both indicate that Illinois has the most complex pattern of current land uses available. Also, Page 4-76 states that "of all seven sites, only Illinois presents a situation where growth is triggering not only an intensification of current use, but also major changes from one category of land use to a new higher development classification. The remaining six sites do not portray this kind of future growth".

2 This is a key statement by the EIS. Only in Illinois are current land uses leading to property moving from one land classification to a higher classification. As a consequence, the land available at the Illinois site has potential alternate uses. This is not true at the other six sites. The fact that the property at the Illinois site could be used for other purposes actually makes this property more valuable than the land located at the other sites. The EIS indicates that no future land use changes are expected to occur at the other basically remote and undeveloped sites. Only Illinois stands off by itself as having alternative land uses available for the proposed SSC acreage. However, this opportunity cost associated with the Illinois acreage is never taken into consideration by the EIS or by any of the economic studies prepared by the Illinois ENR, SSC for Fermilab or by the Department of Energy. The Illinois site is unique in its economic potential, yet this fact is completely ignored by the proponents of the Illinois proposal. All economic discussions have centered around the economic benefits that will be derived from the SSC project while ignoring many of the cost components

P.O. Box 104, Wasco, Illinois 60183 Phone:312-584-4244

which must be considered in a true cost benefit analysis.
Either the economists involved in preparing the EIS have made
a major mistake or there were no economists involved at all.

Another factor that is obviously missing from the EIS is an
3 analysis of the psychological impact which the SSC project
is already having upon the affected residents at each
alternative site. In Illinois, for example, there is no
discussion about the degree of involvement necessary for
people to fight this project. Nowhere does it describe the
animosity which has developed between affected property
owners and the government of the State of Illinois. Nowhere
does the EIS describe the tremendous degree of mistrust
which the local community has towards our Governor, our local
political leaders, the DOE and especially towards Fermilab.
The EIS is deficient in describing local attitudes and feelings
toward the SSC and its proposers. As a result, you scientists
4 don't understand the complete hatred which we affected property
owners have towards the SSC in general. Nor do you understand
from the EIS the resolve that we people have towards insuring
that the SSC will not be sited in Illinois. We are prepared
to do whatever it takes to impress upon you scientists that
you are not welcome here. Every legal means will be exploited
in an attempt to force you to site this intrusion elsewhere.
The EIS has failed miserably in its judgement of local attitudes
and I just want to make one thing perfectly clear --- the only
way the SSC can come to Illinois is through the courts!

Sincerely,

James Kor[illegible]
144 S. Lorraine
Wheaton, Ill. 60187

LETTER 1303

Dr. Wilmot Hess
SSC Site Task Force
ER-65 /GTN
Office of Energy Research
U.S. Department of Energy
Washington, DC 20545

Oct. 10, 1988

Dear Dr. Hess:

Please place the SSC collider in Texas
where the people need the work and where
people won't be forced to move from their
1 homes or farms or businesses as they will
here in Illinois. Far too many wells
will have to be closed at the Illinois
site. Why is this necessary, and if
the tunnel is not dangerous, why is
2 such a wide 1000 foot easement
necessary? You ended up confiscating
more land for Fermi than you originally
3 planned and you seem determined to do
the same again. This isn't necessary and
is unacceptable. Stay out of Illinois

Ginny Gemmell
5N481 Buckskin Tr.
St Charles, Ill. 60175

LETTER 1304

IIT Research Institute
10 West 35th Street
Chicago, Illinois 60616-3799

312/567-4000

14 October 1988

Dr. Wilmot Hess, Chairman
SSC Site Task Force
ER-65/GTN
Office of Energy Research
U.S. Department of Energy
Washington DC 20545

Dear Dr. Hess:

Enclosed is an issues paper prepared by the Illinois SSC Citizens Mitigation Advisory Task Force. As facilitator of the group, I was asked to send you this paper under separate cover. It also appears as a chapter in the Illinois submittal in response to the Draft Environmental Impact Statement.

Sincerely,

Linda Cooper

Linda Cooper

LC:md

Enc.

IIT Research Institute
10 West 35th Street
Chicago, Illinois 60616-3799
since 1936

312/567-4000

14 October 1988

Dr. Wilmot Hess, Chairman
SSC Site Task Force
ER-65/GTN
Office of Energy Research
U.S. Department of Energy
Washington DC 20545

Dear Dr. Hess:

The Illinois SSC Citizens Mitigation Advisory Task Force has discussed key issues related to the development of the SSC. We have done so to provide useful and timely local information important to site-specific mitigation planning and look forward to receiving the final Environmental Impact Statement.

Sincerely,

See signature page

LETTER 1305

October 10, 1988

Dr. Wilmot Hess, Chairman
SSC Site Task Force
ER-65/GTN
Office of Energy Research
U.S. Department of Energy
Washington, DC 20545

Dear Sir:

Many of the problems associated with the Fox Valley SSC site have to do with water related issues. For one thing, ours is the only state that already has a groundwater quality problem. The presence of high levels of radium in our groundwater supplies already places us local groundwater users in an unwanted situation, and the possibility of further radiation exposure is unthinkable. Not only that, but our groundwater supplies are also limited. Many people with wells as deep as 350 feet had their wells go dry this past summer. This can be verified by contacting any well driller in the region. The addition of the SSC will only add to our supply problem. The SSC and the DOE are not wanted in Illinois.

Sincerely yours,

Holly Zaremba

LETTER 1306

October 14, 1988
39W871 Deer Run Drive
St. Charles, Illinois

SSC Draft EIS Comments
SSC Site Task Force
ER-65, GTN
U.S. Department of Energy
Washington D.c. 20545

Dear Dr. Hess,

I can't quote you statistics and explain the physics end of this SSC project, but I can tell you what I and many more peòple feel.

The quality of my life will be affected. I will not have peace of mind. I will always live with the perception of danger and the uncertainty of having an experimental device near my home.

I do not want to live with that uncertainty. I strongly oppose the Superconducting Super Collider in Illinois, most especially in the Fox Valley Area!

Thank you for including my concerns in your scoping report!

Sincerely,

Carol Hadamik

Amanda + BRAD

Phil, Carol, Amanda, and
Brad Hadamik

LETTER 1307

October 10, 1988

Dr. Wilmot Hess, Chairman
SSC Site Task Force
ER-65/GTN
Office of Energy Research
U.S. Department of Energy
Washington, DC 20545

Attn. SSC DEIS Comments

Dear Dr. Hess:

There are numerous reasons why Illinois should not be the site for the DOE's Superconducting Super Collider. We have listed a few of them below.

-----The Illinois site has the largest number of people living adjacent to the proposed E, F, and J sites(Appendix 4,
1 Sec. 4.5.1, page 4-29). This will automatically require more mitigation in every phase of construction and can be expected to increase the length of tunnel construction time in Illinois.

-----The Illinois site also has the largest amount of local opposition to the SSC project and to the DOE in general. If the DEIS hearings in Aurora were an example, the DOE can expect the greatest amount of litigation to originate
2 at the Illinois site. Despite what some of the lawyers from the proponents feel, this litigation can be counted on to delay the SSC project in Illinois. If your 1996 deadline is so vital, I suggest that you bring the SSC to one of the other states where this does not pose a problem.

3 -----The presence of methane gas at the Illinois site is another problem which will slow down tunnel construction.

4 As was stated at the Deis hearings, the only way the SSC can come to Illinois is through the courts.

Sincerely yours

Mrs. June Fillmore

LETTER 1308

October 14, 1988
39W871 Deer Run Drive
St. Charles, Illinois 60175

SSC DRAFT EIS
SSC Site Task Force
ER-65,GTN
DOE
Washington, D.C. 20545

Dear Dr. Hess,

The Fox Valley Area already has water quality problems.
The citizens in Geneva, the city just south of St. Charles,
1 receive a notice with their bill each month, warning them of
the high radium levels. We do NOT need to add to the already
existing problems with our water.

If you read the attached two articles, the city of St. Charles
is planning 2 new wells, one being very near a 6 acre compressor
site along the northeast section of the ring.

2 Can you put in writing a guarantee that the SSC will not
contaminate the large city wells? I realize the loss of a beam
is rare, so I am not even speaking about possible contamination
of radiation. I am concerned about sedimentation also during
the lengthy construction period.

Keep the SSC away from our water in Illinois. Far too many
people would be impacted by poor quality water. Site this
3 experiment where the fewest number of people would be impacted!

DO NOT play around with our health! Illinois is NOT a toy!

I do NOT want the SSC in Illinois!

Sincerely,

Carol Hadamik

Carol Hadamik

* See 2 articles included

nesday, March 16, 1988 ST. CHARLES CHRONIC

City water still meets radium level

By Lee Husfeldt

St. Charles' drinking water has passed the most recent tests to meet federal radium standards, ~~but the amount of radium has increased since the last sampling.~~

Test results from the second round of sampling measured radium in St. Charles' water at 5.4 picocuries per liter. Although the state and federal limit is 5 picocuries per liter, the measurement is rounded off to the nearest whole number, so St. Charles' 5.4 becomes 5, which meets the standard.

The first round of testing in 1979 and 1980 was a composite of four water samples taken over a one-year period. That testing measured the radium in St. Charles' water at 4.10 picocuries per liter, but it was noted that most of those samples were taken near shallow wells.

Shallow well water contains substantially less radium than deep wells where the element occurs naturally.

St. Charles has five deep wells and two shallow wells supplying its drinking water.

For the second round of testing, a composite of four water samples was used, one from Februrary 1987, one from June 1987, one from December 1986 and the fourth from August 1984.

Those were the four most recent samples the Illinois Environmental Protection Agency had in house to work with, said Dorothy Bennett of the IEPA.

Bennett said there is no reason to be concerned that the level of radium has increased in the four to five range. She said it is such a minute number, the judging could be off.

A picocurie is one-millionth of a millionth of a gram of radium, she explained.

John Bajor, the city's public works services manager, is not worried that the radium level has increased from the first set of water samples to the second.

"There is a certain degree of variance in the testing," Bajor said. "Water quality never stays totally the same."

Bajor may not be worried because the city continues to take steps to reduce the amount of radium in its water by blending shallow water with deep well water.

Two of the city's deep wells are located near the Municipal Center, two by Third and Bowman streets and one in the Central Manufacturing District.

At a cost of about $186,000, the city is extending a water main from a shallow well to blend that low radium water with the deep well water in a reservoir near the Municipal Center before it is distributed throughout the system for drinking.

A similar project is being done at Third and Bowman, although city crews are doing this work which is keeping the price between $15,000 and $20,000.

Those two projects are expected to be completed within the next fiscal year, which begins May 1.

For the deep well water in the CMD, the city puts shallow well water into the water tanks in that area at night.

With the continued growth of the city, St. Charles will need to construct two new wells within the next five years, according to Bajor and city engineer Mark Koenen.

They recommend the first well be on the west side of the Fox River. [redacted]

Koenen said a well costs about $275,000 plus $40,000 to $50,000 for engineering.

Depending on test results of the two sites, he estimates construction could begin in summer. The cost for one well is included in the proposed budget for the coming fiscal year.

The cost will be spread out over five years and funded through the rates.

St. Charles has been increasing water and sewer rates annually for the past two years, and this coming fiscal year, with funds needed for a new well and other expenses, will be no exception.

Just how much the rate increase will be is not known yet, said Larry Maholland, the city's comptroller and finance director. But, the higher rates are expected to take effect May 1.

One thing that will be looked at carefully during the testing of the two well sites is water quality.

It is already known that the proposed well in Thornley on the Fox will produce water high in iron and would require iron treatment at a cost of approximately $500,000.

Characteristics of water quantity and quality from a well in Red Gate are not known yet.

The next priority site for a well is in the Woods of Fox Glen subdivision. Water from a well at this site may require treatment for manganese, but further testing is required to determine the extent of that treatment.

All three of the proposed wells would be shallow wells.

St. Charles Chronicle
March 16, 1988

Wednesday March 23, 1988 St. Charles Chronicle Two Page 1

al Report

Cities and Kane County

Radium standard 'in stone'

By Susan Kryger

Municipalities plagued with radium levels above the standard set by the United States Environmental Protection Agency should not expect to see the standard raised in the near future.

Dr. Richard Toohey of Argonne National Laboratory told aldermen, city administrators and other Kane and DuPage county officials that the USEPA is not likely to adjust the radium standard which would bring the communities into compliance and eliminate the need for millions of dollars in shallow wells and other water treatment facilities the EPA is forcing the communities to build.

Toohey, and Charles Bell of the Illinois EPA, spoke at this month's DuKane Valley Council meeting last Wednesday.

Toohey said studies conducted at Argonne indicate that the present standard of five picocuries of radium per liter may be too stringent. Toohey said a standard as high as 20 picocuries per liter could be adopted without significantly increasing health risks. However, Toohey said he doubts that will happen.

"The bad news is there is no hope whatsoever of the standard being changed," Toohey said.

"Sometimes they (the USEPA) change their mind," he added, "but not very often."

Toohey's studies are based on information from women who worked as radium dial painters in the 1920s. Toohey said the women often licked the tips of their brushes to ensure a fine point. From the results of health studies on these women, Toohey said he developed a graph that rejects the EPA's model with "98 percent degree of confidence."

The linear model developed by the EPA predicts that at a certain level there should be five cancer patients, however, results from Toohey's study indicates that at that same level there were no cancer patients.

Toohey said the EPA's linear model suggests that risks at the low level will be directly proportionate to risks at the high level and thet there is no threshold. Toohey said that may not necessarily be true.

"It's basically anybody's quess," he said.

A picocurie is the amount of radioactive element in one gram. Five picocuries is equal to nine radioactive atoms disintegrating per minute, Toohey said. At the rate of two liters of water per day, a figure set by the EPA, there will be 100 cancer patients per million, he added.

That is a small risk relative to the percentage of accidents that occur because of everyday activities, Toohey said. Toohey called the EPA's limit "overkill."

"Sooner or later you will have to come in compliance with the standards," Toohey told the city officials, however, he added that they could inform their residents that the radium they've ingested up to this point is nothing to worry about.

"Many people are convinced that any or all amounts of radium is deadly," Toohey said.

About 120 municipalities in Illinois exceed the radium standard, Bell told the audience, and by June of 1989 all will be under compliance with the standard or subject to penalties.

Three tri-city and Elburn area water supplies are over the standard and already have agreed to comply or are involved in talks with the state.

Batavia's water has been measured at 11.1 picocuries per liter, Geneva's at 12.7 picocuries and Elburn's at 7.2 picocuries. Batavia has opted to drill a shallow well for drinking water which will blended with the radium-contaminated deeper wells. Geneva also has submitted a compliance plan that uses the blending option. Elburn will do the same.

St. Charles does not rely solely on the deep wells and therefore is not on the restricted list. However, city officials are considering blending water from the city's various wells to reduce the health risks for certain sections of the city whose supply mainly comes from the deep wells.

Bell said the state has the power to place a $5,000 penalty on municipalities who violate the standard, but as of yet it has not taken any such action.

If municipalities violate the administration order to come in compliance with the standard, the state can penalize the municipality $25,000 for the violation and $25,000 for each day the case has to be resolved in court.

Once municipalities are informed that their drinking water is above the standard, officials have 60 days to sign a letter of intent to correct the problem. After that, officials have four years to achieve the compliance.

Bell said penalties are not issued if the communities agree to work out a compliance plan. If they refuse to comply, the municipalities are turned over to the EPA or Pollution Control Board and Bell said then it is likely that the municipalities will be penalized.

Contrary to Toohey's indication that federal money may be available to help municipalities in their efforts to comply with the standard, Bell said there is little if any funds available.

"You're pretty much on your own when it comes to this," Bell said.

However, two companion bills sponsored by Sen. Alan Dixon (D-Ill.) and Rep. Dennis Hastert (R-Yorkville) may provide some relief in the future. The bills will provide $14 million in administrative funding to help communities pool their resources to get bonds to help finance the necessary construction.

LETTER 1309

October 10, 1988

Dr. Wilmot Hess, Chairman
SSC Site Task Force
ER-65/GTN
Office of Energy Research
U.S. Department of Energy
Washington, DC 20545

Dear Dr. Hess:

One of the main reasons why Illinois should not be the desired location for the SSC is that many more wetlands will be adversely impacted than are indicated within the DEIS. For example, the EIS fails to indicate that any wetlands exist in the area of E8 near Denker Road. There is a small lake in the immediate vicinity of the proposed site, and this small lake happens to drain into Ferson Creek. This creek in turn drains in the Fox River. The DEIS in Appendix 7, Sec. 7.1.33, page 40 says that the sedimentation ponds will not be large enough to allow for proper sedimentation to occur. If this is true, what is to stop this sediment from reaching the lake and eventually being deposited in and along Ferson Creek? Are these ponds going to have to be larger than the 1/3 acre as planned and will this then mean that E8 will in fact be larger than the original size as proposed? These and many other questions remain unanswered in the DEIS and for that reason alone, I must oppose the siting of the SSC in Illinois.

Thankfully yours,

Melanie Hager
811 N. Prairie
Batavia, Ill
60510

LETTER 1310

SUPER COLLIDER

C.A.T.C.H.-Illinois

Citizens Against the Collider Here

October 6, 1988

Dr. Wilmot Hess, Chairman
SSC Site Task Force
ER-64GTN
Office of Energy Research
U.S. Department of Engery
Washington, D.C. 20545

Attn: SSC DEIS Comments---Technological Spinoffs

Dear Sir:

A major argument used by supporters of the SSC both in Illinois and in the federal government is that there will be spinoff industry and great advances in technology. I strongly disagree.

Regarding the spinoff industry argument, where is that high technology industry around Fermilab? Certainly not in Illinois!

Is there any spinoff industry anywhere? I know of very little.

Just what has been accomplished at Fermilab?

Regarding the claim that great advances in technology will occur, James Krumhansl, Cornell University professor and president of the American Physical Society, has said that the SSC does not have "any immediate relevance to our technological or economic competitiveness."

Many scientists feel that more economically productive small science is being crowded out by big irrelevant science projects.

Philip W. Anderson, a Nobel physicist from Princeton University, has said "Science in the United States is dying of giantism," and "It is a sobering thought that Albert Einstein would certainly have been denied a Science Foundation grant to think by himself about the photoelectric effect or relativity theory." It is small science, he contends that is "almost the only direction that produces things that are really new under the sun."

P.O. Box 104, Wasco, Illinois 60183 Phone:312-584-4244

The claims of great technological advancement from SSC research are illusory. We should be spending our dollars on more applied research - research that has commercially usable application.

The Japanese are out competing us in the marketplace from automobiles to electronics. I don't see them clamoring to build an SSC!

They seem content to let us build it so that they can focus on applied research, commercially usable research.

A recent article in the Chicago Tribune says the United States is failing in development of commercially applicable high technology. The article is about a report by the Council on Competitiveness, which says that current research priorities are too narrowly focused. More emphasis should be given to commercialization. It also says that the "700 research labs, which have an annual budget of $20 billion, are at present so poorly supervised that it is difficult to determine just what projects they are pursuing. Some labs should be closed and the remaining ones supervised better."

This project has not been examined closely enough. I strongly suspect that if it is scrutinized it will never be funded.

Sincerely,

Bob Bennett
41W493 Silver Glen Rd.
St Charles, Il. 60175

LETTER 1311

LISLE CHAMBER OF COMMERCE
P.O. Box 372 • Lisle, Illinois 60532 • (312) 964-0052

October 13, 1988

Dr. Wilmot Hess, Chairman
SSC Site Task Force
ER-65 GTN
Office of Energy Research
U.S. Dept. of Energy
Washington, D.C. 20545

Dear Dr. Hess,

As President of the Lisle Chamber of Commerce I am writing to inform you of the Chamber's support for having the Superconducting Super Collider constructed in Illinois. Locating the SSC at the high energy physics research facility of the Fermi National Accelerator Laboratory, in Batavia, seems to us to be an excellent and realistic choice.

We hope the D.O.E. will announce Illinois as the final site selection in January.

Very truly yours,

H. Arthur Link

H. Arthur Link
President of Lisle
Chamber of Commerce

HAL/ebh

LETTER 1312

October 10, 1988

Dr. Wilmot Hess, Chairman
SSC Site Task Force
ER-65/GTN
Office of Energy Research
U.S. Department of Energy
Washington, DC 20545

Dear Sir:

The Draft Environmental Impact Statement shows that
Illinois has the worst congested freeways, 4-lane highways,
and 2-lane highways of the seven alternative SSC sites. We
may have the greatest number of available roads, but they
are going to become even more congested by the addition of
traffic associated with the SSC. At other sites, new roads
will allow for more direct flow of traffic around the ring
than do the currently existing roads in Illinois. Also,
1 these new roads will alleviate any traffic related problems
that may arrise from the SSC. These new roads will be
lacking at the Illinois site. Once again the proponents
of this project in Illinois have only promoted the positive
aspects of it. They have continually stressed that Illinois
has the infrastructure in place to handle all of the wonder-
ful visiting scientists that will be brought in by the SSC.
However, they have continually failed to indicate just how
poor some of that infrastructure really is. Our extensive
but over crowded roads is but one example.

Have the Illinois proponents described to you the con-
dition of our state educational system? I'm sure they have,
but have they told you some of the negatives? For example,
have they told you how our state institutions of higher
learning are experiencing a mass exedus of top level teachers
and administrators because the Governor can't deliver on his
promise for pay raises? Or how about the fact that numerous
2 hospitals have had to close because they have not been able
to receive medicaid payments from the state? Or that funds
have been diverted from general funds and into Build Illinois
funds thus taking important funds away from our educational
systems statewide? All of this is an example of how poorly
our State Government is financially. Does the DOE really
feel that the State of Illinois can deliver on its financial
commitments to the DOE and the SSC project? I personally
doubt it myself.

Sincerely yours,

Marlene Ann Romba

IIA.1- 2885

LETTER 1313

AREA CODE 303; 483-7343

WIGGINS TELEPHONE ASSOCIATION
P. O. Box 248
WIGGINS, COLORADO 80654

October 12, 1988

Dr. Wilmot Hess, Chairman
SSC Site Task Force
ER - 65/GTN
Office of Energy Research
U. S. Department of Energy
Washington, D. C. 20545

Dear Dr. Hess and Committee Members:

1 In reviewing the Draft EIS, I feel that you have done an outstanding job, especially in view of the time you had and the large volume of information that was gathered. I attended the DEIS hearings and with the exception of two items, I will be limiting my comments to items directly related to the Wiggins Telephone Association.

2 There are several places in the DEIS that refer to the distance from the nearest metropolitan area (Denver). There are many times I must go to the Denver area or Stapleton Airport. I can drive to these places in about the same time as people that must drive across Denver and, because of the lighter traffic, I can do so with much less stress. I believe that driving time, traffic conditions, and stress should receive equal weighting in your selection process.

3 Concern was also expressed as to what the rapid expansion would do to our area and could we meet the rapid influx of people. Our area is familiar with rapid expansions like those described in the DEIS. Even though many businesses in our area do not have large staffs of technical people, they have access to the technical people whose help would be necessary in times of rapid growth.

I would like to use our company as an example to illustrate the access to technical help that small businesses have. We do not have an engineer on staff. We do use a consulting engineer who has worked on large government projects. Also many of our national suppliers have large technical staffs whose purpose is to help small companies during times of rapid growth. A project we are working on now has required that several suppliers send technical people from states such as California, North Carolina, and Nevada. Many national suppliers in all types of business are willing to help small local businesses because it increases the sale of their products. This "help" does much to alleviate any problems in an area of rapid growth.

Wiggins Telephone Association
October 12, 1988
Page 2

The following comments will deal with specific sections of the DEIS. In Volume I, page 3-10, section F, second paragraph, you stated that "a wired connection to the local telephone utility would establish off-site communications." The SSC site is served by three telephone companies. The Wiggins Telephone Association serves the western side of the SSC site which includes the Campus Area. Eastern Slope Rural Telephone Association, Incorporated serves the center and southern portion of the SSC site. The attached Figure 1 will show the area covered by each of the three companies.

The Wiggins Telephone Association has reviewed the stated telecommunications requirements for the Campus Area. We have discussed these requirements with our consulting engineer and suppliers. Upon selection of the Colorado site, Wiggins Telephone Association can provide the necessary telecommunications equipment and services. We have also discussed the SSC telecommunications requirements with Eastern Slope Rural Telephone Association and have agreed to coordinate our efforts in providing the best telecommunications service possible for the SSC site. U. S. West serves part of the northern side and a small protion of the eastern side of the SSC site.

Volume IV, Appendix I, page 23, paragraph 1.2.2.14 Communications states "an aerial fiber optics line will be constructed from the Campus Area to Ft. Morgan. The length of this line is approximately 20 mi....." AT&T is presently constructing a fiber optics line approximately seven miles north of the SSC site. Wiggins Telephone Association has initiated talks with AT&T concerning the use of this cable. If this is possible. the length of the fiber optics line would be approximately seven miles.

Volume IV, Appendix 5a. 5.2 Colorado, pages 135-136, paragraphs 3a through 3e. The following additions should be made to the Telecommunications section.

4 a. Ownership

Telecommunications service within the vicinity of the Colorado site is provided by AT&T, U.S. West, Wiggins Telephone Association and Eastern Slope Rural Telephone Association. (Figure 1 shows the local service areas of the Wiggins Telephone Association, Eastern Slope Rural Telephone Association, and U. S. West. Figure 2 shows the area within and adjacent to the SSC site that is served by the Wiggins Telephone Association. Other areas served by us are not shown on Figure 2.)

Wiggins Telephone Association
October 12 1988
Page 3

b. Delineation of Service Territory

Wiggins Telephone Association is engaged in the business of furnishing telecommunications services in the Colorado counties of Morgan, Adams, Weld, and Logan.

The service area for the Wiggins Telephone Association includes three separate areas. One encompasses central and northern Weld County and western Logan County. Another encompasses the northwest corner of Morgan County. The third area encompasses the southwest corner of Morgan County. The service areas includes the towns of Briggsdale, Grover, New Raymer, Wiggins, and Hoyt.

c. Interrelationship with Other Telecommunications Systems

Wiggins Telephone is interconnected with U. S. West. U. S. West provides our link to interexchange carriers such as AT&T. Upon the completion of our switching upgrade in 1989, equal access capabilities will be provided to interexchange carriers such as U. S. Sprint, Teleconnect, M.C.I. and AT&T.

World wide communications from the Wiggins Telephone Association service are by means of links with U.S. West to existing facilities in the Denver area.

d. Existing Network

Wiggins Telephone Association serves the rural areas in northeastern Colorado. We provide single party service to all of our subscribers. Fiber optic facilities could be provided through connection with U.S. West and AT&T.

e. Planned Future Upgrades/Additions

Wiggins Telephone Association is upgrading their current switching facilities to the most advance digital switching systems. This upgrade will be completed in 1989. Because our subscribers are already receiving single party service, this upgrade will allow us to provide digital switching features, such as Custom Calling and integrated Business Services, which are not available in some of the larger towns of Eastern Colorado.

5 To summarize my comments, I would like to point out that we service our subscribers with an advanced digital, single

party telecommunications system that is not available to subscribers in some larger areas. We have the expertise available to design and install the system needed at the SSC site. We may be a small company, but I feel this is a very positive factor. Because we are small we value our subscribers and it allows us to work with them individually to provide the best service possible. We are deeply committed to continuing the provision of quality telecommunications service to our present subscribers and to possible future subscribers such as the SSC site.

Upon completion of your review, I'm sure you will feel as I do, that Colorado is the best site for the Superconducting Super Collider. Thank you for your time and attention.

Sincerely,

Dwight E. Schmitt

Dwight E. Schmitt
General Manager

DES/mjl

Enclosures (2)

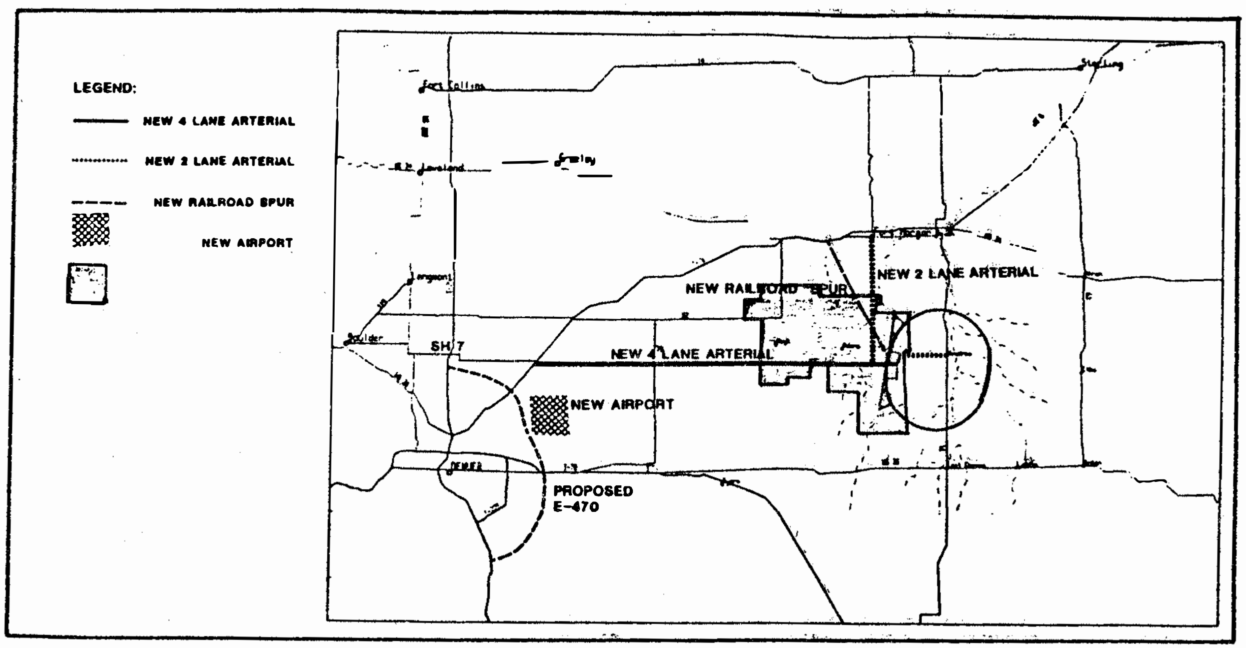
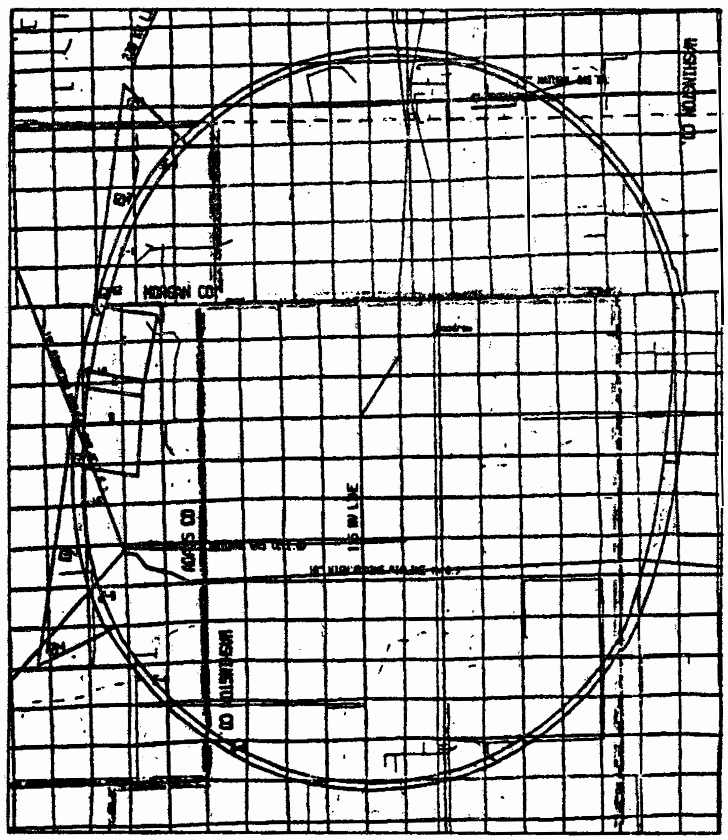


Figure 2

Wiggins Telephone Association Adjacent to SSC Site



Wiggins Telephone Association U. S. West

Eastern Slope Rural Telephone Association

Figure 1

Telecommunications Company Service Areas At The SSC Site

LETTER 1314

Dear Doctor Hess,

Enclosed please find a list of our objections to siting the SSC in Illinois. We hope you are a man of enlightenment and character and will choose an alternate site for this project — hopefully where it will not devastate so many lives.

We implore you to forget about Illinois.

Sincerely

Dr. and Mrs. Dennis M. Haggerty
38W383 Ferson Woods Drive
St. Charles, Il. 60175

LETTER 1314 (CONTINUED)

Problems with the Illinois site

2 * 1 More wells will be closed in Illinois than in all other states combined.

3 * 2 More property owners are involved than in all other states combined.

4 * 3 More businesses will be closed or relocated in Illinois than at all other sites combined.

5 * 4 More acres of prime farmland are being removed from production in Illinois than in any other state.

6 * 5 Illinois has the second largest number of wetlands (850 acres) that may be adversely impacted.

7 6 Leakage into the access shafts and tunnel will be the third highest of all the sites.

8 * 7 The worst water leakage problem occurring at any site occurs in the 5 mile stretch between E3 and E4 on the southern end of the ring in Illinois. This section south of Big Rock is expected to flood at the rate of 5200 gallons/min/100 feet or nearly 20 million gallons per day.

9 * 8 Illinois has a regional groundwater overdraft.

LETTER 1314 (CONTINUED)

10 √ * (9) Illinois has a local groundwater overdraft situation in Northern Campton Township.

11 √ * (10) The presence of methane gas is a potential safety hazard and can be expected to slow down tunnel construction in Illinois.

12 √ (11) The entire Fox Valley Illinois site is covered by Flood Rate Insurance Maps and shows a high probability for damage due to flooding. This is not true at other sites.

13 √ * (12) The Illinois site has the largest number of people living adjacent to proposed SSC facilities. As a result, more people in Illinois will be adversely impacted by noise pollution, air pollution, exposure to airborne radionuclides, adverse visual impacts, noise and vibrations due to dynamite etc.

14 √ * (13) Illinois is the only site with an existing groundwater quality problem — elevated levels of radium in our groundwater supplies.

15 √ (14) The surface water quality of the Illinois site is already the worst of the seven sites.

16 √ (15) The air quality of the Illinois site is the worst of all seven sites.

305

17 (16) The roads at the Illinois site are the most congested of any site and the only ones subject to breakdowns in flow of traffic. More travel time will be required to move from point to point around the Illinois site than at any other.

18 (17) Illinois shows the lowest levels of public service available at all sites. Our student teacher levels are the worst, our health care levels are the worst, and fire and police protection are both well below the national average.

19 (18) Only the Illinois site is located in an area which already has two sources which contribute to an increase in the natural background radiation level — Fermilab and the Kerr-McGee Chemical Plant.

20 (19) Illinois is already the site with the greatest number of potentially hazardous or Toxic materials sources.

21 (20) Illinois is the only site in an area designated as in nonattainment for both ozone and carbon monoxide levels.

22 (21) Total suspended particulate levels (TSP) at local E, F, and J sites in Illinois will exceed the National Ambient Air Quality Standards

LETTER 1314 (CONTINUED)

23 * (22) Illinois is the only state which shows an expected change in land use patterns — from agricultural to commercial or residential.

24 √ (23) Illinois is the site with the greatest number of man-made sources of radioactivity.

25 * (24) Illinois has the largest surface water channel crossing the site (Fox River). The siltation of streams becomes even more pronounced because the Illinois site involves the greatest watershed area.

26 √ (25) Illinois already has the highest background noise levels adjacent to the proposed E & F access shafts.

27 * (26) Kendall County is only one of two counties at all sites where a negative economic benefit is anticipated for the life of the project.

28 (27) Illinois is only 1 of 2 states where prairie lands will be adversely impacted.

29 (28) Reduction of the number of spoils dumps down to 4 locations in Illinois creates problems with congested traffic on all haul roads and with congestion at the dump sites themselves.

LETTER 1314 (CONTINUED)

* (29) There is a direct hydrological connection
between the surface waters and groundwater
supplies at the Illinois site. This opens the
30 potential for groundwater supplies to be
adversely impacted by siltation or
other pollutants entering our surface waters.
This situation only exists in Illinois
and Michigan.

(30) Illinois has overall weather problems
31 which can be translated into increased
time devoted to tunneling than is necessary
at other sites.

(31) The presence of the largest opposition to
the SSC project can be equated with
32 more time and money being spent if
Illinois is selected. The selection of
another site won't require as extensive
amounts of mitigation or litigation.

(32) The large numbers of parcel owners
33 means Illinois will have the most difficult
land acquisition process.

* (33) Unlike Texas and Arizona, the Illinois
tunnel is not above the groundwater aquifers.
Most major problems with the Illinois
34 proposal stem from the fact that the Illinois
tunnel lies within the aquifers associated
with our groundwater supplies, and places
the tunnel in close proximity to our thousands
of wells.

LETTER 1316

HARRIS W. FAWELL
13TH DISTRICT, ILLINOIS
EDUCATION AND LABOR
SUBCOMMITTEES:
LABOR-MANAGEMENT RELATIONS
ELEMENTARY, SECONDARY, AND VOCATIONAL EDUCATION
SCIENCE, SPACE, AND TECHNOLOGY
SUBCOMMITTEES:
ENERGY RESEARCH AND DEVELOPMENT
INTERNATIONAL SCIENTIFIC COOPERATION
SELECT COMMITTEE ON AGING

Congress of the United States
House of Representatives
Washington, DC 20515

WASHINGTON OFFICE:
CANNON HOUSE OFFICE BUILDING
(202) 225-3515
CONGRESSIONAL DISTRICT OFFICE:
115 W. 55TH STREET
SUITE 100
CLARENDON HILLS, IL 60514
(312) 655-2052

October 13, 1988

Dr. Wilmot Hess
SSC Site Task Force
U.S. Department of Energy
1000 Independence Avenue, S.W.
ER-65/GTN
Washington, DC 20545

Dear Dr. Hess:

I am writing to express my views on the selection of the site for the Superconducting Super Collider. There is no question that this is the most important decision to be made since President Reagan first approved the project almost two years ago because more than any other single factor the site will directly impact the integrity and vitality of the SSC facility for its entire future.

After all the technical criteria, such as geology, regional resources, affordability, etc., are weighed, there is no question that Illinois offers far and away the best site for the SSC. The draft Environment Impact Statement makes clear that Illinois is not only environmentally sound, but it is far superior to the other sites. Building the SSC at Fermilab would require the construction of only eight miles of new roads and two miles of new powerlines, the smallest infrastructure improvements of all the sites. Our site is located near a major municipal center, Chicago, and is conveniently accessed by all forms of transportation. In addition, Illinois' air quality is very good and its water supply is plentiful and convenient. (Only 32 wells, not the 320 stated in the draft EIS, would be lost to the public.) The impacts on farmland would be marginal; only Arizona would lose fewer acres of prime farmland to the construction of the SSC. Wetlands would also be left virtually untouched, and Fermilab's prairie restoration project clearly demonstrates that Illinois cares about protecting its natural environment.

It is not enough to show that we can do it, however. We must also show that we can afford it. Here again Illinois stands head-and-shoulders above the competition. By incorporating the existing facilities at Fermilab into the SSC, the Department of Energy would save almost $500 million in construction costs and $88 million per year in operating costs. Total savings over the lifetime of the project would be in excess of $3.2 billion! This is in addition to the other infrastructure improvements that Illinois has offered, such as building the entire tunnel for the SSC ring at no cost to the Federal Government. Other states may talk of cost savings or cash contributions, but only Illinois offers real, concrete proof that it will save the taxpayers' money. By choosing Illinois as the site of the SSC, the

Department of Energy will have not only have opted for scientific merit but will also have taken the most cost-efficient route. And as a member of the House Science Subcommittee on Energy Research and Development, the committee with primary jurisdiction over the SSC, I can plainly say that cost-efficiency will figure prominently into future authorization and appropriation hearings.

Finally, Illinois offers one clear advantage that cannot be measured in dollars or acres and that is experience. For twenty years Illinois has worked closely with the Department of Energy to make the Fermi National Accelerator Laboratory an outstanding success. For twenty years Fermilab has been the world's center for high energy physics research. This kind of success cannot simply be packed up and moved away to a new site. Fermilab is high energy physics, and its loss would mean not only irreparable harm to Illinois but also a dangerous tearing of the fabric of the nation's academic community. When weighed against all the advantages of the Fermilab site, there is no question that this risk would simply be too great to bear.

In short, Illinois offers the experience, the savings, and the environmental quality that no other state can match. When the American taxpayers are asked to pay for this $4-billion facility, they will want to be assured that the site was selected for sound technical and financial reasons. They will want to be assured that they are getting their money's worth. Illinois and Illinois alone offers these assurances.

Thank you for your time and your consideration of this matter.

Very truly yours,

Harris W. Fawell

Harris W. Fawell, M.C.
318 House Office Building

HWF/byb

LETTER 1317

DEPARTMENT OF THE ARMY
WILMINGTON DISTRICT, CORPS OF ENGINEERS
P.O. BOX 1890
WILMINGTON, NORTH CAROLINA 28402-1890

October 11, 1988

IN REPLY REFER TO

Planning Division

Dr. Wilmot Hess, Chairman
SSC Site Task Force
ER-65, GTN
Office of Energy Research
U.S. Department of Energy
Washington, D.C. 20545

Dear Dr. Hess:

Thank you for the opportunity to review the draft Environmental Impact
Statement (EIS) for the Superconducting Super Collider. The draft EIS has
done a good job of coalescing a vast amount of information in a format which
permits unbiased comparison of the sites under consideration. We have
confined our detailed review to those portions of the document concerning
1 the potential North Carolina site, as the other sites being considered are
outside of our jurisdiction.

In general, discussion of the resources of the North Carolina site was adequate for this stage of project planning. The following comments are provided for your use in preparing the final EIS and in detailed project development should the North Carolina site be selected.

a. Volume I.

2 (1) Chapter 4, page 4-56, paragraph 4: The discussion of the
copperchcek darter belongs under the discussion of candidate species of
Tennessee, not North Carolina.

(2) Chapter 5, pages 5.1.5-29 through 5.1.5-34: It is unclear
3 exactly what the hash-marked areas shown on these figures represent. This
should be clarified here and other places these maps are used (e.g., volume
IV, appendix 11, pages 39-44).

(3) Chapter 5, page 5.1.5-35, Mitigation section: A Department
of the Army permit under Section 404 of the Clean Water Act of 1977, as
4 amended, will be required from the Corps of Engineers to discharge dredged
or fill material into waters of the U.S. or adjacent wetlands. If you can
design your project to avoid wetland fill or use applicable general or
nationwide permits, an individual Section 404 permit will not be required.
If an individual Section 404 permit is required, the permit decision will be
based on a public interest review process and, accordingly, the impacts on

affected wetlands must be addressed in detail before the permit can be considered. Design and construction to avoid or minimize impacts on environmental resources, especially waters and wetlands, will significantly enhance the prospects of a timely and positive response to your permit requirements. My staff is available to provide assistance in identification of wetlands, to verify Section 404 jurisdictional lines, and to explain all aspects of the permit process. This comment also applies to volume I, chapter 6, page 2, Dredge and Fill Permits; and volume IV, appendix 11, page 45.

5 (4) Chapter 5, page 5.1.5-36: The classifications WS-I and WS-II should be defined.

6 (5) Chapter 8, Distribution section: The Wilmington District is not included in the list of Federal agencies receiving a copy of the draft EIS. We request that you add us to the list.

7 b. Volume IV, Appendix 5c. Page 2, figure 5.5.1-1, and page 21, figure 5.5.2-2: Falls Lake should be shown on these figures.

c. Volume IV, Appendix 7.

8 (1) Page 52, paragraph 3, lines 1-4: A disturbed area greater than 800 acres should not be considered small. The proposed erosion and sedimentation control plan needs to be described in detail.

9 (2) Page 53, figures 7-9: Falls Lake and Little River Reservoir should be shown on these maps.

10 (3) Page 55, paragraph 3, and page 56, paragraph 1: As indicated above, the proposed erosion and sedimentation control plans should be discussed in detail.

11 (4) Page 56, paragraph 2: The exact locations of the disposal areas need to be indicated.

12 (5) Page 57, Water Quality section: Throughout this section, potential sources that may cause impacts to surface water quality are discussed (i.e., surface erosion, channel erosion, pollutant washoff, dewatering the tunnel, increased wastewater treatment plant effluent, and cooling tower blowdown). However, no specific pollutants (except turbidity) or concentration and loading of pollutants are described for any of the indicated sources. This information needs to be provided so that impacts to water quality can be adequately assessed. In addition, the potential impacts to the water quality of Falls Lake and Kerr Lake need to be discussed.

13 (6) Page 59, Surface Water Use section: Falls Lake needs to be discussed in this section.

14 d. Volume IV, Appendix 10. Page 9, table 10.3.3-5: What will be the types of wastes treated (domestic, cooling tower blowdown, etc.), chemical composition of these wastes, and the concentrations of these chemicals in the effluent discharged into creeks and streams?

e. Volume IV, Appendix 11.

15 (1) Page 36, Area 3: This discussion mentions two species of rare mollusks in the Tar River, while other portions of the report refer to three such species and still others refer to four. This should be clarified.

16 (2) Page 38, paragraph 4: In this paragraph, it states that 20 sites have been identified for excavated material disposal sites, while in appendix 10, section 10.2.3.5, it discusses only 17 disposal sites. This discrepancy should be rectified.

17 We hope these comments will be useful to you in preparing a final EIS on the North Carolina site should it be selected. If you have any questions regarding our comments, please contact Mr. William P. Adams, Environmental Resources Branch, at (919) 343-4748. If we can be of further assistance to you in your planning for this project, please do not hesitate to contact us.

Sincerely,

Paul W. Woodbury
Colonel, Corps of Engineers
District Engineer

LETTER 1318

TEXAS NATIONAL RESEARCH LABORATORY COMMISSION

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October 13, 1988

Dr. Wilmot Hess, Chairman
SSC Site Task Force
ER-65/GTN
Office of Energy Research
U.S. Department of Energy
Washington, DC 20545

Ref: SAI# TXR-88-08-29-001-50

Dear Dr. Hess:

The Texas National Research Laboratory Commission has reviewed the draft Environmental Impact Statement (EIS) on the Superconducting Super Collider (SSC) prepared by the U.S. Department of Energy (DOE). As a part of its review, the Commission called upon appropriate state agencies for comment. A list of the state agencies participating in the review of the draft EIS is provided as Attachment A. The results of our review follow.

The Commission found the draft EIS to be comprehensive, fair and accurate. On the whole, methodologies and models used to compare the seven sites were appropriate to the task and were properly employed. In general, findings in the draft EIS confirmed the view of the Commission that the impacts of developing the Texas site for the SSC would not be significant.

We would like to begin by clarifying the discussion of the Commission's authority found in the first paragraph of Section 4.3.2.7, Volume IV, Appendix 4 (page 13). The Texas legislature created the Texas National Research Laboratory Commission in 1985 under Article 4413 (47d) of the Texas Revised Civil Statutes. That article confers on the Commission the power of eminent domain to acquire land for siting the SSC, and the authority to issue up to $500 million in general obligation bonds and $500 million in revenue bonds backed by legislative appropriation. Furthermore, Tex. HB 2085, 70th Leg., Reg. Sess. (1987) authorizes creation of a multi-district super collider authority (SCA) comprised of two or more counties, cities, or other public entities which will have the power of eminent domain to acquire land and to convey land to the Commission for siting the SSC.

Our comments are organized according to these headings: earth resources; water resources; climate, meteorology and air quality; noise and vibration; environmental hazards and waste; ecological resources; land resources; socioeconomics and infrastructure; cultural and paleontological resources; and scenic and visual resources. In its review, the Commission was aware that DOE will develop a detailed, site-specific EIS after selection of a preferred site. Accordingly, our comments have been developed consistent with the programmatic evaluation of the potential effects to the human environment from construction and operation of the SSC at the Texas site. We understand that a more rigorous assessment of these effects will be appropriately reserved until publication of the Supplemental Site Specific EIS.

<u>Earth Resources</u>

2 Although the description of the existing condition of the various elements constituting earth resources is largely accurate, the discussion in the draft EIS identifies some information that may be inconsistent or require clarification. The following comments are offered to clarify and substantiate the earth resources of the Texas site:

3 * Inconsistent reference is made throughout the draft EIS to the lithology of the Taylor group. The lithology is best and most consistently referred to as marl rather than calcareous claystone.

4 * Table 4-1 suggests that faults with maximum displacements of 100 feet occur in Austin Chalk. Though displacements approaching 100 feet have been reported, this is the exception rather than the rule. Displacements of more than 10 feet are rare; most are less than a few feet.

5 * Caution is suggested in use of the term "low strength rock." Strength available in both the chalk and the marl is more than adequate to allow the rock to support itself for the proposed conditions of relatively shallow tunneling.

6 * Table 4-1 also refers to minor oil production from a depth of over 800 feet at the Texas site. However,

there is no oil production within several miles of the Texas SSC site. Furthermore, it is stated on page 28 of Appendix 6, that "No producing wells are known within the immediate vicinity of the site, and potential for undiscovered occurrences beneath the site is small."

7 Concerning the assessment of impacts to earth resources, the Commission concurs that no cumulative impacts can be identified. However, the following comment is offered:

* Surface topography effects at the injector site will be diminished because the MEB and HEB facilities will be completed by tunneling, not by open excavation.

Water Resources

8 The draft EIS confirms that development of the SSC will not result in significant impacts on water resources at the Texas site. Two possible impacts reported in the draft EIS can be mitigated. First, encroachment of Site J-4 on Chambers Creek, which could affect its water quality and existing uses, can be mitigated by relocation of the J-4 facility. This possibility is noted on page 74 of Appendix 7 of the draft EIS.

9 Second, "measurable impact" on ground water levels due to SSC facilities, as noted in Volume I, Chapter 3, page 3-66, and Chapter 5, page 5.1.2-29, will likely not occur due to increasing reliance on surface water supplies by users in the area. Thus, it cannot be said that the use of groundwater by the SSC is a perpetual adverse impact, as action is underway to alleviate the impact with or without the project. Specifically, the Texas Water Development Board has initiated a study to develop a long-range water master plan for Ellis County. The study is 40 percent complete and is scheduled to be finished in March 1989. At present, this study supports regionalization of the Ellis County water supply utilizing Cedar Creek and Richland-Chambers reservoirs as the primary source to meet Ellis County demands. Inasmuch as the majority of the participating entities have expressed their desire to proceed with converting present groundwater usage to surface water supplies, it is likely that the regionalized approach will be adopted, thereby relieving existing impacts to groundwater resources. Development of the SSC in Ellis County will only serve to accelerate the conversion, resulting in new, beneficial impacts to the groundwater supply.

10 With regard to SSC facilities impacting on groundwater resources, groundwater usage at remote service areas was proposed as a cost-saving measure. However, it is evident that this potential impact can be mitigated utilizing abun-

dant surface water supplies. Moreover, adoption of the regionalized water plan described above will facilitate the accessibility of these resources to the service areas. Also note that Table 4-4 of Volume I, page 4-19, overstates current groundwater use. Rather than 9,000 acre-feet per year, current use is estimated to be 6,112 acre-feet per year. (See the Environmental Information Document submitted by Texas, Tables 2.2.4-1 and 2.2.4-2, Attachment B.)

11 Finally, after baseline information to be used in the draft EIS had been gathered, the Rockett Water Supply Corporation applied to the Texas Water Commission for appropriative water rights subject to their proposed Red Oak Creek Reservoir. The National Research Laboratory Commission opposes this project in the interest of supporting the utilization of existing excess water supplies at Richland-Chambers Reservoir as a more plausible alternative. The Commission and the Rockett Water Supply Corporation agreed in June 1988 that if the Texas SSC site is chosen, the interests of Rockett Water Supply Corporation's customers would best be served by existing surface water supply sources, obviating the need for their reservoir. It would also appear that the ongoing Ellis County Water Supply study and the current attitudes toward regionalization raise serious questions concerning the necessity of the Red Oak Creek Reservoir even without the SSC.

In addition, the TNRLC review found the following:

12 * Volume I, Page 6-2, states that Texas has no antidegradation policy to protect existing water quality. We note that the Surface Water Quality Standards of the Texas Water Commission, pages 13-16, relate specifically to antidegradation. These standards were adopted in April 1988 and include this general policy statement: "It is the policy of this state and the purpose of this chapter to maintain the quality of water in the state consistent with public health and enjoyment, propagation, and protection of terrestrial and aquatic life, operation of existing industries, and economic development of the state; to encourage and promote development and use of regional and areawide wastewater collection, treatment, and disposal systems to serve the wastewater disposal needs of the citizens of the state; and to require the use of all reasonable methods to implement this policy."

13 * In Volume I, chapter 5, page 5.1.2-29, and Volume IV, appendix 7, page 143, it is stated that the Woodbine and Twin Mountains aquifers have relatively low transmissivities and that the radius of influence of drawdown may extend relatively long distances from wells. Radius of influence is directly proportional to aquifer transmissivity. Therefore, the radius of influence of

drawdown in low-transmissivity formations is small relative to that radius in highly transmissive formations. The draft EIS implies the opposite.

14 * Volume I, table 4-3, page 4-16. The summary of hydrologic setting and depth-to-water at the Texas site omits the important fact that the limited near-surface alluvial aquifers are perched at considerable height above the regional aquifers and are separated by a great thickness of unsaturated, low-permeability chalk and marl.

15 * The surficial alluvial aquifer is of relatively high permeability, and it is locally important to residents of Ellis County. However, this aquifer will be encountered only at some shaft locations where standard construction techniques will be utilized to stop any groundwater movement into the shaft. Any impact to this aquifer associated with construction activities will be restricted to the shaft areas and will be of very short duration. The quality of the water supply will not be affected, and the impact on aquifer utilization will be minimal and temporary. On completion of construction, this shallow aquifer will be sealed by shaft lining and depth of rock cover from communication with the tunnel.

16 * In Volume IV, appendix 7, page 148, the text does not point out that the tunnel in Austin Chalk would be above the regional groundwater level in the Woodbine Formation. Groundwater by definition is water occurring in the zone of saturation beneath the water table. Except for positions beneath stream beds where cover depth is minimal, there is no water in the rock pores above the water table that would be drawn to the tunnel face by capillary gradients.

17 * In Volume IV, appendix 7, page 148, the statement, "Septic tanks and leach fields would likely introduce some level of contaminants...at a very localized scale to site groundwater," probably exaggerates the effect. Most far-site septic tanks and leach fields would be sited in Austin Chalk or Taylor Marl at considerable height above the regional aquifer. Water would percolate very slowly through thousands of feet of rock, allowing considerable attenuation by dilution, dispersion, or absorption before the water is discharged in seeps at stream cuts or reaches the water table. Travel times are on the order of tens of thousands of years.

Climate, Meteorology and Air Quality

The Texas Air Control Board review of the draft EIS
found no air quality issues that are likely to affect the
siting of the SSC in Ellis County. Three corrections to
information presented in the draft EIS are suggested. First,
Table 4-6, Volume I, Chapter 4, page 4-27, presents ambient
lead data for Baton Rouge, Louisiana, as representative of
18 lead concentrations in Ellis County. Available Dallas County
lead concentrations would be more appropriate. Second, the
ozone data presented in Table 4-5, Volume I, Chapter 4, page
4-23, represents concentrations downwind of the Dallas area.
Ellis County is upwind from the Dallas urban core. Finally,
in Table 4-7, page 4-28, and Table 5.7.4-5, emissions information
for Texas is actually in pounds per hour, rather than
in tons per year as depicted in the tables.

One additional air quality issue is that of temporary
emissions of total suspended particulate (TSP) or dust during
construction. As indicated in the draft EIS, this con-
19 dition will be similar at all potential SSC sites and can be
minimized through the use of available mitigation measures
such as suppression by water sprays.

The Commission's review of draft EIS data on climate
and meteorology finds that information to be generally accurate,
though more recent data are available in the publica-
20 tion The Climates of Texas Counties, 1987 (See Attachment
C).

Noise and Vibration

Commission review of the "Noise and Vibration Assessments"
section of the draft EIS, Appendix 9, confirms the
DOE conclusion that "...a regional increase in the ambient
sound level is not expected." (Appendix 9, page 72.) Noise
level increases that will occur on a local basis due to SSC
21 activities in the vicinity of human receptors can be mitigated
by techniques identified in various sections in
Appendix 9. For example, the impact of noise generated by
spoils hauling could be mitigated by limiting hauling activities
to daytime hours and by specifying routes that avoid
residential concentrations.

Noise and vibration caused by blasting will not be a
22 problem at the Texas site because the properties of the host
rock will allow all excavation to be performed by mechanical
means.

Two conflicting statements appear in Volume 4, Appendix
9, page 6. "Increased passenger vehicle traffic on roads
during both construction and operations will not have the
23 potential to create significant noise impacts" and ..."Area

residents are likely to be annoyed by noise levels from roads which experience increased traffic as a result of SSC." The Commission's review supports the first statement.

Environmental Hazards and Waste

24 The Texas Department of Health, Bureau of Radiation Control (BRC), has reviewed information contained in the draft EIS on environmental radiation. The BRC found the information to be, on the whole, accurate and comprehensive. The agency has provided more recent and, in BRC's opinion, more accurate data on radon in living spaces. (See Attachment D.)

25 DOE listed potential hazardous/toxic material sources in the immediate areas of the seven site alternatives. None were listed for Texas. DOE also concluded that pathogens did not occur, but potentially hazardous organisms were not included in the draft EIS assessment. Data collected by the State for the SSC proposal and the Environmental Information Document (EID) would support a position that organisms such as poisonous snakes, insects, or plants are not a potential hazard to the construction and operation of the SSC.

26
* Inconsistent reference is made throughout the draft EIS concerning volumes of muck to be produced during excavation and the methods by which such materials will be disposed. Inasmuch as the volumes of spoil material will depend upon a design not yet finalized, the Commission does not offer corrective measures at this time. Moreover, material excavated from tunnels and halls will be used as cement feedstock to the extent feasible, and the remaining materials will be placed in dry, abandoned quarries or in fills contoured to improve local topography (thereby reducing erosion), covered with topsoil and revegetated. However, the Commission cannot support reference to specific recommendations as to disposal methods described in Appendix 10, Volume I, Chapter 3, and elsewhere.

27 The Commission concurs with DOE's assessment which notes excess capacity for sewage treatment and industrial solid waste management in the area. With regard to cooling water disposition at the far cluster (Appendix 10.3.G-1), two options should be considered:

1. Tying into the existing City of Ennis collection system, or

2. Utilizing an evaporation pond as with the other towers.

Either of these alternatives is acceptable, however, the most cost-effective option cannot be defined at this time until more site-specific design data is available. In addition, the Texas Water Commission has provided a revised (June 1987) list of Authorized Commercial Industrial Solid Waste sites (See Attachment E). Finally, it should be noted that the low-level radioactive waste disposal site currently under consideration in Texas is approximately 500 miles from the proposed SSC site (Volume I, Chapter 6, page 6-10).

Ecological Resources

28 The Commission concurs with DOE's assessment that construction of the SSC in Texas will impact less than 10 acres of wetlands as currently proposed. Moreover, it would be useful to distinguish between jurisdictional wetlands and riverine habitat with associated hydric communities. Such a distinction would more clearly portray the type and quality of aquatic habitat present at the Texas site, particularly as it relates to other sites.

29 The riverine impacts in Texas are associated with the activity at the J-4 beam access area. The conclusion drawn in Section 11.3.7.3, Mitigation (page 54), that the impacts of construction activities associated with J4 can be mitigated only by locating J4 to areas outside of the Chambers Creek area is overstated. There are alternatives for mitigating the Chambers Creek construction, such as:

1. analyzing the design to limit adverse construction impacts through avoidance;

2. designing mitigation features into the site plan; for example, creating wetlands and planting bottomland hardwoods; and

3. acquiring an adjacent area with similar habitat which would be purchased for permanent habitat preservation.

30 The Texas Parks and Wildlife Department reviewed the potential impact of the SSC on habitat of the Black-capped Vireo. The agency noted that Volume IV, Appendix II, Section 11.3.7.2, page 51, states that the nearest nesting habitat for the bird is about 2 or 3 miles west of a line parallel to the outer edges of Area I and that no habitats are known to exist on the site. This additional information on habitat of the Black-capped Vireo indicates that impact mitigation is not required.

31 The Environmental Information Document submitted to DOE on March 15, 1988, includes lists of fish, reptile, bird and mammal species normally occurring in the Dallas-Fort Worth

project area. These lists are more complete than the information found in Volume IV, Appendix 5C, Section 5.7.9, Tables 5.7.9-1 through 5.7.9-7. (See Attachment F.)

Land Resources

32 The land resource impacts of siting the SSC at the Texas site will be positive. Project development is likely to be an important source of growth in the Dallas-Fort Worth area consistent with ongoing development within the region of influence.

33 The draft EIS states in Appendix 4, Section 4.4.7.3, that project development will require 224 relocations. However, an on-the-ground count conducted by the State Department of Highways and Public Transportation (SDHPT, April 1988) shows 175 resident relocatees, of which 120 live in conventional housing and 55 live in manufactured housing. The SDHPT also identified 911 available replacement houses in Ellis County. No business relocatees were identified.

34 One other land resource concern is the impact on prime farmland. The Commission agrees with DOE that the loss of prime and important farmlands is small and lower than the average amount lost every year to other development. (Volume I, Chapter 5, page 5.2.9.)

Socioeconomics and Infrastructure

35 The Commission has evaluated and generally agrees with the socioeconomic analysis contained in the draft EIS. The draft EIS (Volume I, Chapter 5 and Volume IV, Appendix 14) adequately identifies and evaluates economic and social change associated with preconstruction, construction and operation of the SSC in Texas. It accurately portrays the Texas region of influence as one which is expected to enjoy long-term population growth and economic expansion. The data in the EIS is generally consistent with State of Texas sources.

The draft EIS identifies no unmanageable adverse socioeconomic impacts to the Texas environment that would result from the SSC project. In fact, the nature of SSC-associated economic and social change will be predominantly positive in the event of a Texas siting decision.

36 Public school officials in Ellis County have expressed concern over potential net negative fiscal impacts on their school districts. The Commission has agreed to develop financial mitigation strategies to ensure that net negative fiscal impacts do not occur for these school districts.

The Commission review also found the following:

37 * The statement regarding allocation of motor fuel tax revenues to counties is incorrect. (Last paragraph on page 118, Appendix 5c). Actually, one-quarter of motor fuel tax revenues is allocated to the Available School Fund which helps finance the state's Foundation School Program. Counties currently receive a combined total of $7.3 million per year from the state general revenue fund for road purposes.

38 * Local governments receive 25 percent of the alcoholic beverage sales tax (page 119, Appendix 5c).

39 * Table 5.7.11-5. Figures listed are actual dollar amounts rather than thousands of dollars (page 120, Appendix 5c).

40 * Table 5.7.11-6. Figures listed are actual dollar amounts rather than thousands of dollars. Population for Waxahachie should be listed as 18,230 (page 121, Appendix 5c).

41 * Table 14.1.3.7-8. The 2.5 percent telecommunications tax appears to be based on the gross receipts tax which was repealed effective October 1, 1988. Long distance and basic local service are now subject to sales tax (page 262, Appendix 14).

42 Regarding infrastructure, the Commission is in general concurrence with DOE findings. However, concerning transportation, one omission from the draft EIS is a proposed highway connection of 2.1 miles between FM 66 and FM 1446. Also, it should be noted in Volume IV, Appendix 14, page 80, that modifications to the construction road system will total 20 miles of reconstructed 2-lane roads instead of the listed 23 miles.

43 Several corrections should be noted concerning electrical utilities. To facilitate DOE's response to our comments we have included a revised version of the text as Attachment G, with corrections noted. In addition, the South Texas Nuclear Project has recently began commercial operations.

<u>Cultural and Paleontological Resources</u>

44 The draft EIS correctly notes that archaeological and paleontological studies have been completed in Ellis County (Volume I, Chapter 5, page 5.1.9-3). Known historical resources occur in the project vicinity but are concentrated in Waxahachie, Ennis, Palmer and other towns in Ellis County and will not be adversely affected by project development.

45 The State Historic Preservation Officer in Texas and DOE have already executed a programmatic agreement that specifies how historical and archaeological surveys and evaluations would be completed. This agreement covers treatment of significant resources and implementation of appropriate mitigative measures. The Commission is confident that the programmatic agreement will adequately protect any previously unrecorded prehistoric and historic archaeological sites that may be found.

<u>Scenic and Visual Resources</u>

46 Scenic and visual resources would be impacted to a limited degree. The Commission concurs with DOE's summary on page 5.1.10-21 of Volume I, Chapter 5: "Although many of the proposed facilities would be noticeable to dominant as seen from secondary roads and isolated farm structures, few of the affected views are sufficiently sensitive for the effects to be considered an impact." In local areas where views from residential areas would be impacted, various mitigations can be employed to conceal intruding facilities such as berming, landscaping, architectural treatment and screening. DOE makes note of these mitigative measures on page 5.1.10-21 of Volume I, Chapter 5.

47 The Commission appreciates the opportunity to comment on the draft EIS on behalf of the State of Texas. We will be pleased to provide further information or clarification of comments contained in this letter.

Sincerely,

Edward C. Bingler
Executive Director

Attachments A-G

cc: Robert Schenker
Morton Meyerson

ATTACHMENT A

CONTACTS AT TEXAS STATE AGENCIES

WHICH DEAL WITH ENVIRONMENTAL MATTERS

AIR CONTROL BOARD, TEXAS

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DEPARTMENT OF HEALTH, TEXAS

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Austin, Texas 78711

ATTACHMENT B

Environmental Information Document For The Dallas-Fort Worth Superconducting Super Collider Site

Volume 1

Land
10 Water
Ecology
Air
Noise
Archaeology & History

Texas National Research Laboratory Commission
Superconducting Super Collider
Dallas-Fort Worth

TABLE 2.2.4-1. LOCATED WELLS[1]

State Well Control Number	Use	Casing Diameter (inch)	Total Depth (feet)	Pumping Rate (gpm)	Formation[2]	Years of Production[3]
JK-32-40-601	Stock	4	759	—	Kwb	1962/P
JK-32-40-602	Stock	7	756	40	Kwb	1963/P
JK-32-40-603	Domestic, Stock	4	636	10	Kwb	1963/P
JK-32-40-604	Domestic	30	40	—	Kef	1962/P
JK-32-40-608	Public Supply	—	—	—	—	—
JK-33-25-902	Public Supply	6	2,763	250	Kho	1964/P
JK-33-25-903	Domestic	4	747	4	Kwb	1963/P
JK-33-25-906	Abandoned	4	698	4	Kwb	1965/A
JK-33-26-701	Domestic	4	692	—	Kwb	1962/P
JK-33-26-702	Domestic	4.5	900	—	Kwb	1955-60/P
JK-33-26-703	Observation	30	26.5	—	Kau	1900/P
JK-33-26-801	Public Supply	5	944	56	Kwb	1938/P
JK-33-26-802	Public Supply	4	1,171	90	Kwb	1962/P
JK-33-26-803	Domestic	30	50	—	Kau	1962/P

(continued)

TABLE 2.2.4-1. (continued)

State Well Control Number	Use	Casing Diameter (inch)	Total Depth (feet)	Pumping Rate (gpm)	Formation[2]	Years of Production[3]
JK-33-26-804	Domestic	—	867	—	Kwb	1959/P
JK-33-26-805	Public Supply	5	1,110	15	Kwb	1952/P
JK-33-26-806	Stock	30	15	—	Kau	1928/P
JK-33-26-807	Domestic, Stock	30	8	—	Kau	—
JK-33-26-808	Stock	18	16	—	Kau	—
JK-33-26-809	Abandoned	30	25	—	Kau	—
JK-33-26-810	Abandoned	30	15	—	Kau	—
JK-33-26-811	Domestic, Stock	30	50	—	Kau	1963/P
JK-33-26-812	Domestic, Stock	24	25	—	Kau	—
JK-33-26-815	Public Supply	3	1,100	—	Kwb	1971/P
JK-33-26-816	Public Supply	6	3,280	500	Ktm	—
JK-33-26-818	Public Supply	6	1,158	205	Kwb	1978/P
JK-33-33-201	Domestic	4	619	—	Kwb	1957/P
JK-33-33-202	Domestic	4.5	754	8	Kwb	1963/P

(continued)

TABLE 2.2.4-1. (continued)

State Well Control Number	Use	Casing Diameter (inch)	Total Depth (feet)	Pumping Rate (gpm)	Formation[2]	Years of Production[3]
JK-33-33-302	Domestic, Stock	4	400-500	8	Kwb	1935/P
JK-33-33-401	Domestic, Stock	4.5	642	9	Kwb	1963/P
JK-33-33-402	Stock	4.5	762	10	Kwb	1963/P
JK-33-33-403	Domestic	4	786	—	Kwb	1963/P
JK-33-33-404	Public Supply	4.5	2,490	210	Ktm	1982/P
JK-33-33-501	Domestic	4.5	780	8-10	Kwb	1968/P
JK-33-33-502	Domestic	4	600	—	Kwb	1940/P
JK-33-33-503	Stock	4	550	—	Kwb	1954/P
JK-33-33-504	Stock	4	550	—	Kwb	1954/P
JK-33-33-601	Domestic	5.5	1,017	—	Kwb	1969/P
JK-33-33-701	Domestic	—	1,425	—	Kp	1955/P
JK-33-33-702	Stock	—	695	24	Kwb	1955/P
JK-33-33-703	Stock	5.5	620	—	Kwb	1956/P
JK-33-33-704	Domestic	—	750	—	Kwb	1946/P

(continued)

LETTER 1318 (CONTINUED)

TABLE 2.2.4-1. (continued)

State Well Control Number	Use	Casing Diameter (inch)	Total Depth (feet)	Pumping Rate (gpm)	Formation[2]	Years of Production[3]
JK-33-33-705	Irrigation	7	2,475	—	Ktm	1969/P
JK-33-33-706	Irrigation	—	2,505	—	Ktm	1968/P
JK-33-33-802	Abandoned	3	30	—	Kau	1962/A
JK-33-33-803	Domestic	4.5	820	8	Kwb	1969/P
JK-33-33-901	Abandoned	—	42	—	Kau	1943/A
JK-33-34-101	Domestic	4	902	—	Kwb	1957/P
JK-33-34-102	Public Supply	4.5	952	8	Kwb	1963/P
JK-33-34-201	Domestic	24	41	—	Qal-Kau	1925/P
JK-33-34-202	Domestic, Stock	4.5	1,000	9	Kwb	1962/P
JK-33-34-203	Domestic, Stock	4	940	—	Kwb	1945/P
JK-33-34-204	Domestic, Stock	4.5	968	—	Kwb	1959/P
JK-33-34-205	Domestic, Stock	4.5	967	—	Kwb	1970/P
JK-33-34-206	Public Supply	3	1,191	—	Kwb	1971/P
JK-33-34-207	Public Supply	12.75	3,088	—	Ktm	1979/P

(continued)

TABLE 2.2.4-1. (continued)

State Well Control Number	Use	Casing Diameter (inch)	Total Depth (feet)	Pumping Rate (gpm)	Formation[2]	Years of Production[3]
JK-33-34-208	Industrial	3.5	1,035	—	Kwb	1986/P
JK-33-34-301	Public Supply	7	3,285	520	Ktm	1965/P
JK-33-34-302	Stock	30	15	—	Qal-Kau	-
JK-33-34-303	Stock	30	25	—	Kau	1936/P
JK-33-34-304	Abandoned	36	22	—	Kau	1954/A
JK-33-34-305	Domestic	36	30	—	Kau	1975/P
JK-33-34-306	Stock	42	20	—	Kau	1900/P
JK-33-34-601	Domestic, Stock	4	1,302	—	Kwb	1962/P
JK-33-35-401	Stock	6	1,295	25	Kwb	1952/P
JK-33-35-501	Abandoned	8	1,472	—	Kwb	1928/A
JK-33-35-502	Domestic	—	24	—	Kta	1940/P
JK-33-35-503	Public Supply	4	1,522	120	Kwb	1964/P
JK-33-35-504	Public Supply	4.5	1,440	151	Kwb	1985/P
JK-33-35-801	Domestic, Stock	30	18	—	Kta	1955/P

(continued)

LETTER 1318 (CONTINUED)

IIA.1- 2921

TABLE 2.2.4-1. (continued)

State Well Control Number	Use	Casing Diameter (inch)	Total Depth (feet)	Pumping Rate (gpm)	Formation[2]	Years of Production[3]
JK-33-35-803	Domestic, Stock	—	—	—	Kwb	—
JK-33-41-202	Domestic, Stock	4.5	727	10	Kwb	1964/P
JK-33-41-203	Public Supply	5.5	2,564	160	Ktm	1975/P
JK-33-41-204	Industrial	7	870	84	Kwb	1967/P
JK-33-41-205	Industrial	7	852	—	Kwb	1970/P
JK-33-41-206	Domestic	4.5	805	22	Kwb	1982/P
JK-33-41-401	Stock	4.5	728	10	Kwb	1964/P
JK-33-41-402	Domestic, Stock	4	690	10	Kwb	1962/P
JK-33-41-501	Public Supply	5.5	2,606	170	Ktm	1965/P
JK-33-41-502	Public Supply	7	802	—	Kwb	1968/P
JK-33-41-503	Domestic	5.5	758	7	Kwb	1974/P
JK-33-41-802	Stock	4.5	632	8	Kwb	1963/P
JK-33-41-901	Abandoned	—	620	—	Kwb	1954/A
JK-33-42-404	Domestic, Stock	4	836	10	Kwb	38

(continued)

TABLE 2.2.4-1. (continued)

State Well Control Number	Use	Casing Diameter (inch)	Total Depth (feet)	Pumping Rate (gpm)	Formation[2]	Years of Production[3]
JK-33-42-405	Public Supply	—	—	—	—	—
JK-33-42-701	Public Supply	4	940	20	Kwb	1950/P
JK-33-42-702	Public Supply	7	2,850	100	Ktm	1964/P
JK-33-42-704	Domestic	30	36	—	Kau	1953/P
JK-33-42-706	Domestic	30	35	—	Kau	1961/P
JK-33-43-204	Public Supply	4.5	1,445	195	Kwb	1985/P
JK-33-43-301	Abandoned	4.5	1,350	56	Kwb	1956/A
JK-33-43-401	Domestic, Industrial	8	1,350	150	Kwb	1950/P
JK-33-43-501	Domestic	36	32	—	Qal	1964/P
JK-33-43-602	Public Supply	6	1,806	—	Kwb	1951/P
JK-33-43-701	Public Supply	4	1,240	20	Kwb	1954/P
JK-33-43-702	Public Supply	6	1,480	—	Kwb	1954/P
JK-33-43-801	Public Supply	4	1,517	15	Kwb	1953/P
JK-33-49-201	Domestic, Stock	8	2,559	—	Kp	1944/P

(continued)

TABLE 2.2.4-1. (continued)

State Well Control Number	Use	Casing Diameter (inch)	Total Depth (feet)	Pumping Rate (gpm)	Formation[2]	Years of Production[3]
JK-33-49-202	Domestic, Stock	4.5	2,800	—	Ktm	—
JK-33-49-205	Domestic, Stock	3.5	814	—	Kwb	1966/P
JK-33-49-208	Domestic, Stock	4.5	668	8	Kwb	1963/P
JK-33-50-101	Domestic, Stock	4	1,050	—	Kwb	1958/P
JK-33-50-201	Domestic, Stock	—	1,000	—	Kwb	1915/P
JK-33-50-202	Public Supply	7	3,204	120	Ktm	1976/P
JK-33-50-301	Domestic, Stock	2	990	4	Kwb	1965/P

[1]Located wells have had their locations field verified by the Texas Water Development Board.
[2]Kau = Austin Chalk, Kef = Eagle Ford Shale, Kp = Paluxy Sand, Kta = Taylor Marl,
Ktm = Twin Mountains, Kwb = Woodbine, Qal = Alluvium.
[3]/P = to present, /A = to abandonment.

TABLE 2.2.4-2. PLATTED WELLS[1]

State Well Control Number	Use	Casing Diameter (inch)	Total Depth (feet)	Pumping Rate (gpm)	Formation[2]	Years of Production[3]
JK-32-40-6C	—	—	—	—	—	—
JK-33-25-9A	—	—	—	—	—	—
JK-33-26-7B	Irrigation	4	100	—	Kau	1978/P
JK-33-26-7C	Public Supply	4.5	948	10	Kwb	1979/P
JK-33-26-8C	Domestic	2.5	1,032	—	Kwb	—
JK-33-26-8D	Domestic	4.5	1,010	—	Kwb	—
JK-33-33-4A	Domestic	4.5	735	—	Kwb	1968/P
JK-33-33-4C	Domestic	4.5	710	5	Kwb	1969/P
JK-33-33-4D	Domestic	4.5	795	5	Kwb	1971/P
JK-33-33-6A	Domestic	30	40	—	Kau	1963/P
JK-33-33-6B	Domestic	30	35	—	Kau	1963/P
JK-33-33-6C	Domestic	30	40	—	Kau	1963/P
JK-33-33-6D	Domestic	30	42	—	Kau	1963/P
JK-33-33-7A	Domestic	4.5	776	5	Kwb	1968/P

(continued).

TABLE 2.2.4-2. (continued)

State Well Control Number	Use	Casing Diameter (inch)	Total Depth (feet)	Pumping Rate (gpm)	Formation[2]	Years of Production[3]
JK-33-33-7B	Domestic	4.5	762	5	Kwb	1968/P
JK-33-34-1A	Domestic	36	50	—	Kau	1968/P
JK-33-34-2B	—	—	—	—	—	—
JK-33-34-2C	—	—	—	—	—	—
JK-33-34-2D	—	—	—	—	—	—
JK-33-34-3A	—	—	—	—	—	—
JK-33-34-3B	Domestic	30	30	—	Kau	1974/P
JK-33-34-5B	Domestic	30	29	—	Kau	1973/P
JK-33-35-1A	Irrigation	30	48	50	Kta	1969/P
JK-33-35-2A	Domestic	36	40	—	Kta	1974/P
JK-33-41-1A	Domestic	2.5	641	—	Kwb	1972/P
JK-33-41-1B	Domestic	30	50	—	Kau	1973/P
JK-33-41-2A	Domestic	4.5	886	—	Kwb	1977/P
JK-33-41-2D	Domestic	2.5	763	—	Kwb	1972/P

(continued)

TABLE 2.2.4-2. (continued)

State Well Control Number	Use	Casing Diameter (inch)	Total Depth (feet)	Pumping Rate (gpm)	Formation[2]	Years of Production[3]
JK-33-41-3A	Domestic	30	50	—	Kau	1964/P
JK-33-41-3B	Domestic	4.5	780	115	Kwb	1985/P
JK-33-41-5B	—	—	—	—	—	—
JK-33-41-8A	Domestic	4.5	570	7	Kwb	1984/P
JK-33-41-8B	Domestic	4.5	588	—	Kwb	1985/P
JK-33-42-7A	—	—	—	—	—	—
JK-33-42-7B	—	—	—	—	—	—
JK-33-43-8A	Public Supply	—	1,362	112	Kwb	1979/P
JK-33-43-8B	Domestic	30	41	10	Kau	1979/P
JK-33-50-3A	Domestic	5.5	1,335	—	Kwb	1969/P

[1]Platted wells have been spotted on the map from the driller's logs and have not been field verified by the Texas Water Development Board.
[2]Kau = Austin Chalk, Kef = Eagle Ford Shale, Kp = Paluxy Sand, Kta = Taylor Marl, Ktm = Twin Mountains, Kwb = Woodbine, Qal = Alluvium.
[3]/P = to present, /A = to abandonment.

LETTER 1318 (CONTINUED)

ATTACHMENT C

The Climates of Texas Counties

20

Natural Fibers Information Center
The University of Texas at Austin

in cooperation with:

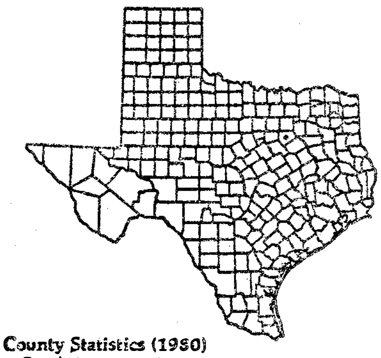
Office of the State Climatologist
Texas A&M University

Cover design by Steve Freeman, Graphic Solutions, Austin, Texas

ISBN 87755-301-7
Library of Congress Catalog Card Number 87-70092

Ellis County

Waxahachie



Annual Climatic Profile
Temperature
Daily maximum: 78° F
Daily minimum: 54° F
Mean: 66° F
Number of days of 90° F and above: 107
Number of days of 32° F and below: 44
Heating degree-days: 2370
Cooling degree-days: 2660
Precipitation
Mean: 36.3"
Record: 59.00" in 1973
Number of days with 0.1" or more: 52
Mean relative humidity (CST)

6:00 a.m.	79 %
Noon	55 %
6:00 p.m.	51 %

Winter Cold fronts are frequent, but they seldom remain longer than 48 hours before sunshine and southerly winds force rapid warming. Freezing temperatures are recorded on an average of less than one-half of the winter nights. Snowfall is usually of little consequence.

Summer is hot in Waxahachie's humid, subtropical climate. Daytime temperatures range in the 90s for prolonged periods, especially in July and August.

Spring/Fall Are both considered pleasant, characterized by mild days and cool nights. Cloudiness and showers are more frequent in spring than in fall.

Winds Maintain a southerly component throughout the year and are strongest in the spring.

Thunderstorms Occur on an average of 40 days in the year and are most frequent in May. They sometimes are accompanied by windstorms, but these usually are not destructive.

Growing Season Averages 246 days. The frost-free period runs from March 20 to November 21.

County Statistics (1980)
Population: 59,743
Average annual rate of population change, 1970 to 1980: 2.5 percent
Density: 63.6 persons per square mile
Median age: 30.2 years
Median family income: $20,096

County Seat: Waxahachie

County Economic Characteristics Ellis is a leading blackland farming county, producing cotton, sorghums, and other grains as well as livestock, dairy products, and honey. Varied manufacturing plants contribute to the economy, and many residents work in nearby Dallas.

Physical Features The terrain is level to rolling, consisting of rich blackland soils and draining to Chambers Creek and to the Trinity River, which forms the county eastern boundary. Minerals include cement, stone, clay, oil, and gas. Elevations range from 300 to 700 feet.

First-order Station: Dallas

Climatic Division: North Central (3)

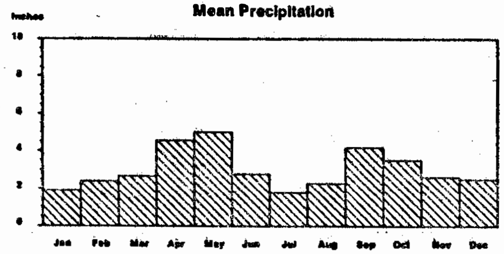
IIA.1- 2929

Station: WAXAHACHIE **Lat.(N) 32°24"** **Long.(W) 96°51"** **Elevation 628'**

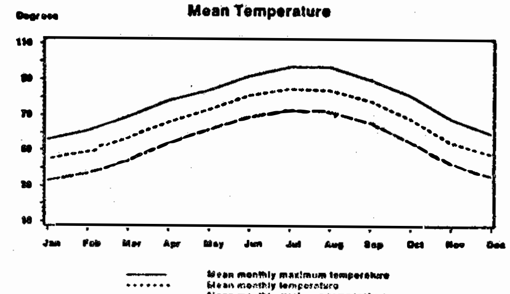
	Temperature (°F)							Mean degree-days 1951-80		Precipitation totals (inches)					Mean number of days		
	Means			Extremes											Precip. of 0.1" or more	Temperature	
Month	Daily maximum 1951-80	Daily minimum 1951-80	Monthly 1951-80	Record highest 1938-80	Year	Record lowest 1938-80	Year	Heating	Cooling	Mean 1951-80	Greatest monthly 1938-80	Year	Greatest daily 1938-80	Year	1950-80	Maximum 90°F and above 1956-80	Minimum 32°F and below 1956-80
Jan	56	33	45	85	1943	-1	1949	640	10	1.9	4.95	1938	2.31	1979	4	0	16
Feb	61	37	49	90	1980	4	1960*	450	10	2.4	6.53	1938	3.25	1965	5	+	10
Mar	69	44	57	96	1946	7	1946	310	40	2.7	7.30	1977	4.46	1973	4	+	4
Apr	78	54	66	102	1963	30	1975*	90	120	4.6	12.91	1942	7.00	1976	6	1	+
May	84	62	73	101	1958	38	1958	0	260	5.0	11.20	1957	5.19	1976	6	7	0
Jun	92	69	81	114	1980	50	1948	0	470	2.8	8.18	1959	6.48	1945	4	22	0
Jul	97	73	85	111	1954	55	1954	0	620	1.8	6.67	1973	2.65	1973	3	28	0
Aug	97	72	84	112	1948	54	1948	0	590	2.3	6.58	1942	3.65	1960	3	28	0
Sep	90	66	78	108	1939	37	1939	0	380	4.2	15.03	1958	10.80	1958	5	17	0
Oct	81	55	68	106	1979	27	1938	50	140	3.5	10.74	1971	4.71	1957	4	4	+
Nov	68	43	55	91	1980*	17	1976*	310	20	2.6	6.72	1957	3.97	1940	4	+	4
Dec	60	36	48	87	1951	8	1951	520	0	2.5	8.45	1960	2.23	1952	4	0	10

* Also on earlier dates.
\+ Less than 0.5.

Mean Precipitation



Mean Temperature



IIA.1- 2930

ATTACHMENT D

Terradex Corporation
A Tech/Ops Company

460 N. Wiget Lane
Walnut Creek, CA 94598, U.S.A.
(415)938-2545 Telex 33-7793

Tech/Ops Landauer

To GS

April 27, 1988

Dear Colleague,

We are looking forward to seeing you at the upcoming National Conference on Radiation Control in Nashville.

24 In anticipation of that event, we have been updating our data base of indoor radon measurements. Enclosed you'll find our most recent state-by-state compilation of results. At the meeting we'll have more detailed data by zip code to share with you.

During the past year we have begun to collaborate with a number of state agencies who want to encourage homeowners to make long-term radon measurements. In these programs we make radon detectors available to the public at an inexpensive price through the State. The administrative aspects of the program are handled entirely through our Glenwood Labs affiliate.

Also, because the individual homeowners purchase the detectors themselves, the State is not impacted financially. As an example, the enclosed brochure was printed by us for the State of Oregon Health Division which is encouraging citizens to make year-long radon measurements.

We'd like to tell you more about these programs and how they can be customized to fit your particular needs. Stop by the Tech/Ops Landauer display for more details.

Sincerely,

Richard A. Oswald

Richard A. Oswald, Ph.D
Western Regional Manager

RAO/kem
Enclosure

INDOOR RADON MEASUREMENTS IN THE UNITED STATES

(REVISED MARCH 17 1988)

TERRADEX CORPORATION

STATE	NUMBER	pCi per liter: MEDIAN	GEOM. MEAN	GEOM. STD.	ARITH. MEAN	PCT. GREATER THAN: 4(1) pCi/l	8(2) pCi/l	20(3) pCi/l	MAX READING pCi/l
AK	174	.80	1.02	3.57	2.86	16.1	8.0	1.7	72.70
AL	572	1.40	1.59	2.75	2.93	18.0	8.0	2.1	49.94
AR	21	.90	1.36	2.45	1.95	9.5	.0	.0	7.19
AZ	105	1.18	1.35	3.28	2.94	18.1	9.5	1.9	23.43
CA	1267	1.10	1.14	2.94	2.17	12.5	4.7	.8	67.88
CO	913	3.10	3.22	2.83	7.81	38.1	15.3	4.2	691.31
CT	546	1.74	1.75	2.78	3.32	19.2	6.6	1.5	152.88
DC	121	1.27	1.39	2.93	3.19	12.4	5.0	3.3	89.34
DE	53	1.12	1.17	2.60	1.80	11.3	1.9	.0	10.55
EC	227	2.41	2.87	3.49	7.26	31.3	17.6	8.8	94.51
FL	585	1.30	1.49	3.25	3.62	19.0	8.5	3.4	90.47
GA	125	1.56	1.69	2.75	3.11	19.2	7.2	2.4	40.80
HI	2	.36	.36	.00	.36	.0	.0	.0	.36
ID	837	3.07	3.31	3.12	6.46	41.6	23.5	6.3	126.30
IL	2718	2.20	2.28	2.67	4.79	26.2	8.1	2.0	396.90
IN	521	2.85	3.07	2.81	5.90	37.6	16.3	4.2	167.39
IA	195	1.80	1.91	2.59	3.04	22.6	5.6	1.5	25.35
KS	19	2.60	3.77	2.34	5.51	36.8	21.1	5.3	23.50
KY	155	1.83	2.18	3.32	4.30	32.9	20.0	2.6	34.55
LA	26	.65	.77	2.02	1.00	3.8	.0	.0	4.68
ME	1608	1.72	1.87	3.12	4.83	23.3	9.6	2.9	1212.46
MD	1424	2.30	2.39	3.05	4.81	30.1	14.0	3.3	171.50
MA	776	1.60	1.63	2.70	2.93	16.6	5.3	1.7	95.00
MI	285	1.31	1.54	2.78	2.76	17.5	6.3	1.1	63.80
MN	562	2.70	2.84	2.34	4.13	33.3	11.9	1.6	51.76
MS	31	1.20	1.01	2.49	1.49	3.2	3.2	.0	9.80
MO	291	1.70	1.68	2.38	2.54	14.8	3.1	.7	50.50
MT	463	3.04	2.97	2.62	4.78	35.9	14.9	3.0	63.20
NB	15	2.64	2.95	2.79	4.55	33.3	13.3	.0	17.12
NV	397	1.67	1.81	3.10	4.40	17.6	7.6	5.0	67.45
NH	169	2.63	2.63	3.32	5.49	32.5	17.2	6.5	72.68
NJ	6806	2.07	2.27	3.21	6.18	28.2	13.2	4.3	1234.55
NM	816	2.20	2.37	2.62	4.24	27.5	10.2	2.5	213.84
NY	9879	1.10	1.22	3.04	2.72	13.9	6.2	1.7	394.70
NC	170	1.50	1.49	2.89	2.59	14.1	5.3	1.2	30.09
ND	128	2.80	2.83	2.32	4.00	31.2	10.9	1.6	33.06
NW	903	1.10	1.19	2.94	2.37	12.6	5.8	1.0	70.50
OH	684	3.10	3.00	2.85	5.22	39.8	17.1	3.1	127.10
OK	95	1.10	1.29	2.57	2.29	11.6	5.3	1.1	27.30
OR	7150	.86	.91	2.51	1.50	6.2	1.7	.2	187.70

INDOOR RADON MEASUREMENTS IN THE UNITED STATES

(REVISED MARCH 17 1988)

TERRADEX CORPORATION

		pCi per liter				PCT.GREATER THAN			MAX
STATE	NUMBER	MEDIAN	GEOM. MEAN	GEOM. STD.	ARITH. MEAN	4(1) pCi/l	8(2) pCi/l	20(3) pCi/l	READING pCi/l
PA	31105	4.70	5.04	3.21	12.39	56.1	31.7	11.0	3125.39
RI	85	1.50	1.90	3.11	4.95	21.2	12.9	2.4	153.18
SC	31	.96	1.07	2.41	1.59	9.7	.0	.0	5.96
SD	601	2.29	2.62	3.09	6.70	28.5	13.1	6.0	128.74
TN	805	2.19	2.38	2.68	4.15	29.9	11.4	1.9	164.80
TX	529	.63	.64	2.28	.98	2.3	.9	.0	19.30
UT	38	2.23	2.30	2.86	3.93	26.3	13.2	5.3	21.70
VT	120	1.43	1.62	2.91	2.88	20.0	8.3	.8	21.85
VA	2521	2.30	2.17	2.52	3.33	24.4	5.8	1.0	114.00
WA	12818	.60	.67	2.78	1.39	5.8	2.5	.6	144.30
WV	23	2.00	2.06	3.78	5.61	26.1	17.4	4.3	65.27
WI	352	2.30	2.11	2.93	3.60	28.1	10.2	1.4	56.30
WY	193	3.11	3.51	4.23	9.72	42.5	29.5	14.0	111.50
MID_ATL	52159	3.10	3.24	3.59	9.05	42.0	22.6	7.7	3125.39
MIDWEST	6371	2.30	2.40	2.75	4.72	28.7	10.4	2.5	396.90
NORWEST	20871	.70	.76	2.73	1.47	6.3	2.3	.5	187.70
MTN_STS	3260	2.85	2.97	2.93	6.21	36.1	16.9	4.7	691.31
SOU_EAST	3145	1.35	1.48	3.02	3.03	18.6	7.9	1.8	164.80
PAC_STS	1769	1.20	1.28	3.04	2.72	14.0	5.6	1.8	67.88
NEW_ENG	3304	1.70	1.81	2.98	4.10	21.3	8.5	2.5	1212.46
US_TOTAL	91046	2.00	2.12	3.76	6.38	30.5	15.5	5.0	3125.39

****

MID-ATLANTIC STATES--NY.PA,NJ,DE.MD.DC,VA.WV.EC combined.
MID WEST----MN,IA,MO,KS,WI,IL,IN.MI,OH,NB,SD,ND combined.
NORTH WEST--WA.OR.NW combined.
MOUNTAIN STATES--CO,NM,WY,UT,ID.MT combined.
SOUTH EAST--FL,GA,TN,MS,SC,NC,KY,LA,AL.AR,TX,OK combined.
PACIFIC STATES--CA,NV,AZ combined.
NEW ENGLAND--CT,MA,VT,NH,RI,ME combined.

(1) EPA ACTION GUIDELINE 0.02 WL or 4 pCi/l

(2) NCRP RECOMMENDED ACTION LEVEL 2 WLM/Y or 8-10 pCi/l

(3) MSHA OCCUPATIONAL LIMIT 4 WLM/Y or 20 pCi/l
"ALARA" PRINCIPLE ALSO APPLIES.

ATTACHMENT E

TEXAS WATER COMMISSION

Authorized Commercial Industrial Solid Waste Sites

Solid Waste Permits and Disposal Well Permits

27 The following list is for informational purposes only. This list does not contain facilities authorized by the Texas Department of Health or the Texas Railroad Commission.

Please note that specific permits may prohibit certain types of waste from being accepted at the facilities listed. Also, this list does not reflect the compliance status of any of the companies listed herein.

REVISED: June 1987

(Revised Annually)

TEXAS WATER COMMISSION
Field Operations Division Area Offices

DISTRICT 1
3918 Canyon Drive
Amarillo, Texas 79109-4996
806/353-9251 (TEX-AN 8-847-4264)
Mark Gates, District Manager

DISTRICT 2
5124-C 69th Street
Lubbock, Texas 79424-1602
806/794-4435 (TEX-AN 8-862-0047)
Larry L. Smith, District Manager

DISTRICT 3
3221 Franklin
Waco, Texas 76710-7302
817/753-3688 (TEX-AN 8-820-1462)
Joe Morgan, District Manager

DISTRICT 4
1019 N. Duncanville Rd.
Duncanville, Texas 75116-2201
214/298-6171 (TEX-AN 8-831-5650)
Charles D. Gill, District Manager

DISTRICT 5
2916 Teague Drive
Tyler, Texas 75701-3734
214/595-5466 (TEX-AN 8-214-595-5466)
John Witherspoon, District Manager

DISTRICT 6
P. O. Box 6328
4820 Ward Drive
Beaumont, Texas 77705-0328
409/842-9413
Harry Boudreaux, District Manager

DISTRICT 8
321 Center Street, Suite 1103
San Antonio, Texas 78202-2785
512/226-3297 or 226-3299
(TEX-AN 8-820-1308)
Bill Boggs, District Manager

DISTRICT 9
102 Canyon Road
San Angelo, Texas 76904
914/655-9479 (TEX-AN 8-915-655-9479)
Kenneth W. Krueger, District Manager

DISTRICT 10 - Odessa
2626 Parkway, Bldg. B, Suite 129
Odessa, Texas 79761
915/362-6997 (TEX-AN 8-844-9384)
William F. Lockey, District Manager

DISTRICT 10 - El Paso
1170 Westmoreland
El Rincon Bldg., Suite 241
El Paso, Texas 79925-5622
915/778-9634

DISTRICT 11
813 E. Pike Blvd.
Weslaco, Texas 78596-4935
512/968-3165 (TEX-AN 8-827-3398)
John Sturgis, District Manager

DISTRICT 12
Government Plaza Building, Suite 905
400 Mann Street
Corpus Christi, Texas 78401-2050
512/882-2548 (TEX-AN 8-827-6302)
Chip Volz, District Manager

SOUTHEAST REGION-HOUSTON OFFICE
15531 Kuykendahl, Suite 350
Houston, Texas 77090-3699
713/586-7780 (TEX-AN 8-850-1225)
Gerald E. Hord, Regional Manager

SOUTHEAST REGION-DEER PARK OFFICE
4301 Center Street
Deer Park, Texas 77536-6299
713/479-5981 (TEX-AN 8-850-1250)
Eddie Abshire, Office Manager

TWC-EPA LAB
6608 Hornwood Drive
Houston, Texas 77074-5093
713/954-6771 (TEX-AN 8-713-954-6771)
Terry Hills, Supervisor

DISTRICT 14
510 South Congress, Suite 306
Austin, Texas 78704-1739
512/463-7803 (TEX-AN 8-512-822-0148
W. John Young, District Manager

Authorized Commercial Waste Management Facilities

Permit No.	Company Name & Address	Waste Classification/ Primary Activity
TWC District 1		
50082	Huber Technology Group J. M. HUBER CORPORATION - P. O. Box 2831, Borger 79008 - Hutchinson County (806)274-6331 EPA I.D. - TXD 980874135	Class I Hazardous Waste/ Storage and Processing
TWC District 4		
50007	ASHLAND CHEMICAL COMPANY - Division of Ashland Oil, - 3101 Wood Drive, Garland 75041 - Dallas County (214)840-0206 EPA I.D. - TXD 980743895	Class I Hazardous Waste/ Storage & Transfer
50021	DETREX CHEMICAL INDUSTRIES, INC. - 322 International Parkway, Arlington 76011 - Tarrant County (817)640-6017 EPA I.D. - TXD 980627137	Class I Hazardous Waste/ Reclamation, Storage & Processing
39054	ELLIS COUNTY DISPOSAL - P.O. Box, 307, Ennis 75119 - Ellis County (214)875-6616	Class II Waste/Landfill
39055	EVERETT KATES, INC. - 2109 David Drive, Fort Worth 76111 - Tarrant County (817)838-6725	Class III Waste/Landfill
50029	HEAT ENERGY ADVANCED TECHNOLOGY, INC. WSR Division - 4460 Singleton Blvd., Dallas 75212 - Dallas County (214)637/6434 EPA I.D. - TXD 980624035	Class I Hazardous Waste/ Reclamation, Storage & Processing

Authorized Commercial Waste Management Facilities

Permit No.	Company Name & Address	Waste Classification/ Primary Activity
TWC District 5		
50203	ALPHA OMEGA RECYCLING, INC. - P. O. Box 9595, Longview 75608 - Gregg County EPA I.D. - TXD 981514383	Class I Hazardous Waste/ Storage and Processing (Recycling)
WDW-186	GIBRALTAR CHEMICAL RESOURCES, INC. - Box 248, Winona 75792 - Smith County (214)877-3227 EPA I.D. - TXD 000742304	Class I Hazardous Waste/ Disposal Well
TWC District 6		
39021	BROWNING-FERRIS INDUSTRIES CHEMICAL SERVICES, INC. - P.O. Box 1195, Nederland 77627 - Jefferson County (409)727-3156	Class II & III Waste/ Landfill
39012	CHEMICAL WASTE MANAGEMENT, INC. - P.O. Box 2563, Port Arthur 77640 - Jefferson County (409)736-2821 EPA I.D. - TXD 000838896	Class I Hazardous, Class I Non-hazardous Class II, III/Landfill
WDW-160	CHEMICAL WASTE MANAGEMENT, INC. - P.O. Box 2563, Port Arthur 77640 - Jefferson County (409)736-2821 EPA I.D. - TXD 000838896	Class I Hazardous Waste/ Disposal Well
39059	SOUTHERN STATES SPECIALTY, INC. - 209 S. Bolivar, San Augustine 75972 - San Augustine County (409)275-2363	Class I Waste/Transfer Station Contaminated PCB Waste and Associated Electrical Component Materials

Authorized Commercial Waste Management Facilities

Permit No.	Company Name & Address	Waste Classification/ Primary Activity
50030	PAKTANK CORPORATION - 2000 W. Loop S., Suite 1800, Houston 77027 - Harris County (713)623-0000 EPA I.D. - TXD 000807982	Class I Hazardous Waste/ Storage & Processing
01429	ROLLINS ENVIRONMENTAL SERVICES (TX) INC. - P.O. Box 609, Deer Park 77536 - Harris County (713)479-6001 EPA I.D. - TXD 055141378	Class I Hazardous Waste/ Landfill, Incineration
TWC District 9		
39046	SAN ANGELO ELECTRIC SERVICE CO. - P. O. Box 1587, San Angelo 76902 - Tom Green County (915)653-2336	Class I/Storage and Processing
TWC District 10		
WDW-146	CECOS INTERNATIONAL, INC. Chapparral Disposal Site - P.O. Box 6509, Odessa 79762 - Ector County (915)333-2826	Class I Hazardous Waste/ Disposal Well
TWC District 12		
50023 WDW-70	CHEMICAL WASTE MANAGEMENT, INC. - P.O. Box 9295, Corpus Christi 78408 - Nueces County (512)852-8284 EPA I.D. - TXD 000761254	Class I Hazardous Waste/ Disposal Well
50059	SDC SERVICES, INC. - P. O. Box 7142 Corpus Christi 78415 - Nueces County (512)855-4351 EPA I.D. - TXD 030923361	Class I Hazardous Waste/ Storage and Processing

Authorized Commercial Waste Management Facilities

Permit No.	Company Name & Address	Waste Classification/ Primary Activity
39014	FORCE ROAD OIL & VACUUM TRUCK CO. - P.O. Box 9484, Houston 77011 - Harris County (713)928-2737 EPA I.D. - TXD 000633453	Class I/ Storage & Processing
50092	GLOBAL FUEL, INC. - 2505 Collingsworth, Suite 200 - Houston 77026 - Harris County (713)227-0696 EPA I.D. - TXD 093565653	Class I Hazardous Waste/ Storage and Processing
	Southeast Region IV (Formerly TWC District 7)	
39036	GULF COAST WASTE DISPOSAL - 910 Bay Area Blvd., Houston 77058 - Harris County (713)472-5507 EPA I.D. - TXD 000835249	Class I/Landfill
39017	LIBERTY WASTE DISPOSAL CO - P. O. Box 3370, Baytown 77520 - Chambers County (713)424-5505	Class II & III/Landfill
39018	R. B. LITTLE, INC. - P. O. Box 36230, Houston 77036 - Harris County	Class III/Landfill
50003 WDW-73 WDW-138	MALONE SERVICE COMPANY - P.O. Box 709, Texas City 77590 - Galveston County (409)945-3301 EPA I.D. - TXD 027147115	Class I Hazardous Waste/ Reclamation, Storage & Processing, Disposal Well
39019	JAMES C. McDONALD - 10822 Stabler Lane, Houston 77076 Harris County (713)695-0812	Class II/Landfill

LETTER 1318 (CONTINUED)

Authorized Commercial Waste Management Facilities

Permit No.	Company Name & Address	Waste Classification/ Primary Activity
	Southeast Region IV (Formerly TWC District 7)	
39056	Brazoria Equipment Co., INC. dba/ COASTAL EQUIPMENT CO. - P. O. Box 2417, Texas City 77590 - Galveston County (713)482-8321	Class II & III Waste/ Landfill
50026	CALGON CORPORATION - 9640 Bayport Blvd. - Pasadena 77507 - Harris County (713)474-4401 EPA I.D. - TXD 036476850	Class I Hazardous Waste/ Storage
50095	STAUFFER CHEMICAL COMPANY - P. O. Box 5275, Houston 77262 - Harris County EPA I.D. - TXD 008099079	Class I Hazardous Waste/ Storage and Processing
WDW-169	DISPOSAL SYSTEMS, INC. - Box 1505, Houston 77001 - Harris County (713)974-5000 EPA I.D. - TXD 000719518	Class I Hazardous Waste/ Disposal Well
39028	ELTEX CHEMICAL & SUPPLY CO. - P.O. Box 4214, Houston 77210 - Harris County (713)795-5607 EPA I.D. - TXD 074196338	Class I Hazardous Waste/ Reclamation, Transfer Station
WDW-197	EMPAK, INC. - 2000 W. Loop S., Suite 1800, Houston 77027 - Harris County (713)623-0000	Class I Hazardous Waste/ Disposal Well
39040	FORCE, INC. - P.O. Box 9484, Houston 77011 - Harris County (713)928-2737 EPA I.D. - TXD 074165996	Class I, II, III/ Storage & Processing

Authorized Commercial Waste Management Facilities

Permit No.	Company Name & Address	Waste Classification/ Primary Activity
39023	TEXAS ECOLOGISTS, INC. - P.O. Box 307, Robstown 78380 - Nueces County (800)242-3209 (512)387-3518 EPA I.D. - TXD 069452340	Class I Hazardous Waste/ Landfill

SPECIALIZED HANDLING/RECEIVING

TWC District 4

* 39035	BELL [illegible]ING, INC. - P.O. Box [illegible]504, Wichita Falls 76307 - Wichita County (817)322-8621	Class III Waste/Landfill

*** FIBERGLASS ONLY ***

39061	EFFLUENT TREATMENT SERVICES - 6401 Bradley Space P Haltom City 76117 - Tarrant County (817)429-4039	Class I Non-hazardous Waste/Storage, Processing, Transfer

*** RECEIVES OILS, OILY WASTEWATER ONLY ***

Southeast Region IV (Formerly TWC District 7)

50088	EXPLOSIVE CONTROL, INC. - 3410 Mt. Vernon Street - Houston 77006 - Harris County	Class I Hazardous Waste/Storage and Processing

*** RECEIVES WASTE EXPLOSIVES ONLY ***

WDW-147	MERICHEM COMPANY - 1914 Haden Road, Houston 77015 - Harris County (713)455-1311	Class I Hazardous Waste/ Disposal Well

*** RECEIVES REFINERY WASTE CAUSTIC ONLY ***

Authorized Commercial Waste Management Facilities

Permit No.	Company Name & Address	Waste Classification/ Primary Activity
39063	GENERAL ELECTRIC COMPANY - Houston Service Shop - 6800 Wallisville Road - Houston 77029 - Harris County (713)672-3541	Class I Non-hazardous Waste/Storage and Processing

*** RECEIVES CONTAMINATED PCB WASTE ONLY ***

TWC District 11

Permit No.	Company Name & Address	Waste Classification/ Primary Activity
39010	CRASTAIN, R.E. - Box 2257, McAllen 78501 - Hidalgo (512)687-7035	Class II/Landfill

*** RECEIVES VEGETABLES ONLY: SEASONAL ***

TABLE 2.3.-2. FISH SPECIES NORMALLY OCCURRING IN THE DALLAS-FORT WORTH PROJECT AREA[1]

Species	Scientific Name	Habitat	Habitat Availability Onsite[2]
O. Semionotiformes			
F. Lepisosteidae			
*Spotted Gar	Lepisosteus oculatus	Quite clean water with dense aquatic vegetation	Limited to moderate
*Longnose Gar	Lepisosteus osseus	Medium to large streams	Minimal
O. Clupeiformes			
F. Clupeidae			
*Gizzard Shad	Dorosma cepedianum	Reservoirs, ponds, pools, and low gradient backwaters	Ample
*Threadfin Shad	Dorosoma petenense	Reservoirs and large creeks	Ample
O. Cypriniformes			
F. Cyprinidae			
*Goldfish	Carassius auritus	Reservoirs	Ample
*Common Carp	Cyprinus carpio	Streams, reservoirs, and ponds	Ample
Pugnose Minnow	Opsopoedus emiliae	Clean slow moving waters often with emergent herbaceous vegetation	Limited
*Golden Shiner	Notemigonus crysoleucas	Vegetated, shallow ponds and reservoirs and sluggish streams	Ample
*Red Shiner	Notropis lutrensis	Low gradient back-waters, creeks and streams with sand/silt bottoms	Ample
*Blacktail Shiner	Notropis venustus	Moderately large clear to turbid streams with gravel and rubble bottoms	Limited
Mimic Shiner	Notropis volucellus	Clean to turbid rivers and streams near riffles	Limited to minimal
Ghost Shiner	Notropis buchanani	Pools in large creeks and rivers, relatively clear to turbid waters, and low flow backwaters	Moderate to limited
*Bullhead Minnow	Pimephales vigilax	Sluggish pools and backwaters of streams	Ample
Central Stoneroller	Campostoma anomalum	Clear, cool streams with moderate to rapid current and gravel to rubble bottoms in pools or riffles	Moderate to limited

(continued)

TABLE 2.3-8. (continued)

Species	Scientific Name	Habitat	Habitat Availability Onsite[2]
F. Catostomidae			
*Smallmouth Buffalo	Ictiobus bubalus	Clear water with moderate current	Moderate
*River Carpsucker	Carpiodes carpio	Quiet, silt-bottomed pools of rivers with low to moderate gradient; impoundments	Ample
O. Siluriformes			
F. Ictaluridae			
*Channel Catfish	Ictalurus punctatus	Clear medium to large fast rivers over sand or gravel/rocky bottoms	Ample
*Blue Catfish	Ictalurus furcatus	Reservoirs	Ample
*Black Bullhead	Ictalurus melas	Ponds, reservoirs, and pools in streams	Ample
*Yellow Bullhead	Ictalurus natalis	Shallow vegetated bays of reservoirs; ponds and slow moving streams	Ample
*Flathead Catfish	Pylodictis olivaris	Deep holds of medium to large rivers and reservoirs	Moderate
*Tadpole Madtom	Noturus gyrinus	Quiet water over soft bottoms with dense vegetation	Limited
O. Atheriniformes			
F. Cyprinodontidae			
*Blackstripe Topminnow	Zygonectes notatus	Variable sized lowland streams, slow moderate to high turbidity	Moderate
F. Poeciliidae			
*Mosquitofish	Gambusia affinis	Vegetated ponds, reservoirs, ditches, and backwaters of streams	Ample
F. Atherinidae			
*Inland Silverside	Menidia beryllina	Streams over sand and gravel bottom pools or riffles	Moderate
O. Perciformes			
F. Percichthyidae			
*White Bass	Morone chrysops	Clear reservoirs and rivers	Moderate
*Striped Bass	Morone saxatilis	Reservoirs	Moderate

(continued)

TABLE 2.3-2. (continued)

Species	Scientific Name	Habitat	Habitat Availability Onsite[2]
F. Centrarchidae			
Spotted Bass	Micropterus punctulatus	Small rivers and streams, and reservoirs	Moderate
*Largemouth Bass	Micropterus salmoides	Quick clean waters with ample aquatic vegetation	Ample
*Warmouth	Lepomis gulosus	Ponds and lakes	Ample
Spotted Sunfish	Lepomis punctatus	Slow to moderately flowing waters with dense cover and vegetation	Moderate
*Green Sunfish	Lepomis cyanellus	Tolerant of most aquatic hbitats	Ample
*Longear Sunfish	Lepomis megalotis	Reservoirs and small streams	Ample
*Redear Sunfish	Lepomis microlophus	Warm clean quiet waters with vegetation cover	Moderate
*Bluegill	Lepomis macrochirus	Shallow warm lakes, ponds, slow flowing streams with vegetation	Ample
*Orangespotted Sunfish	Lepomis humilis	Quiet streams, vegetated lakes and ponds	Ample
Redbreast Sunfish	Lepomis auritus	Lakes and rivers	Moderate
*White Crappie	Pomoxis annularis	Streams, lakes, ponds, slow moving reaches of large rivers	Ample
F. Percidae			
Dusky Darter	Percina sciera	Large streams and rivers over gravel/sand raceways	Moderate to limited
*Bigscale Logperch	Percina macrolepida	Gravel raceways of moderate to swift currents of streams; reservoirs	Moderte to limited
Orangethroat Darter	Etheostoma spectabile	Small turbid streams with silted bottoms	Moderate to limited
F. Sciaenidae			
*Freshwater Drum	Aplodinotus grunniens	Large silty lakes and rivers	Limited

[1] Sources: 1. Hubbs, 1982. 2. Lee, et al., 1980 et seq.
[2] Within the Collider Ring
- Ample - Habitat available over most of the site area
- Moderate - Habitat available over less than one half of the site area, but more than 10% of the site area
- Limited - Habitat available less than approximately 10% of the site area
- Minimal - Habitat coverage very small and of marginal quality

*Species collected via seining, electrofishing, gill netting, frame netting, and cove rotenoneing (Texas Parks and Wildlife Dept. reports; Bonn 1965, 1966; Sellers 1980; and Inman 1987).

TABLE 2.3-3. AMPHIBIANS SPECIES NORMALLY OCCURRING IN THE DALLAS-FORT WORTH PROJECT AREA[1]

Species	Scientific Name	Habitat	Habitat Availability Onsite[2]
O. Caudata			
F. Salamandridae			
Lesser Siren	Siren intermedia	Warm, shallow, quiet waters: sloughs, weedy ponds	Ample
Eastern Newt	Notophthalmus viridescens	Ponds, lakes, back waters, streams with dense submerged vegetation	Limited
*Small-mouthed Salamander	Ambystoma texanum	Deciduous forest bottomlands; tall-grass prairies and farming areas near water	Limited
Tiger Salamander	Ambystoma tigrium	Variety of moist habitat types from arid plains to wet meadows	Ample
F. Pelobatidae			
*Couch's Spadefoot	Scaphiopus couchi	Tolerant of dry terrain: shortgrass prairie and mesquite savannah	Ample
Eastern Spadefoot	Scaphiopus holbrooki	Forested, brushy, or farmed areas with loose or soft soils	Ample
F. Ranidae			
*Crawfish Frog	Rana areolata	Wet meadows, prairie woodlands	Limited
*Bullfrog	Rana catesbeiana	Aquatic: still waters	Ample
Green Frog	Rana clamitans	Near still or slow moving water, swamps amid fallen litter	Ample to moderate
*Rio Grande Leopard Frog	Rana berlandieri	Any aquatic or moist conditions, natural or artificial	Ample
*Southern Leopard Frog	Rana sphenocephala	Wet areas amid moist vegetation in summer, aquatic habitats in other seasons	Ample

(continued)

LETTER 1318 (CONTINUED)

TABLE 2.3-3. (continued)

Species	Scientific Name	Habitat	Habitat Availability Onsite[2]
F. Microhylidae			
Eastern Narrow-Mouthed Frog	Gastrophryne carolinensis	Near water, ponds, ditches amid litter	Ample
Great Plains Narrow-Mouthed Frog	Gastrophryne olivacea	Woodlands and grasslands; moist litter and rodent burrows	Ample
F. Bufonidae			
Green Toad	Bufo debilis	Prairies	Ample
Red-spotted Toad	Bufo punctatus	Prairies near permanent water or dampness, natural or man-made	Ample
Texas Toad	Bufo speciosus	Prairie grasslands and open woodlands; adapted to dry conditions	Ample
*Gulf Coast Toad	Bufo valliceps	Variety of moist habitats	Ample
*Woodhouse's Toad	Bufo woodhousei	Variety of moist habitats	Ample
F. Hylidae			
*Northern Cricket Frog	Acris crepitans	Open shallow water with vegetation cover; ditches	Ample
*Gray Treefrog	Hyla chrysoscelis/ Hyla versicolor	Trees and shrubs growing in or near permanent water	Moderate to limited
*Green Treefrog	Hyla cinerea	Vegetation near permanent water	Moderate
*Spotted Chorus Frog	Pseudacris clarki	Short-grass prairie	Moderate
*Strecker's Chorus Frog	Pseudacris streckeri	Variety of moist habitats	Ample
*Upland Chorus Frog	Pseudacris triseriata	Grassy areas from dry to swampy to agricultural; also woodlands	Ample

[1]Sources: 1. Behler and King, 1979 2. Dixon, 1987
[2]Within the Collider Ring
Ample - Habitat available over most of the site area
Moderate - Habitat available over less than one half of the site area, but more than 10% of the site area
Limited - Habitat available less than approximately 10% of the site area
Minimal - Habitat coverage very small and of marginal quality
*Literature records (collected) from Ellis County (in vicinity of project).

TABLE 2.3-4. REPTILE SPECIES NORMALLY OCCURRING IN THE DALLAS-FORT WORTH PROJECT AREA

Species	Scientific Name	Habitat	Habitat Availability Onsite[2]
O. Crocodylia			
*American Alligator	Alligator mississippiensis	Variety of aquatic and wetland habitats	Limited
O. Testudines			
F. Chelydridae			
*Common Snapping Turtle	Chelydra serpentina	Soft bottom aquatic habitats with dense vegetation	Ample
F. Kinosternidae			
*Yellow Mud Turtle	Kinosternon flavescens	Quieter slow-moving bodies of water with sand or mud bottoms	Moderate
*Mud Turtle	Kinosternon subrubrum	Shallow, soft-bottom quiet water with dense vegetation	Moderate to limited
Razor-backed Musk Turtle	Sternotherus carinatus	Swamps; slow-moving water courses with dense vegetation	Moderate to limited
Stinkpot	Sternotherus odoratus	Quiet shallow muddy-bottom waters	Ample
F. Emydidae			
Chicken Turtle	Deirochelys reticularia	Shallow ponds and ditches with dense vegetation	Limited
River Cooter	Chrysemys concinna	Streams with moderate currents; large reservoirs	Limited streams; two reservoirs
*Pond Slider	Trachemys scripta	Slow, shallow streams, ponds, and reservoirs with soft bottoms and dense vegetation	Moderate
*Mississippi Map Turtle	Graptemys kohni	Streams, reservoirs, and sloughs with mud bottoms, dense vegetation, and basking sites	Moderate
*Eastern Box Turtle	Terrapene carolina	Moist upland habitats, floodplains	Moderate
*Western Box Turtle	Terrapene ornata	Open prairies, pasturelands, open woodlands, and waterways in arid, sandy-soiled terrain	Ample

(continued)

IIA.1-2940

LETTER 1318 (CONTINUED)

LETTER 1318 (CONTINUED)

TABLE 2.3-4. (continued)

Species	Scientific Name	Habitat	Habitat Availability Onsite[2]
F. Trionychidae			
Smooth Softshell	Trionyx muticus	Large streams, moderate to fast currents, sand or mud bottoms	Limited
Spiny Softshell	Trionyx spiniferus	Small marshy creeks, farm ponds, fast-flowing streams and reservoirs	Ample
O. Squamata			
F. Iguanidae			
Green Anole	Anolis carolinensis	Arboreal; trees, fence posts, walls, woody vegetation, and vines	Ample
Greater Earless Lizard	Cophosaurus texanus	Stretches of rocks, limestone cliffs, dry sandy stream beds, washes	Limited to minimal
Collared Lizard	Crotaphytus collaris	Hardwood forests to arid areas with large rocks for basking; usually hilly regions	Minimal
*Lesser Earless Lizard	Holbrookia maculata	Sandy soil in grassy prairie, cultivated fields, dry stream beds; desert grasslands	Moderate
*Texas Horned Lizard	Phrynosoma cornutum	Dry areas, open lands with loose soil and grasses, mesquite	Ample
*Texas Spiny Lizard	Sceloporus olivaceus	Arboreal; mesquite, live oaks, other trees, buildings	Moderate
Eastern Fence Lizard	Sceloporus undulatus	Open upland woodlands; dry prairies near fallen logs and stumps	Ample
F. Anguidae			
Slender Glass Lizard	Ophisaurus attenuatus	Dry grasslands and dry open woods	Moderate

(continued)

IIA.1- 2949

TABLE 2.3-4. (continued)

Species	Scientific Name	Habitat	Habitat Availability Onsite[2]
F. Teiidae			
*Texas Spotted Whiptail	Cnemidophorus gularis	Semi-arid prairie grassland, open brushy areas, washes	Limited
*Racerunner	Cnemidophorus sexlineatus	Dry sunny areas, open grasslands, open woods, well-drained soils	Ample
F. Scincidae			
*Five-lined Skink	Eumeces fasciatus	Moist woods with litter, stumps, and fallen logs	Moderate
*Broad-headed Skink	Eumeces laticeps	Moist woods; open areas with litter and rubble cover	Moderate to limited
*Prairie Skink	Eumeces septentrionalis	Moist areas with vegetation and loose soil; rocky or gravelly washes	Moderate
*Ground Skink	Scinella lateralis	Moist woods and wooded grasslands with abundant leaf litter	Ample
F. Leptotyphlopidae			
Blind Snake	Leptotyphlops dulcis	Subterranean, beneath leaf and plant litter or under decaying logs	Moderate
F. Colubridae			
*Racer	Coluber constrictor	Old fields; woods-field interface; abandoned buildings	Ample
Ringneck Snake	Diadophis punctatus	Damp meadows and woodland; overgrown fields near water; litter-filled bottoms and gullies	Ample
Corn Snake	Elaphe guttata	Wide variety of habitat types	Ample
*Rat Snake	Elaphe obsoleta	Wide variety of habitat types	Ample

(continued)

LETTER 1318 (CONTINUED)

TABLE 2.3-4. (continued)

Species	Scientific Name	Habitat	Habitat Availability Onsite[2]
*Eastern Hognose Snake	Heterodon platyrhinos	Open deadwoods or pine woodlands; forest-grasslands near streams or ponds	Moderate to limited
Western Hognose Snake	Heterodon nasicus	Sandy shortgrass prairie; rocky semi-desert, pasture and woodland interface	Limited
Night Snake	Hypsiglena torquata	Sandy or gravelly ground broken by rocky bluffs or overlaid by flat stones and litter	Limited to minimal
*Prairie Kingsnake	Lampropeltis calligaster	Grasslands; less frequently riparian woodlands	Ample
*Common Kingsnake	Lampropeltis getulus	Beneath litter, debris; damp grassy pastures	Moderate
Milk Snake	Lampropeltis triangulum	Wooded riparian lands; rolling hillsides in short or tall grass prairie with loose soil and rocks	Limited
*Coachwhip	Masticophis flagellum	Drylands	Ample
*Plain-bellied Water Snake	Nerodia erythrogaster	Aquatic habitats	Ample
Southern Water Snake	Nerodia fasciata	Calm permanent bodies of water	Ample
*Diamondback Water Snake	Nerodia rhombifera	Aquatic habitats	Ample
*Rough Green Snake	Opheodrys aestivus	Arboreal; leafy trees and shrubs; edges of woods and open areas	Ample
*Pine-Gopher Snake	Pituophis melanoleucus	Open terrain	Ample
Graham's Crayfish Snake	Regina grahamii	Streams, ponds, and ditches	Ample
Ground Snake	Sonora semiannulata	Well-vegetated habitats; debris piles	Ample

(continued)

TABLE 2.3-4. (continued)

Species	Scientific Name	Habitat	Habitat Availability Onsite[2]
*Brown Snake	Storeria dekayi	Moist soils beneath litter, logs, rocks; riparian bottomland of hill country and oak or juniper brakes	Moderate to limited
*Flat-headed Snake	Tantilla gracilis	Loose, slightly damp soil; most often in moist deciduous woods and grassland/brushland communities	Moderate
Checkered Garter Snake	Thamnophis marcianus	Arid and semi-arid grasslands near water	Ample
*Western Ribbon Snake	Thamnophis proximus	Pond, creek margins	Ample
*Common Garter Snake	Thamnophis sirtalis	Wet meadows and pastures; riparian areas	Ample
*Rough Earth Snake	Virginia striatula	Beneath debris around abandoned farms	Ample
Smooth Earth Snake	Virginia valeriae	Beneath rocks, logs on open wooded hillsides	Moderate to limited
*Lined Snake	Tropidoclonion lineatum	Grasslands; pasture/woodland interface	Ample
F. Elapidae			
*Coral Snake	Micrurus fulvius	Dry oak/juniper brakes with rock or litter cover	Minimal
F. Viperidae			
*Copperhead	Agkistrodon contortrix	Mesic upland woods or bottomlands with litter cover	Moderate
*Cottonmouth	Agkistrodon piscivorus	Variety of habitat types near water	Ample
Western Diamond-back Rattlesnake	Crotalus atrox	Variety of habitat types near water	Ample
*Timber Rattlesnake	Crotalus horridus	Dense thickets; woods; second growth pastures	Moderate to limited
Western Massasauga	Sistrurus catentatus	Grasslands	Ample
Pigmy Rattlesnake	Sistrurus miliarius	Riparian woods with litter and shrub layers	Minimal

[1] Sources: 1. Behler and King, 1979. 2. Dixon, 1987 3. Tennant, 1985.
[2] Within the Collider Ring
Ample - Habitat available over most of the site area
Moderate - Habitat available over less than one half of the site area, but more than 10% of the site area
Limited - Habitat available less than approximately 10% of the site area
Minimal - Habitat coverage very small and of marginal quality
*Literature records (collected) from Ellis County (in vicinity of project).

LETTER 1318 (CONTINUED)

TABLE 2.3.-5. BIRD SPECIES NORMALLY OCCURRING IN THE DALLAS-FORT WORTH PROJECT AREA[1]

Species	Status[2]	Habitat	Habitat Availability Onsite[3]
O. Podicipediformes			
F. Podicipedidae			
* Pied-billed Grebe	S,W	Marshes, ponds, and reservoirs	Ample
Eared Grebe	W	Marshes and ponds	Ample
O. Pelicaniformes			
F. Phalacrocoracidae			
**Double-Crested Cormorant	W	Reservoirs	Ample
O. Ciconiiformes			
F. Ardeidae			
**American Bittern	W	Marshes	Limited
Least Bittern	S	Marshes	Limited
*Great Blue Heron	S,W	Ponds, marshes, reservoirs; nests in trees in or water	Limited nesting; ample feeding
**Green-backed Heron	S	Reservoirs, ponds, streamsides	Ample
*Great Egret	S,W	Ponds, marshes, reservoir edges; nests in shrub stands in water, on islands with shrubs and trees, and upland woodlands	Limited nesting; ample feeding
*Snowy Egret	S	Ponds, marshes; nests in shrubs in water or island shrubs, and trees, and upland woodlands	Limited nesting; ample feeding
*Little Blue Heron	S	Ponds, marshes; nest in shrubs in water, on islands with shrubs and trees, and upland woodlands	Limited nesting; ample feeding
*Cattle Egret	S	Pastures, roadsides, open fields; nests in shrub stands in water, on islands with trees and shrubs, and upland woodlands	Limited nesting; ample feeding
**Yellow-crowned Night-Heron	S	Freshwater habitat types; nests in trees and shrubs in water and upland woodlands	Limited nesting; ample feeding
**Black-crowned Night-Heron	S	Freshwater habitat types; nests in trees and shrubs in water and upland woodlands	Limited nesting; ample feeding

(continued)

TABLE 2.3-5. (continued)

Species	Status[2]	Habitat	Habitat Availability Onsite[3]
O. Anseriformes			
F. Anatidae			
*Canada Goose	W	Fields, short grasslands, grain fields	Ample
**White-fronted Goose	W	Fields, short grasslands, grain fields	Ample
**Snow/Blue Goose	W	Fields, short grasslands, grain fields	Ample
**Green-winged Teal	W	Ponds, marshes and reservoirs	Ample
**Blue-winged Teal			
**Mallard	W	Grain fields, ponds, marshes, and reservoirs	Ample
*Northern Pintail	W	Shallow reservoirs, ponds, and marshes	Ample
**Northern Shoveler	W	Shallow water	Moderate
**Gadwall	W	Ponds and reservoirs	Ample
*American Wigeon	W	Ponds and marshes	Ample
**Canvasback	W	Large reservoirs	Two
**Redhead	W	Shallow reservoirs	Ample
**Ring-necked Duck	W	Wooded ponds, reservoirs; flooded bottomlands	Ample
*Lesser Scaup	W	Ponds and reservoirs	Ample
**Common Goldeneye	W	Reservoirs	Ample
**Bufflehead	W	Reservoirs	Ample
**Ruddy Duck	W	Marshy reservoirs	Ample
**Hooded Merganser	W	Wooded ponds, reservoirs; flooded bottomlands	Ample
O. Falconiformes			
F. Cathartidae			
*Black Vulture	S,W	Open habitat type	Ample
**Turkey Vulture	S,W	Open habitat type	Ample
F. Accipitridae			
**Osprey	S,W	Reservoirs, rivers, and marshes	Ample to moderate
**Norther Harrier	W	Open fields and marshes	Ample
Sharp-shinned Hawk	W	Wood and shrublands	Limited

(continued)

TABLE 2.3-5. (continued)

Species	Status[2]	Habitat	Habitat Availability Onsite[3]
**Cooper's Hawk	W	Woodlands	Limited
**Red-shouldered Hawk	S,W	Moist deciduous woods, usually mature	Limited
**Broad-winged Hawk	W	Large stands of mixed deciduous woods	Limited to minimal
Swainson's Hawk	W	Open plains; nests in trees and shrubs along water courses, wetlands, and hedgerows	Ample
**Red-tailed Hawk	S,W	Open fields and open woods	Ample
**Bald Eagle	W	Reservoirs	Ample
F. Falconidae			
*American Kestrel	W	Variety of habitat types	Ample
O. Galliformes			
F. Phasianidae			
***Ring-necked Pheasant	S,W	Agricultural land	Ample
*Wild Turkey	S,W	Open forests and forest edges	Limited
*Northern Bobwhite	S,W	Open forest, fields with scattered shrubs	Ample
O. Gruiformes			
F. Rallidae			
King Rail	S	Marshes	Moderate
**Sora	W	Marshes, wet meadows, margins of ponds and reservoirs	Moderate
**American Coot	W	Ponds and reservoirs	Ample
O. Charadriiformes			
F. Charadriidae			
*Killdeer	S,W	Fields, marshes, pastures, mudflats	Ample
F. Scolopacidae			
**Spotted Sandpiper	W	Edge of aquatic habitats	Ample
**Solitary Sandpiper	W	Streamsides and shores of ponds and reservoirs	Ample
**Least Sandpiper	W	Mud flats, shores of ponds and reservoirs	Ample
**Common Snipe	W	Marshes and fields	Ample

(continued)

TABLE 2.3-5. (continued)

Species	Status[2]	Habitat	Habitat Availability Onsite[3]
F. Laridae			
**Ring-billed Gull	W	Ponds, wet fields, reservoirs, and marshes	Ample
*Herring Gull	W	Reservoirs	Ample
O. Columbiformes			
F. Columbidae			
**Rock Dove	S,W	Urban and farm areas	Ample
*Mourning Dove	S,W	Upland open and semi-open habitats	Ample
O. Cuculiformes			
F. Cuculidae			
*Yellow-billed Cuckoo	S	Woods, forest edges, and brushlands	Ample
*Greater Roadrunner	S,W	Open woodlands, grasslands, and farming areas	Ample
O. Strigiformes			
F. Tytonidae			
**Barn Owl	S,W	Prairie, farmland, and marshes	Ample
F. Strigidae			
*Eastern Screech-Owl	S,W	Open woods, floodplain woods, and farms	Ample
*Great Horned Owl	S,W	Variety of upland habitat types	Ample
**Burrowing Owl	S,W	Open grasslands and deserts	Moderate
**Barred Owl	S,W	Wooded swamps and forests	Moderate
**Long-eared Owl	W	Woodlands, thickets, and conifer trees	Moderate
**Short-eared Owl	W	Open habitats, grasslands, farm fields, and marshes	Ample
O. Caprimulgiformes			
F. Caprimulgidae			
*Common Nighthawk	S	Variety of habitat types	Ample
Chuck-will's-Widow	S	Forests, forest edges, and riparian woods	Ample

(continued)

2.3-27

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LETTER 1318 (CONTINUED)

TABLE 2.3-5. (continued)

Species	Status[2]	Habitat	Habitat Availability Onsite[3]
O. Apodiformes			
F. Apodidae			
*Chimney Swift	S	Buildings, and open woods	Ample
F. Trochilidae			
**Ruby-throated Hummingbird	S	Woods, parks, and gardens	Ample
**Black-chinned Hummingbird	S	Riparian woods, oaks of canyons and lowlands	Limited
F. Alcedinidae			
**Belted Kingfisher	W	Streams, and lakes with perches	Moderate
O. Piciformes			
F. Picidae			
*Red-bellied Woodpecker	S,W	Wooded areas	Moderate
Red-headed Woodpecker	S,W	Open woods, groves of trees on prairies	Limited
*Yellow-bellied Sapsucker	W	Wooded habitats	Ample
*Ladder-backed Woodpecker	S,W	Scrublands, riparian trees, and parks	Moderate
*Downy Woodpecker	S,W	Variety of wooded habitat types	Ample
*Hairy Woodpecker	S,W	Large trees in forest and woodlots	Moderate to limited
**Northern Flicker	W	Variety of wooded habitats	Ample
O. Passeriformes			
F. Tyrannidae			
*Eastern Wood-Pewee	S	Deciduous and mixed woods	Moderate
*Eastern Phoebe	S,W	Near running water, and ponds; in trees and at buildings	Ample
**Great Crested Flycatcher	S	Wooded surburban areas, clearings in forests, and small woodlots	Ample
.*Western Kingbird	S	Open habitats with perches	Ample
**Eastern Kingbird	S	Open habitats with perches	Ample
*Scissor-tailed Flycatcher	S	Open plains with perches	Ample

(continued)

TABLE 2.3-5. (continued)

Species	Status[2]	Habitat	Habitat Availability Onsite[3]
F. Alaudidae			
*Horned Lark	S,W	Open prairies, pasture, and fields	Ample
F. Hirundinidae			
*Purple Martin	S	Open habitat types, usually near water	Ample
Northern Rough-winged Swallow	S	Near stream banks, gravel pits, dams, bridges and road cuts	Limited
*Barn Swallow	S	Buildings and structures	Ample
F. Corvidae			
*Bluejay	S	Variety of habitat types, usually with brush or woodlands	Ample
*American Crow	S,W	Open and semi-open habitats	Ample
F. Paridae			
*Carolina Chickadee	S,W	Forests and forest edge	Ample
*Tufted Titmouse	S,W	Forest and woodlots	Ample
F. Sittidae			
Red-breasted Nuthatch	W	Forests, usually coniferous	Limited
**White-breasted Nuthatch	W	Bottomlands, woodlots, groves	Ample
F. Certhiidae			
*Brown Creeper	S,W	Woodlots and forests	Ample
F. Troglodytidae			
**Carolina Wren	S,W	Lower story forests and open woods	Ample
*Bewick's Wren	S,W	Brushy clearings, scrub woods, and suburban areas	Ample
*House Wren	S,W	Thickets, and forest edges	Moderate
·Winter Wren	W	Streams in woods, and floodplain woods	Moderate
Marsh Wren	S	Marshes and pond shores	Limited

(continued)

LETTER 1318 (CONTINUED)

TABLE 2.3-5. (continued)

Species	Status[2]	Habitat	Habitat Availability Onsite[3]
F. Muscicapidae			
**Golden-crowned Kinglet	W	Forests, forest edges, and coniferous stands	Moderate
*Ruby-crowned Kinglet	W	Open woods and shrub areas	Ample
Blue-gray Gnatcatcher	S,W	Brushy areas and woods	Moderate
*Eastern Bluebird	S,W	Open wooded areas and farmlands	Ample
*Hermit Thrush	W	Upland woods	Limited
*American Robin	S,W	Woods, open wooded areas, pastures, and fields	Ample
F. Mimidae			
*Northern Mockingbird	S,W	Open habitat with perches	Ample
Gray Catbird	S	Brushy habitats and edges of woods	Ample
**Brown Thrasher	W	Hedgerows and woodlots	Ample
F. Motachillidae			
Water Pipit	W	Shorelines and fields with little vegetation	Ample
Sprague's Pipit	W	Short grass prairie	Limited
F. Bombycillidae			
*Cedar Waxwing	W	Brushy and shrub habitats with berry-producing plants	Ample
F. Laniidae			
*Loggerhead Shrike	S,W	Open habitats with perches and thorn trees or barbed wire	Ample
F. Sturnidae			
**European Starling	S,W	Variety of habitat types	Ample
F. Vireonidae			
*Red-eyed Vireo	S	Mixed and deciduous forests	Moderate
*White-eyed Vireo	S	Edges of woods and tall shrubby areas	Ample
Bell's Vireo	S	Riparian woods and marshes with mesquite	Limited
*Black-capped Vireo	S	Low oak scrub of dry hillsides and ravines	Minimal
*Yellow-throated Vireo	S	Mixed and deciduous forests often in floodplains	Ample
*Solitary Vireo	W	Mixed forests and brushlands	Limited
Warbling Vireo	S	Deciduous and mixed woods	Ample

(continued)

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TABLE 2.3-5. (continued)

Species	Status[2]	Habitat	Habitat Availability Onsite[3]
F. Emberizidae			
*Orange-crowned Warbler	W	Variety of shrubs and wooded habitats	Ample
*Yellow-rumped Warbler	W	Varied woods and thickets	Ample
*Common Yellowthroat	S,W	Adjacent to water and shrub area with openings	Moderate
Black and White Warbler	S	Mixed forests	Limited
**Yellow-breasted Chat	S	Shrublands, forest edges, and thickets	Ample
*Summer Tanager	S	Forests	Limited
*Northern Cardinal	S,W	Brushy areas and woods	Ample
*Blue Grosbeak	S	Shrublands and hedgerows	Ample to moderate
*Indigo Bunting	S	Open woods, shrublands, and forest edges	Ample
*Painted bunting	S	Open woods and semi-open habitats	Moderate
**Dickcissel	S	Weeds and fields	Ample
*Rufous-sided Towhee	W	Forest edges and shrublands	Ample
Chipping Sparrow	W	Woodland, fields, and shrublands	Ample
**Field Sparrow	W	Fields	Ample
*Vesper Sparrow	W	Dry open fields with fruited vegetation	Ample
**Lark Sparrow	S,W	Open habitats with scattered trees and shrubs	Moderate
*Savannah Sparrow	W	Moist grasslands and marshes	Moderate
*Grasshopper Sparrow	S,W	Grasslands, hayfields, prairies	Ample
*Fox Sparrow	W	Undergrowth in wooded areas	Moderate
*Lincoln's Sparrow	W	Thickets, weedy areas, bushes	Ample
*Song Sparrow	W	Stream banks, brush piles, and wet meadows	Moderate
*White-throated Sparrow	W	Variety of habitat type	Ample
*White-crowned Sparrow	W	Shrublands	Moderate
**Harris Sparrow	W	Hedgerows and edges of woodlots	Ample
**Dark-eyed Junco	W	Variety of habitat types	Ample
*McCown's Longspur	W	Open fields with limited vegetation	Moderate

(continued)

TABLE 2.3-5. (continued)

Species	Status[2]	Habitat	Habitat Availability Onsite[3]
*Lapland Longspur	W	Fields and prairies	Ample
Smith's Longspur	W	Fields and prairies	Ample
Chestnut Collared Longspur	W	Grasslands	Ample
*Red-wing Blackbird	S,W	Marshes and wet fields	Moderate
*Eastern Meadowlark	S,W	Fields and grasslands	Ample
*Western Meadowlark	S,W	Fields and grasslands	Ample
Brewer's Blackbird	W	Open habitats with trees	Moderate
*Great-tailed Grackle	S,W	Open wooded areas and suburban areas	Ample
*Common Grackle	S,W	Croplands, fields, and woods	Ample
*Brown-headed Cowbird	S,W	Fields, pastures, and woods	Ample
*Orchard Oriole	S	Open woods	Moderate
**Purple Finch	W	Open woods	Moderate
*House Finch	S,W	Open woods	Moderate
*Pine Siskin	W	Variety of open habitat types	Ample
*American Goldfinch	W	Open fields, shrubby, often along streams	Moderate
*House Sparrow	S,W	Open fields, buildings, and pastures	Ample

[1]Sources: Ferrand, 1983; Nickols and Runnels, 1974; Oberholser, 1974; Peterson, 1963; TPWD, 1975; USFWS, 1987
[2]Transient Species not Included: S-Summer Inhabitant; W-Winter Inhabitant
[3]Within the Collider Ring
Ample - Habitat available over most of the site area
Moderate - Habitat available over less than one half of the site area, but more than 10% of the site area
Limited - Habitat available less than approximately 10% of the site area
Minimal - Habitat coverage very small and of marginal quality
*Literature records (collected) from Ellis County (in vicinity of project).
**Telfair, R. C. II, 1987, Environmental Assessment Biologist, Texas Parks and Wildlife Department, Personal Communication.
***Introduced species TPWD

LETTER 1318 (CONTINUED)

TABLE 2.3-6. MAMMAL SPECIES NORMALLY OCCURRING IN THE DALLAS-FORT WORTH PROJECT AREA

Species	Scientific Name	Habitat	Habitat Availability Onsite[2]
O. Marsupalia			
*Opossum	Didelphis virginiana	Deciduous woodlands and prairies, marshes, and farmlands	Ample
O. Insectivora			
Least Shrew	Cryptotis parva	Dense grasslands and areas of dense herbaceous ground cover	Ample
Eastern Mole	Scalopus aquaticus	Open fields, waste areas, loose soils	Minimal
O. Chiroptera			
Eastern Pipistrelle	Pipistrellus subflavus	Crevices, buildings, stumps, trees, culverts	Ample
Big Brown Bat	Eptesicus fuscus	Loose bark of dead trees and tree cavities, buildings	Ample
Hoary Bat	Lasiurus cinereus	Wooded areas	Moderate
**Red Bat	Lasiurus borealis	Wooded areas	Moderate
Brazilian Free-tailed Bat	Tadarida brasiliensis	Buildings	Ample
O. Edentata			
**Nine-banded Armadillo	Dasypus novemcinctus	Soft soils near water	Ample
O. Lagomorpha			
**Black-tailed Jack Rabbit	Lepus californicus	Pastures, haylands, cultivated areas	Ample
*Eastern Cottontail	Sylvilagus floridanus	Bush lands, fields	Ample
Swamp Rabbit	Sylvilagus aquaticus	Swamplands, bottomlands (edge of range)	Minimal
O. Rodentia			
**Thirteen-lined Ground Squirrel	Spermophilus tridecemlineatus	Short and tall grass prairies, pastures	Moderate
**Fox Squirrel	Sciurus niger	Open mixed forests	Moderate

(continued)

LETTER 1318 (CONTINUED)

TABLE 2.3-6. (continued)

Species	Scientific Name	Habitat	Habitat Availability Onsite[2]
**Southern Flying Squirrel	Glaucomys volans	Forest	Limited
Plains Pocket Gopher	Geomys bursarius	Sandy soils where topsoil is greater than 10 cm in depth	Minimal
Hispid Pocket Mouse	Perognathus hispidus	Sand and other soft soils with scattered to moderate vegetation stands	Ample
*Beaver	Castor canadensis	Aquatic habitat types	Moderate
*Fulvous Harvest Mouse	Reithrodontomys fulvescens	Grasslands with a few shrubs or creek bottoms	Ample
Plains Harvest Mouse	Reithrodontomys montanus	Mature grasslands which are well drained	Limited
Deer Mouse	Peromyscus leucopus	Wide variety of habitat types (edge of range)	Ample
White-footed Mouse	Peromyscus maniculatus	Forests, wooded creeks, and river bottoms	Moderate
*Hispid Cotton Rat	Sigmondon hispidus	Tall grass areas, old fields	Ample
**Eastern Woodrat	Neotoma floridana	Swamplands, forest lands, rocky areas	Limited
Pygmy Mouse	Baiomys taylori	Low grassy or weedy areas	Ample
Woodland Vole	Microtus pinetorum	Deciduous woods with dense herbaceous cover	Limited
*House Mouse	Mus musculus	Fields, buildings	Ample
*Black Rat	Rattus rattus	Buildings	Ample
**Norway Rat	Rattus norvegicus	Buildings, landfills, waste areas	Ample
*Nutria	Myocastor coypus	Swamps, marshes, ponds, reservoirs	Limited

(continued)

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LETTER 1318 (CONTINUED)

TABLE 2.3-6. (continued)

Species	Scientific Name	Habitat	Habitat Availability Onsite[2]
O. Carnivora			
*Coyote	*Canis latrans*	Wide variety of habitats	Ample
**Red Fox	*Vulpes vulpes*	Woodlands interspersed with farms and pastures	Limited
*Gray Fox	*Urocyon cinereoargenteus*	Mixed forests (uplands and bottomlands)	Limited
*Raccoon	*Procyon lotor*	Wide variety of habitat types often near water	Ample
*Ringtail	*Bassariscus astutus*	Wooded areas	Limited
Long-tailed Weasel	*Mustela frenata*	Variety of habitat types (edge of range)	Ample
*Mink	*Mustela vison*	Stream banks, lake, and marshes	Ample
*Eastern Spotted Skunk	*Spilogale putorius*	Wooded areas and tall-grass prairies	Moderate
*Striped Skunk	*Mephitis mephitis*	Wooded and brushy areas, and associated farmlands	Ample
*Bobcat	*Lynx rufus*	Wide variety of habitat types with preference for rocky areas and outcrops	Ample
O. Artiodactyla			
**White-tailed Deer	*Odocoileus virginianus*	Brush and woodlands with open areas	Minimal

[1]Sources: Whitaker, 1980. Davis, 1974. Schmidly, 1983.

[2]Within the Collider Ring

- Ample - Habitat available over most of the site area
- Moderate - Habitat available over less than one half of the site area, but more than 10% of the site area
- Limited - Habitat available less than approximately 10% of the site area
- Minimal - Habitat coverage very small and of marginal quality

*Specimens examined and/or trapper records in literature for Ellis County.

**Telfair, R. C. II, 1987, Environmental Assessment Biologist, Texas Parks and Wildlife Department, Personal Communication.

IIA1 2964

43

ATTACHMENT G

J Texas

1. Electricity
   a. <u>Service Assessment for Project Demands</u>

      1) Preconstruction

Preconstruction electrical utility impacts are expected to be short-term and negligible. Activities would include various geotechnical drilling and site monitoring operations. Limited electric power requirements for these activities probably would be met by portable power generators.

      2) Construction

Because of the large construction power requirements and the duration of construction, it is assumed that the SSC contractors would use utility power for construction work. This utility power can be brought on site by providing a pole line that could be removed when work is complete, or by early construction of permanent facilities to support construction work.

It is anticipated that construction power would be supplied to contractors at the site by tapping the existing 69-kV network of power lines located in the vicinity.

The pole lines constructed, whether temporary or permanent, would be routed along existing or newly acquired rights-of-way. Temporary substations could be built by the contractor to distribute medium-voltage power around the area on a temporary pole line to the tunnel boring machines (TBMs). Step-down transformers and a low-voltage distribution system would provide 480-V construction power from this aerial line.

Construction power for structures around the ring could be served either by portable on-site generators with routed power cord, or by placing temporary pole lines from nearby existing power lines to provide 48-V construction power. For either scenario the impact would be short-term and negligible.

      3) Operations

Electric power for the project would be supplied by Texas Utilities Electric Company (TU Electric), which plans to provide 345-kV service to Substations 1 and 2 via new and existing transmission lines. The two points of service chosen would provide power independently to each substation from separate grids.

TU Electric provides electric service to over 5 million people, about one-third of the state's population. The service territory extends 600 miles from far west Texas eastward to near Louisiana and 250 miles, from the Oklahoma border southward into Central Texas.

Service is provided in 87 counties to 361 incorporated cities, including Dallas, Fort Worth, Midland, Odessa, Wichita Falls, Arlington, Irving, Plano, Waco, Tyler and Killeen.

Texas proposes to provide 345-kV service to Substation 1 by constructing a new switching station and 345-kV transmission line from an existing 345-kV line. The new line would be approximately 3.1 miles long. Substation 2 would be serviced by constructing a new switching station and 345-kV transmission line. This would require construction of a new transmission line approximately 1.5 miles long.

Electric power distribution around the booster rings and collider tunnel would be accomplished by routing power cables either in conduit or duct banks around the circumference of the ring. Electric power would be distributed to the buildings by underground duct banks.

The TU Electric utility system currently has available capacity of 19,462 MW. Its current reserves are 2,774 MW, which is 224 MW above the 13% capacity margin minimum established by the Electric Reliability Council of Texas (ERCOT) for its member utilities. TU Electric is a member of ERCOT and is considered in ERCOT assessments of system capabilities and operations. ERCOT currently has 47,398 MW of capacity, of which 9,375 MW are reserves. In 1996, ERCOT estimates that there will be 9,333 MW of reserve capacity. This reserve capacity is backed up by the regional interties to neighboring utility systems.

In 1996, TU Electric estimates that it would have 825 MW of capacity reserves above the ERCOT 13% minimum. This would provide sufficient reserve capacity to meet the projected SSC load requirements without construction of any additional generating capacity.

The following table summaries the capacity, load and reserve characteristics of TU Electric in 1987 and 1996.

TEXAS UTILITIES ELECTRIC COMPANY RESERVE MARGINS
MW

	1987	1996
Dependable Capacity	19,462	25,504

Firm Peak Demand*	15,688	21,363
Capacity Margin	2,774	4,141
Capacity Above 13% Capacity Margin**	224	825

* Firm Peak Demand does not include interruptible loads

** Calculated based on ERCOT 13% minimum required capacity margin.

TU Electric plans electric generating capacity addition to maintain the minimum 13% capacity reserve level required by ERCOT utilities. Capacity additions would include an additional 6,000 MW to be put in place by 1996. This would increase the system total available capacity of approximately 25,500 MW.

TU Electric can meet the requirements of the SSC load during construction and during the first year of operations without impacting its latest resource plan. During the period 1987 through 1996 TU Electric capacity margins remain above the ERCOT minimum of 13% with the SSC included in its demand. No specific resource plan is provided beyond 1996, and it is likely that TU Electric generating plans would change with time. A possible change is the deferral of the retirement of 1,856 MW of capacity currently scheduled for retirement prior to 1995. Engineering studies have indicated that the life of this capacity may be extended, making it available to serve future loads such as the SSC.

b. Service Assessment for Population-Related Demands

TU Electric can also meet the demand growth in the SSC region caused by the influx of construction and operations workers and secondary commercial and industrial activities supporting the SSC during construction and the first year of operations. Secondary loads during construction reach a maximum of 23 MW by 1992, and a maximum of 18 MW by 2000 during operations. Table 14.2.2-7 shows the planned reserves with and without the SSC and secondary loads.

c. General Assessment

The capacity margins within the ERCOT region are expected to range from 19.8% in 1987 to 16.6% in 1996. Capacity purchases, principally from non-utility generators, are being used to supplement ERCOT capacity on both a short- and long-term basis. Projected capacity margins exceed the planning guidelines adopted by the region, thus planned capacity resources are expected to be adequate during the 1987-1996 period.

ERCOT systems project additions of approximately 14,722 MW of new and up-rated generating capacity during the decade 1987-1996. Retirements during that period are expected to be approximately 2,199 MW, resulting in net additions of some 12,523 MW.

Because transmission improvements within ERCOT have not proceeded as planned, a considerable increase in loading of existing transmission has occurred. Further increases are expected because of various forms of inter-utility and non-utility generation (NUG) wheeling.

The increasing utilization of transmission facilities for wheeling has been, and would continue to be, a significant reliability concern within ERCOT. During 1986 several instances occurred where economy transactions were interrupted because of insufficient transmission capacity.

The situation has been aggravated by the impediments that have occurred in construction and operation of needed transmission facilities. With greater utilization of the transmission grid being projected, future reliability within the ERCOT region cannot be expected to remain at current levels without the completion of planned transmission improvements.

Current forecasts indicate that up to 2,475 MW of the capacity within ERCOT by 1996 (approximately 10% of total) would be in the form of non-utility generation facilities. The long-term reliability of such facilities has yet to be established, and concern exists over issues such as their dependency on natural gas for fuel, unit dispatchability, wheeling, minimum load constraints, and long-term availability. The future impact of non-utility generation on the reliability of electric supply within ERCOT remains uncertain.

Several major nuclear projects represent the bulk of additional capacity expected to be completed with ERCOT during the next few years. These are South Texas 1 and 2 (1,250 MW each), and Comanche Peak 1 and 2 (1,150 ME each). Collectively, these four units represent 38% of the expected increase in ERCOT capacity during the next ten years. As is the case with many nuclear units, there is considerable technical, regulatory and political uncertainty associated with bring these units on line. Should unforeseen impediments occur, ERCOT could incur significant risk to the adequacy of its future electric supply.

The final location of the proposed SSC facility may require relocation of several transmission lines in the vicinity. This would require some rerouting of the lines to be relocated to maintain system continuity and customer service. Any impacts from this rerouting would be short-term and negligible.

LETTER 1318 (CONTINUED)

Table 14.2.2-7

TEXAS UTILITIES ELECTRIC COMPANY
RESERVE MARGINS WITH AND WITHOUT SSC

Year	Projected Firm Peak Demand MW	SSC Load MW	Secondary Load MW	Planned Resources MW	Capacity Margin w/o SSC MW	Capacity Margin w/SSC MW	Percent Capacity Margin* w/o SSC %	Percent Capacity Margin* w/SSC %
1987	16,688	0	0	19,452	2,774	2,774	14.3%	14.3%
1988	17,057	0	0	20,125	3,068	3,068	15.2%	15.2%
1989	17,504	1	3	20,623	3,110	3,115	15.1%	15.1%
1990	17,998	2	12	21,688	3,690	3,676	17.0%	16.9%
1991	18,500	4	22	22,448	3,939	3,913	17.5%	17.4%
1992	19,110	8	23	22,873	3,763	3,732	16.5%	16.3%
1993	19,710	16	21	23,531	3,821	3,784	16.2%	16.1%
1994	20,276	36	22	24,249	3,973	3,915	16.4%	16.1%
1995	20,854	36	18	24,904	4,050	3,996	16.3%	16.0%
1996	21,363	200	15	25,504	4,141	3,926	16.2%	15.4%

* Percent Capacity Margin = (Capacity Margin in MW)/(Planned Resources in MW)

IIA.1- 2969

Nick Jones
Weather Bureau
Communications Systems
1309 Halifax
Grand Prairie, TX 75050
metro #214-263-4070
* contact for current
consulting project--
Fort Worth Chamber of
Commerce 817-336-2491

Dr. Wilmot Hess, Chairman
SSC Site Task Force
ER-65/GTN
Office of Energy Research
U. S. Department of Energy
Washington, DC 20545

Attn: SSC DEIS Comments

In answer to the request for comments on the Draft Environmental Impact Statement we provide this information.

1 I was fortunate to be one of the first participants for the Waxahachie committee on geology and hydrology which developed the collider positioning. During that time a visit was made to the State Forecast Office for Texas that covers Northeast Texas. Interviews were held with hydrological staff and the State Director Mr. Skip Ely. These are the findings.

2 1) Flash Flooding should not be a problem, but does on occasion occur in the area just east of the collider ring position. River flooding cases are not a frequent or significant factor.

3 2) Many of the flash flooding episodes occur during nocturnal thunderstorm activity between midnight and 3 am. (this is true of many of the flash flooding situations that the NWS has studied)

4 3) A survey of the Station "Significant Weather Events" file was made. No studies of statically significant adverse weather were documented. This would suggest that the collider site in Texas is not in a high risk area for severe local storms.

Thursday, October 13, 1988
Page Two

5 My view as an expert in operational weather forecasting and severe local storms is that the Texas site is ideal for location of the Collider. Other sites may have similar or different severe local storm demographics which may need to be considered on a site by site basis. The Texas location has no major wind or rainstorm history that would suggest unique, adverse, or unusual environmental weather problems.

6 We would like to suggest a review of the enclosed letter from the Bureau of Standards, particularly paragraph 3. This suggests that it may be valuable at construction sites to have detailed weather information and forecasts.

7 In earlier meetings with the top staff of the National Weather Service we discussed prospects for saving 1/2 to 8 percent of the cost of major civil engineering projects by having intense and detailed weather information to flow to construction crews.

The objective would be to have a very accurate short, medium range and long range forecast (15 days). At no time was the prospect of cost savings by using leading edge computer technology (CRAY YMP or CRAY III) disputed. This project is called "The mesoscale project" and might provide some economies to what ever site is chosen. The need is discussed below:

About 10 percent of the weather data that flows from the research community gets to an operational meteorologist in the field. Another 10 percent is lost in relaying the forecast from the National Centers to field sites. Another 10 percent is lost in going from the field sites to the local TV weather man. Some markets do a good job in getting out the forecast others are probably below the 10 percent range.

This project needs close coordination between the local NWS and a dedicated team and network committed to providing scientists and engineers early advice about weather changes. These weather changes might not have an affect on conventional civil engineering project, but

LETTER 1319 (CONTINUED)

could have significant even devastating effect on the sensitive instrumentation of the collider.

Interested parties in the DOE are welcome to get in touch. Good luck in finding the best location and obtaining all the financial support necessary to begin construction ASAP.

Sincerely Yours,

Nick Jones

Nick Jones, President
WBOS

Enclosure

nj:NPJ

LETTER 1319 (CONTINUED)

UNITED STATES DEPARTMENT OF COMMERCE
National Institute of Standards and Technology
[formerly National Bureau of Standards]
Gaithersburg, Maryland 20899

September 28, 1989

Mr. Nick Jones, President
Weather Bureau Communications Systems
602 College Street
Grand Prairie, Texas 75050

Dear Mr. Jones:

This is in response to your letter of August 29, which I forwarded for review and comment to our Center for Building Technology (CBT).

The opinion of the CBT experts is that the project is of questionable value. Instrumentation of a construction site and the sending of weather data collected to a "supercomputer" for processing might be useful under certain very unique conditions, but not for the vast majority of building construction projects. Further, our experts felt that the idea of instrumenting a high-tech office building during the construction process to determine how it should be operated was also of questionable value.

6 They did feel, however, that it would be valuable to have accurate weather forecasts on an hour-by-hour basis for 1 day, 3 days, or 5 days in the future. This would involve the one way sending of information in computer readable form to construction sites and operating high-tech buildings. Construction and operating decisions could then be made which would minimize costs. Options could involve the use of "dial-up" or broadcasting technologies, which are already well developed. The problem is probably not so much one of developing standards, but rather how to market such information.

We appreciated the opportunity to review your proposal, and hope that our comments will be useful to you.

Sincerely,

David E. Edgerly

David E. Edgerly
Director, Office of Research
and Technology Applications

cc: Dr. Wright
Dr. Hill

LETTER 1320

Dr. Hess

Sir,
In our opinion the DEIS is incomplete.
We have found several inconsistancies regarding the Texas site
evaluation.
There is mentioned the established Trinity Waste Disposal plant
1 (there is no such plant.) Hudspeth County is the site for the
radioactive waste dump. It is said to be 700 miles away in one
2 text and less than 200 miles in another. Does anyone know where
it is for sure?

Most importantly the hydrology reports issued to the DOE by the
State are shoddy at best. It was stated at the Sept. 26 meetings
3 that a years worth of work was done in two weeks!
The gentlemen who actually compiled the reports admitted to
us that he never actually saw any of the work-ups but compiled
his findings on the opinions of others.

The DEIS also states that the wetlands lost in the SSC Site
area can be mitigated by allowing other areas in the fee simple
4 areas to grow up. The J4 area is of great importanee and the only
mitigation allowable by law is to move the facility. We will
exercise this law to prevent any disruption of this prime region.

We have copies of House Bills providing for the SSC, that were
passed only after the Constitutional Rule stating that all Bills
be read over a 3 several days period be SUSPENDED because of the
EMERGENCY of this legislation.

This is a mockery of Government. Where Constitutional rules are
suspended,shoved aside and bent, we have to wonder what's next!

It has come to our attention that the DOE itself is in non-
compliance to it's own rules and regulations

Note DOE Notice 5400.1, DOE Order 5440.1c, DOE Order 5480.1B,
5 DOE Order 5480.4, DOE Order 5483.1A.

We make this statement due to the DOE's shoddy management practices
at several of it's plants and facilities, such as the much talked about
Savanna River Plant where millions of gallons of highly radio-
active waste was allowed to get into the groundwater, and the fact
that for the past 30 years there have been cover-ups concern-
ing several near disastors at this plant (Time Magazine, Oct88)
The Hanford Plant in Wasington State is another in trouble,and
the latest accident at the Rocky Flats Plutonium Plant in Colo.
only enforce our statement that the DOE does not clean up after
itself.

There is also a law here in Texas that we are now looking
6 into,that states that any land acquired by eminent domain by
the state, must be retained by the state.

Enclosed please find the petitions which we have dis-
tributed and collected. There are 400 names, all of which are
7 verifiable. These people are against the SSC so I request that
you take note of the towns they live in. The Mayors of these towns
were inaccurate when they ststed that there was no opposition.

Continued

We say that the State of Texas has misrepresented itself to the DOE for the purpose of having the SSC Facility located here. There is no consideration given to the merits, if any, of the accelerator, but for financial and political gains.

Be assured that we are most vehemently opposed and will do whatever the law allows to stop this facility from coming to ELLIS COUNTY,

Thankyou for your attention,

Sincerely,

Jay + Kathleen Paul

Rt 3 Box 197
Waxahachie, TX 75165

P.S. Please sent us the Final EIS Report.

T. A. S. C.

TEXANS AGAINST THE SUPER COLLIDER

I, AS A CITIZEN OF TEXAS, AM AGAINST THE SSC BEING LOCATED IN ELLIS COUNTY FOR A VARIETY OF REASONS AND HEREBY SHOW MY SUPPORT FOR THE OPPOSITION BY SIGNING THIS PETITION.

NAME	ADDRESS	CITY

LETTER 1321

October 13, 1988
39W871 Deeer Run Dr.
St. Charles, Illinois
60175

SSC Draft EIS
SSC Site Task Force
ER-65,GTN
U.S. Department of Energy
Washington, D.C. 20545

Dear Dr. Hess,

The Draft EIS refers to a favorable attitide in Illinois in reference to the SSC being sited here. Wrong. We DO NOT WANT IT! We will be the burr under your saddle. We will be the thorn in your side. We will do everything possible to slow construction down and make things miserable in general if the SSC gets sited here.

Here is an example of things to come. Read the attached article. It speaks for itself. We will be watching your every move. We will not accept our peace and tranquility to be shattered by this blatant intrusion into our peaceful community.

Keep the SSC out of Illinois. Have the common sense to place it where there are the fewest number of human receptors.... and that is NOT Illinois!

Sincerely,
Carol A. Hadamik
Carol A. Hadamik

Tardy acts to stop well drilling

BY TOM SCHLUETER
Elburn Editor

In his capacity as president of Citizens Against the Collider Here, Bill Tardy often finds himself coming to the rescue of members of his group.

At about 8 p.m. Monday, one of his neighbors near Burlington and Empire roads in St. Charles Township called Tardy about a disturbance near his home.

Reportedly, a well-digging machine was being operated in a residential area.

Tardy said he approached the machine operators and questioned them about running the machine at night.

Tardy said he was told that the well-digging crew was under a deadline in an operation to determine water quality at the 600-foot level. Tardy said the crew told him they were supposed to run the equipment 24 hours a day.

The crew further told Tardy they were working for the state in its attempt to land the Superconducting Super Collider.

Tardy said the the noise level exceeded standards set by law. He told the crew that a complaint would be signed with the Kane County Sheriff if they continued to dig during the evening hours.

"Already they're coming here without warning," Tardy said.

"This is just the beginning of what will happen if this thing (the SSC) comes here," he said.

Tardy said the crew stopped digging at about 9 p.m. that night.

LETTER 1322

TENNESSEE TECHNOLOGY FOUNDATION
10915 Hardin Valley Road
Knoxville, Tennessee 37932
(615) 694-6772

October 14, 1988

Dr. Wilmont Hess
Chairman, SSC Site Task Force
ER-65/GTN
Office of Energy Research
U.S. Department of Energy
Washington DC 20545
Attention: SSC Draft EIS

Dear Dr. Hess:

In accordance with my discussion with Dick Nolan, I am sending one copy of the Tennessee SSC Proposal Team's comments to you and a second copy to Dr. Mack Riddle of RTK.

Also, included is the October 10, 1988 addendum to Dr. Crawford's report on his karst hydrology study. The basic report was provided to the DOE EIS hearing team on September 29, 1988 as part of the Tennessee White Paper.

Sincerely,

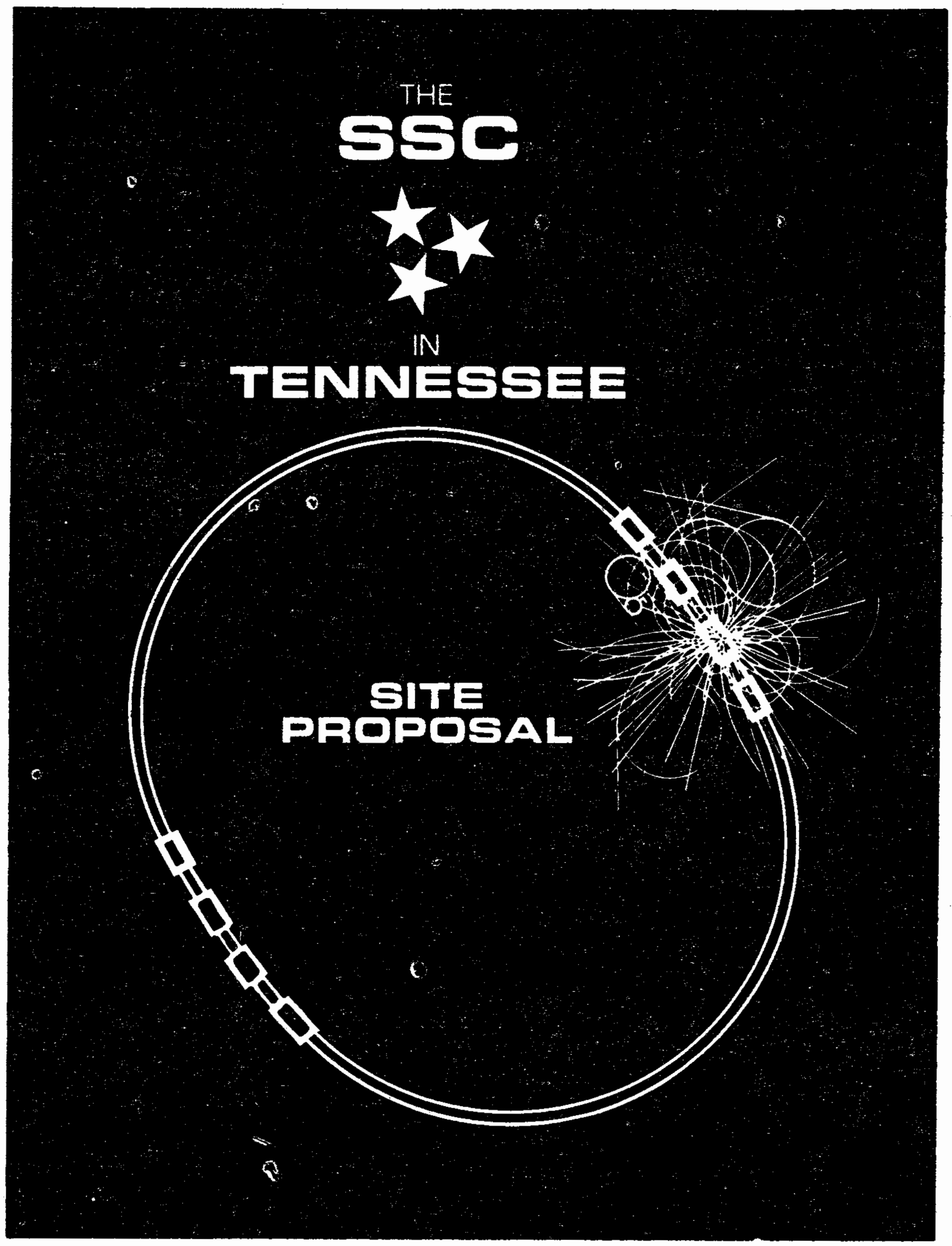
Frederick Weinhold

J. Frederick Weinhold
SSC Project Manager

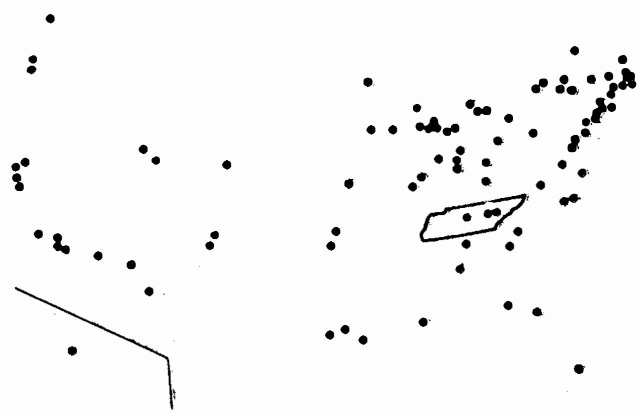
JFW/kmi

Attachments

MAILING ADDRESS: P.O. Box 23184, Knoxville, Tennessee 37933-1184


THE
SSC
IN
TENNESSEE
SITE
PROPOSAL

Tennessee
Convenient to
Active Research Centers in
High Energy Physics



TENNESSEE SITE PROPOSAL

Volume 10
Comments on DEIS

TENNESSEE TECHNOLOGY FOUNDATION
10915 Hardin Valley Road
Knoxville, Tennessee 37932
(615) 694-6772

October 14, 1988

Dr. Wilmont Hess
Chairman, SSC Site Task Force
ER-65/GTN
Office of Energy Research
U.S. Department of Energy
Washington DC 20545
Attention: SSC Draft EIS

Dear Dr. Hess:

This letter and the attached comments are being submitted to you in accordance with DOE's August 24, 1988 notice of "Availability of Draft Environmental Impact Statement (DEIS), Superconducting Supercollider (SSC). The comments reflect the views of the Tennessee SSC Proposal Team and those State agencies directly involved in the proposal. Comments from the State of Tennessee through the A-95 review process will be provided separately.

We have focused on those sections of the DEIS dealing with the Tennessee site and have not commented on the sections dealing with other sites. Our overall conclusion is that the DOE staff and its contractors did a good job in the limited time available. Some of our general comments deal with generic problems arising from the lack of time to fully integrate and crosscheck all of the material provided.

Our review covered all of the sections dealing with Tennessee but our comments are limited to those sections in which we had concerns or have presented additional information. Some of the sections were well done and require no comments -- for example the noise analysis and the sections on archaeology, paleontology, and historic structures. In addition, our comments address many of the issues raised at the September 29, 1988 public hearing held in Murfressboro, Tennessee.

MAILING ADDRESS: P.O. Box 23184, Knoxville, Tennessee 37933-1184

Octobe 14, 1988
Dr. Wilmont Hess
Page Two

We are particularly pleased with the DOE decision to issue a supplementary EIS for the preferred site. We have identified a number of possible mitigative actions which should be considered in the site selection decision process and should be evaluated in the supplementary EIS process should Tennessee be selected as the preferred site. Alternate configurations for certain access areas and modified land acquisition requirements were recommended in the supplementary material provided in early March. The recently submitted white paper identified impacts on the karst hydrogeology and mitigative measures are discussed in this submittal. Finally, a ecent review of the I & I areas reported in this submittal suggests that they might be moved to the far cluster. Should any or all of these be feasible they would go far to overcoming the concerns of affected citizens.

Please call us if you have any questions about our comments or need further information on the site.

Sincerely,

J. Frederick Weinhold
J. Frederick Weinhold
SSC Project Manager

JFW/kmi

Attachments

Volume 10

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TENNESSEE COMMENTS ON THE DEPARTMENT OF ENERGY'S DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE SUPERCONDUCTING SUPERCOLLIDER (SSC) PROJECT

INTRODUCTION

2 This document contains comments by the Tennessee SSC Proposal Team on the DOE Draft Environmental Impact Statement (DEIS). The document, which is Volume 10 of the Tennessee SSC Proposal, includes an overview section and five sections devoted to topical comments. The overview section contains comments related to general issues concerning the entire DEIS. The topical sections contain a concise, general discussion of each topical area as it relates to the Tennessee site and/or the Tennessee proposal. In most cases, the general discussion is followed by specific comments associated with the topical area. All comments address only the portions of the DEIS that concern the Tennessee site. In addition, the comments address certain issues raised at the September 29, 1988 public hearing in Murfreesboro, Tennessee. To the extent applicable, the comments incorporate citations to the information included in prior volumes of the Tennessee proposal and to supplemental reference information already provided to DOE.

10.0 OVERVIEW COMMENTS

3 The State of Tennessee fully appreciates the magnitude of the job DOE and its contractors faced in preparing the DEIS within the time limitations of the established schedule. Tennessee recognizes the difficulty in taking into account recently submitted information and the need to use uniform evaluation methodologies in dealing with large amounts of data at varying levels of detail for each site. This was undoubtably one reason that DOE decided to prepare a site-specific supplemental EIS after the preferred site has been identified. However, these approaches may unduly penalize a site during the site selection process. There should be provisions made to identify and recognize certain areas in which the use of uniform evaluation methodologies may result in data that overstates identified impacts (both environmental and economic) compared to that yielded by using more recent or site-specific information.

4 Tennessee submitted site-specific information following the RTK and DOE site visits in March and June, respectively. In some parts of the DEIS there is evidence that these recent submittals were only partially considered. Table 10.0-1 lists Tennessee's major information and data submittals. Examples of information included in these submittals that would have had a major impact on the DEIS conclusions regarding the Tennessee site include:

1. A re-evaluation of spoils disposal areas;

2. enactment of all three pieces of legislation identified in the Tennessee proposal; and

3. proposed adjustments and modifications to the the template.

Table 10.0-1
Major Tennessee SSC Site Proposal Submittals

Initial Proposal. Volumes 1-8. Transmittal letter to: Secretary John S. Herrington, United States Department of Energy, from the honorable Ned McWherter, Governor, August 21, 1987.

Supplementary Material. Volume 9, Books 1-4. Transmittal letter to: Secretary John S. Herrington, United States Department of Energy, from the honorable Ned McWherter, Governor, March 3, 1988.

Supplementary Material. Volume 9, Book 5. Transmittal letter to: Secretary John S. Herrington, United States Department of Energy, from the honorable Ned McWherter, Governor, March 29, 1988.

Tennessee SSC Site Soil Mechanical Properties by Dr. William F. Kane. Reference 9.12-1. Transmittal letter to: Dr. L. Edward Temple, Jr., SSC Site Task Force, U. S. Department of Energy, from Paul D. Manhardt, May 2, 1988. Note: Draft submitted earlier.

Tennessee SSC Site Geological and Hydrological Testing Program, edited by P.D. Manhardt. Reference 9.12-2. Transmittal letter for final version to: Dr. Edward Temple, Jr., SSC Site Task Force, U. S. Department of Energy from Paul D. Manhardt, May 2, 1988. Note: Early drafts and appendices submitted separately.

Supplementary Material. Volume 9, Book 6. Transmittal letter to: Secretary John S. Herrington, United States Department of Energy, from the Honorable Ned McWherter, Governor, July 14, 1988.

Tennessee White Paper: Hydrogeology of the Snail Shell Cave-Overall Creek Drainage Basin and Ecology of the Snail Shell Cave System by Nicholas C. Crawford, Ph.D. and Thomas C. Barr Jr., Ph.D. Final draft presented to responsible person at DOE hearings in Murfreesboro, Tennessee, September 29, 1988. An addendum is provided with this submittal.

There are also instances in which site-specific information in the Tennessee submittals prior to April 1988 was not used in the DEIS because it did not fit DOE's generalized uniform methodologies. This has resulted in the misidentification of impacts and the overstatement of negative impacts of SSC construction and operation at the Tennessee site. Instances in which the use of site-specific
5 information would have significantly altered the Tennessee data
appearing in the DEIS include:

1. Evaluation of groundwater impacts with respect to individual wells.

   A "well count" was inappropriately used to imply adverse
   6 impacts on groundwater quantity and quality with no
   consideration given to well depth and/or well aquisition.
   Detailed up to date information concerning well locations
   and depths was included in Tennessee's submittals.

2. The depth of the injector facility.

   The DEIS assumes a near-surface location using cut-and-
   cover construction, which enhances the potential for
   7 impacts in the shallow groundwater and karst areas of
   the Tennessee site. Tennessee's proposal located the
   injector deep to avoid any potential for such impacts.

3. Population in-migration and resulting socioeconomic assessments.

   8 The DEIS evaluations, based on generalized assumptions,
   overstate actual documented experience with a much
   larger project in middle Tennessee. This documentation
   was provided in Tennessee's submittals.

4. Evaluation of electric transmission line impacts.

9 Transmission line impacts are evaluated in terms of "line miles" of transmission lines with no distinction between totally new transmission lines and those constructed within or adjacent to existing right-of-way. The latter is the case for most of the transmission lines at the Tennessee site.

10 The Tennessee Proposal Team recommends that DOE incorporate the more recent information submittals and the site-specific information already provided into both the final EIS (FEIS) and the final site selection decision process. This would ensure that a site is not penalized by overstated impacts resulting from DOE's use of generalized uniform impact evaluation methodologies or failure to use all data available.

11 The DEIS, including its related appendices, is a very complicated document that deals with complex information. Unfortunately, the public and media have drawn hasty conclusions based on the summary information in Volume I. Tennessee recommends that the introduction be expanded to include a better description of the tiered and crosslinked organization of the document.

12 Furthermore, the simplification of information as it was transferred from the appendices to Volume I has resulted in a Volume I Summary (the only portion of the DEIS that most individuals will read) that contains misleading statements. The "well loss" issue is a prime example of this type of misrepresentation. The presentation in Volume I incorrectly implies that the wells lost are due to adverse impacts to groundwater quality and quantity. The information presented in Volume IV, Appendix 7.2, page 136-140, on the other hand, while not fully correct with respect to the Tennessee site, does

reflect the basic understanding that the "350" number is simply a well count independent of any actual impacts to groundwater. This inaccurate summary statistic has resulted in a great deal of unfavorable public concern and press in Tennessee.

10.1. GEOLOGY, HYDROLOGY, AND CONSTRUCTION ISSUES

10.1.1 IMPACT ON WATER WELLS

13 The water well impact assessment method and mitigation conclusions are rather simplistic and, as a result, have led to misleading conclusions and an incorrect summary in Volume I. In Section 7.2.2.2.F.1, page 92, the authors state in the DEIS that the impact assessment method involves all existing and "perhaps existing" water wells on land acquired either in Fee Simple or Stratified Fee estate. In the Tennessee section, pages 139 and 140, it is stated that 350 wells lie within the bounds and "even though only a few may be directly affected a substantial number of wells might be impacted." This is translated in Volume I Table 1-1, and Table 3-7 as loss of 350 water wells, implying that 350 residents will lose their wells because of adverse environmental impacts. It was reported in the Nashville Tennessean, for example that "hundreds of wells will be lost" if the SSC were located in Tennessee.

14 The analysis which follows is more realistic and complete than that which appears in the DEIS. It leads to a significantly different conclusion: that many less than 70 wells will be impacted by construction of the SSC in Tennessee. In addition, the State is committed to providing alternate water sources to all residents whose present water supply is negatively influenced by SSC construction or operation.

The Tennessee team used the following definitions to define the set of potentially affected wells:

1. Depth of well. If the bottom of a well was within 150 feet of the tunnel or deeper than the tunnel, it was considered affected.

2. Location of well. If a well was within 500 feet of any shaft, J-Site, or other fee property, it was considered affected.

3. Unknown depth within the tunnel trace. If the total depth of a well was unknown and within the 1,000-foot tunnel trace, it was considered affected.

The resulting count revealed that 70 active wells fall into one of the three categories. Over half of the 70 wells have unknown total depths. Most wells in the site area are less than 250 feet deep, and it is therefore likely that less than 70 would actually be affected.

15 Furthermore, in order for the SSC to operate successfully, the tunnel and all underground facilities must be as dry as possible. Any water-bearing underground fractures that are intersected during construction will be sealed; the number of water wells lost will be minimized because water-bearing fractures will be sealed and water will not drain away into the tunnel.

In response to the Tennessean article, the U.S. Geological Survey has supported the Proposal Team's position on the lost water well issue. A letter from the Tennessee District Chief, directed to Wilmot Hess, Chairman of the SSC Site Task Force and dated September 2, 1988, states:

16
> Again, the question needs to be asked what criteria were used to determine which wells would dry up and which wells would keep their water? If the criterion was simply that these wells are located near the proposed track of the super collider, the conclusion that "hundreds of wells would be wiped out" (as reported in the Nashville Tennessean) is gross speculation.

The review conducted by the Tennessee Division of Geology determined that probably many less than 70 wells would be affected by SSC construction and operation, and that groundwater in the site area would not dry up. It should also be noted that the State of Tennessee has stated its commitment to provide alternate water sources to any resident who can demonstrate that his or her water supply was lost by the construction or operation of the facility Volume 9, Section 9.2.4 of the Tennessee Supplementary Material states:

> [I]t is concluded that the SSC should not have a significant adverse impact on well waters, although a few individual wells in the vicinity of access shafts could be affected.

10.1.2 CONSTRUCTION SPOILS

10.1.2.1 General Discussion

17 Much of the discussion in the DEIS regarding the disposition of construction spoils seems to have overlooked supplementary material submitted by Tennessee on July 14. The current proposal for spoils disposal is presented in Volume 9, Book 6, Section 9.20.6 of the Tennessee Supplementary Material. On page 9.20-55 Tennessee indicates three alternatives for disposal of the high quality limestone produced during SSC: used for construction of SSC facilities, sold for use as construction aggregate; and, third, it could be sold to be crushed for agricultural lime. Spoils storage (disposal) sites have been provided to allow construction to proceed without the need for immediate re-use of th excavated materials. These sites would only be used for permanent storage in the event that some limestone was not disposed of during the construction period. This is unlikely, however, as discussed in the proposal, a marketing evaluation found that there is ample regional demand for this material and that the five existing quarry operators listed in Table 9.20.9 might provide a ready market conduit.

18 As further discussed in the Tennessee proposal subsection entitled "Wastewater Treatment for Construction Related Activities," treatment ponds to capture and treat the contaminated runoff from these spoil storage areas would be required. The design and operation of the spoil handling, disposal, and wastewater treatment facilities will have to comply with the terms of the NPDES permits, which will be issued to protect the receiving streams below these areas. The location and design of these spoil areas and ponds will be evaluated by the State and relocated if necessary to ensure that no discharge from these areas will reach groundwater prior to discharge from the treatment ponds.

10.1.2.2 Specific Comments

19 1. In Volume I, page 3-45, DOE uses a figure of 365 acres of spoils sites. This is much higher than the 285 acres (which includes a 10 percent swell factor) projected on page 9.20-19 of the Tennessee proposal.

20 2. In Volume I, Section 5.1.10.3.F, the authors of the DEIS state: "One of the state's alternatives is to dispose of limestone spoils at 35 sites, each close to a surface facility." This statement disregards other more probable mitigation means, including sale of the spoils and use of the spoils for construction of the SSC.

21 3. In the DEIS Volume IV, Appendix 10, page 26, the three alternatives for spoils disposal are identified. The second alternative is for the excavated limestone to be sold for its commercial value. The DEIS states that Tennessee has not identified to whom the material might be sold. The commercial potential for the limestone is given in Volume 9 of the proposal (Section 9.20.6, page 9.20-55) where current annual limestone production in the site area is identified and a means for marketing through the local quarry distribution system is suggested.

22 4. In Volume IV, Section 7.1.3.6.F.1, two of the spoils disposal sites are claimed to be on perennial streams where impacts on surface water could be significant. Section 9.20.6 of the Tennessee proposal states that these sites have been relocated away from streams. As stated in the proposal, final location and engineering of spoils sites, should they be required, is subject to permitting and regulation by the Tennessee Divisions of Water Pollution Control and Air Pollution Control.

23 5. The proposed actions and alternatives on pages 3-59 and 3-63 of DEIS Volume I are generally in agreement with the Tennessee-proposed alternatives.

10.1.3 DEPTH OF THE INJECTOR FACILITY

10.1.3.1 General Discussion

24 The injector facility at the Tennessee site was proposed to be located 30 feet above the main tunnel (Tennessee Initial Proposal, Volume 3, Figure 3.1-3E) at an average depth of about 250 feet. The reasoning for this proposed location is based upon available drill hole and well data (Tennessee submittals, Volume 3, Sections 3.2.3.3; Volume 9, Section 9.11.5, 9.12), which indicated that a deeper site provided the best engineering conditions for low-cost, high-speed construction of the tunnels (Volume 3, Section 3.5.4; Volume 9, Section 9.12.4) and minimized environmental concerns by avoiding the near-surface karst conditions (Volume 3, Section 3.2.4.3, Volume 9, Table 9.12-2) and the major groundwater sources. This location also seemed to fit the SSC design specification well since it provides for short, almost horizontal tunnels connecting the high energy booster to the main tunnel.

The fact that the best construction engineering location for the injector is deeper does not preclude the location of all or part of the injector near the surface using cut-and-cover construction. A near-surface facility with berm covering would result in increased construction cost and time, however, due to non-uniform conditions and the need for mitigation of environmental problems. The cave ecological systems and complex geohydrology in the developed near-surface karst system will require special engineering considerations to ensure that construction and operation of the injector does not interfere with these systems. As noted in Volume 3 of the Tennessee Initial Proposal, the irregularity of the karst makes this a much greater problem for horizontal tunnel construction covering large areas than for vertical construction such as shafts and surface buildings, which are constructed over relatively small areas.

25 One reason for DOE wanting to locate the high energy booster on the surface is to keep the beam test facilities near the surface, assuming that they would be more conveniently accessible there. This raises the design question of whether the high energy booster and the beam test facilities must be at the same elevation. If this is not necessary, an alternative to a surface location is to put the booster deep and the beam test facility shallow; instead of two long tunnels connecting the HEB on the surface to the main tunnel at depth, only one long tunnel would be required between the HEB and the Beam Test Facility.

Since the injector facility consists of four components, an alternative to placing the entire system at one elevation is to have the components at different elevations. For example, since the medium and high energy boosters are largest, they could be located deep; the relatively small Linac and low energy boosters could be near the surface. This would keep the more troublesome components closer to the surface for ease of interaction while greatly reducing the impact of horizontal construction in the karst.

Since the beam power at the low energy booster is low compared to the output of the high energy booster, it is more easily controlled, allowing for more flexibility in the placing of the transition tunnels between the upper and lower elevations.

It is clear that shifting the location of the injector facilities to the surface will involve the mitigation of environmental impacts. Balancing of the costs of engineering around environmental problems
26 against the perceived operating problems associated with deep location of the injector would require closer examination involving SSC designers. This should be accomplished early in the preparation of the supplemental EIS to ensure that proper consideration be given to this important aspect of the SSC project.

10.1.3.2 Specific Comments

1. There seems to be confusion over the proposed depth of the injector facility at the Tennessee site. DEIS Volume IV, Appendix 1, Section 1.2, page 1 states that the injector was proposed midway between the surface and the collider ring. DEIS Volume I, page 3-45
27 states more correctly that the injector facility was proposed "near tunnel depth"; the facility's location is given as "deep underground" in Volume I, Section 3.4, Table 3-3, page 3-26. Tennessee's recommendation for the depth of the injector facility, which appears in Figure 3.1-3E of the Tennessee Initial Proposal (page 3-10), shows the injector higher energy booster located 30 feet above the tunnel.

2. In DEIS Volume I, page 3-45, the meaning of the statement "...that the ISP-presented injector would be implemented at the Tennessee site..." is unclear. Also, Table 3-3 presents a deep injector as an
28 "adaptation to the ISP conceptual design." The "ISP-presented injector" is discussed on page 46 of the ISP, where it is stated that "the accelerators that make up the injection system will be buried

underground with a minimum of 15 feet of soil above them. It is desirable to maintain a vertical separation of 20 feet between the HEB and the collider to facilitate access to one machine while the other is running." At the Tennessee site, an injector placed anywhere from 15 feet below the top of a berm to 230 feet in depth would meet this criterion.

29 It is suggested that the Volume I, DEIS statement be rephrased to conform with the Volume IV, Appendix 1, Section 3.4, page 1 statement that "For purpose of this analysis, all of the booster facilities were assumed to be located at the surface in cut-and-cover construction, similar to the other BQL sites."

30 3. Certain statements made in the DEIS do not agree with the DOE assumption in Comment 2 above. This is because the data gathered for the preparation of the DEIS assumed that all of the injector would be deep and only tunneling construction methods would be used.

31 a. In Volume I, pages 3-16 and 3-62, cut-and-cover construction is assumed, but the environmental affects of cut-and-cover construction on water quality, erosion, etc. were not considered in the Tennessee data submitted to DOE.

32 b. In Volume IV, Appendix 2, Section 2.4.2.3, adjustments in cost for "extra long connector tunnels from the injector to a deeper collider ring" assume that the High Energy booster is on the surface. This may not be the case for the Tennessee site, where only one long tunnel from the surface may be required if only part of the injector is placed deep.

10.1.4 KARST HYDROLOGY AND SNAIL SHELL CAVE

10.1.4.1 General Discussion

The shallow karst system in the campus-injector area of the Tennessee site is briefly described in Tennessee's Supplementary Material, Volume 9, Book 6, which was submitted in July. It was noted at the time that the Snail Shell Cave system required further study to delineate possible environmental impacts to the cave system and associated hydrology. A study of the system was subsequently carried out by Dr. Nicholas C. Crawford of Western Kentucky University and was included in the Tennessee White Paper submitted to DOE on September 29, 1988. The following is a summary report of relevant findings to date.

33 Dye injected into the Cherry Grove Karst Window in Area A of the campus-injector complex was detected at the Pike Karst Window and at McKnight Spring. Therefore, it appears that the drainage from Areas A and C of the campus-injector complex flows to McKnight Spring without joining any of the streams in the Snail Shell Cave system. After resurfacing at McKnight Spring, the stream flows down Overall Creek for 1.0 kilometer (0.6 miles) before sinking at McKnight Swallet. During low discharge, the surface channel of Overall Creek is dry all the way to its confluence with the West Fork of the Stones River. Dye traces revealed the location of the subsurface Overall Creek at the Jack Wright water well, the Ida Haynes cave stream, the Dennis McDonald cave stream, the MTSU Blue Hole Karst Window, the Stone Man Quarry spring, the Chunka Trunk Cave stream, the West Fork Cave stream, the Wallace Karst Window and a final resurgence at Wallace Spring on the West Fork of the Stones River. The two streams in Snail Shell Cave were detected at the Blue Sink Karst Window and Overall Spring. After sinking at Overall Swallet, it is believed that the stream then flows through

Three Bridges Plunge Karst Window to join the subsurface Overall Creek somewhere between McKnight Swallet and Dennis McDonald Cave.

Following heavy rains, the subsurface Overall Creek cannot handle the increase in discharge and it rises to the surface at several overflow springs which flow in to the usually dry Overall Creek. From the headwaters of Snail Shell Cave to Wallace Spring on the West Fork of the Stones River, the entire surface-subsurface karst drainage system is perched above the shale layers of the Pierce
34 Confining Layer. Tennessee's recommendation to place the SSC tunnel deep, at an elevation of 107 meters (350 feet) MSL in the Murfreesboro Limestone, was made to protect the karst and associated groundwater resources. It was also to avoid the problems of tunneling in karstified carbonate rock. Dr. Crawford's investigation supports the conclusion that the karst is shallow and not hydrologically connected to the Murfreesboro Limestone at the level of the proposed tunnel. Therefore, the karst should not have an impact upon the tunnel and the tunnel should not have an impact on the karst.

All of the known and mapped passages of the Snail Shell Cave system lie to the west and upstream of the proposed site for the SSC
35 campus-injector complex. Since underground streams cannot flow uphill, it is hard to imagine any activities in the campus-injector complex site which could in any way affect the explored and mapped passages of the Snail Shell Cave system.

The campus-injector complex is, however, drained by cave streams which could carry contamination into the subsurface Overall Creek
36 system and then all the way to Wallace Spring on the West Fork of the Stones River.

The State of Tennessee will require the development and implementation of appropriate management controls in the final SSC design to avoid environmental contamination during the transfer, storage, use, and disposal of both hazardous materials and hazardous wastes. A well-designed storm water runoff collection and control system with monitoring and containment capabilities will be required. This would also include additional protection of documented sinks to ensure the integrity of the karst system.

37 Development upon karst terrain can proceed without groundwater contamination or damage to the underlying caves if special precautions are taken as an intergal part of project design. The SSC project could be a national model demonstration of how development should occur in karst areas.

10.1.4.2 Specific Comments

38 1. In Volume I, Section 4.2.2, page 4-15, the DEIS states that Tennessee is characterized by a karst (limestone) hydrologic region. This is true only close to the surface. Karst features diminish quickly with depth. This is described in the Tennessee Initial Proposal, Volume 3, pages 41, 52, and 54.

39 2. In Volume I, Section 4.2.3.1, Table 4-4, the groundwater depth is listed as shallow (up to 2,200 ft). As reported in Volume 3, Figure 3.3-4 of the Tennessee Initial Proposal, groundwater depth at the site averages 50 to 250 feet.

40 3. In Volume I, Section 4, page 4-16, the statement that dissolution and fracture flow occurs in the carbonate and shale sequences needs to be modified to exclude shale sequences. There are no shale formations in the site region. The phrase "shale sequences" implies massively bedded shales. The shales in limestone of the Stones River Group occur as thin partings between the carbonate beds. This

phenomena is fully explained in Volume 3, Section 3.2.1.2 and 3.3.2.2 of the Tennessee Initial Proposal.

4. In Volume I, Section 5.1.5.1.B.6 and Volume II Section 3.6.1 the
41 DEIS authors state that the cave system is located "immediately east..." This should be changed to "immediately west..."

10.1.5 EARTH RESOURCES AND BACKGROUND RADIATION

1. In Volume I, Section 5.1.1.2 of the DEIS, the following statement regarding phosphate potential is somewhat misleading:

> The Tennessee site has the potential for phosphate contamination from material excavated from the Bigby-Cannon formation. Impacts from phosphate
> 42 contamination will be minimal because of low concentrations of phosphate minerals (if present) and overall small volumes of rock material to be excavated from this formation.

Only one access facility (E-7) would have recovered rock material from the Bigby-Cannon. A slight relocation of this shaft to a lower elevation has been proposed to (Volume 9, Table 9.20-1) place the shaft collar in a unit below the Bigby/Cannon, and therefore below phosphate-bearing units. With the proposed shaft relocation, no phosphate potential exists.

2. In Volume I, Section 4.1.1, Table 4-1, the stratigraphy at tunnel depth is described as having local phosphate and potential minor sulfide mineralization.

43 As noted in the previous comment, the proposed relocation of the shaft at E-7, removes the potential for phosphate. The minor sulfides that have been observed are pyrite, in trace amounts only, and an

occasional bleb of sphalerite. Neither mineral, or a combination, constitutes a contaminant to the limestone.

44 3. Volume II, Section 4.6.1.1, Table 4-11, page 4-34 lists the "background concentration of radionuclides in rock at tunnel depth." The values in the Tennessee column are annotated to be "values for soil" but do not agree with the data for soil given in Table 4-10, page 4-35. The data identified in Volume IV, Appendix 5c, Section 5.6.6.1, page Tennessee 53 for soil/rock and are seemingly from core sample data presented in the Initial Proposal (Volumes 5, Table 5.6-1), Volume 9 (Table 9.11-1) and Reference 9.12-2, Appendix H. The core sample data were for rock only. These anomalies should be resolved in the FEIS.

10.1.6 GEOHYDROLOGY

10.1.6.1 General Discussion

45 The groundwater in the Central Basin of Tennessee occurs in limestone having developed secondary porosity and permeability with karst development near the surface. As noted in the previous comments, Volume I, Section 4.2.2.1, page 4-13 of the DEIS states that Tennessee is characterized by a karst (limestone) hydrologic region. This statement is too brief and misrepresents the site. The limestone in the site region is very thick. The karst solutioning features found near the surface present a totally different hydrology than the "tight" limestone at the proposed tunnel depth.

10.1.6.2 Specific Comments

1. In Volume IV, Appendix 5C, pages 28-31, the Ridley Limestone is reported to have water yields of 100 gal/min. Outcrops in the Murfreesboro limestone are reported to have large solution openings and to yield 100 gal/min. At depth, the Murfreesboro does not yield water to wells.

46 The report of 100 gal/min yields in the Ridley and Murfreesboro limestones can be misleading. These formations probably have wells that have yielded this amount, but they are very rare. As reported in Volume 3 (Table 3.3-1) of the Tennessee Initial Proposal, the average yield of water wells in the area is 15.8 gal/min and only 20% have yields greater than 20 gal/min. The "Summary of Ground Water Data for Tennessee Through May 1972," which was referenced in the Tennessee Initial Proposal, reports that 0.7% of wells drilled in the Ridley yield 100 gal/min or more, and that 0% of wells drilled in the Murfreesboro yield 100 gal/min or more.

2. In Volume IV, Section 7.1.3.6.F.1, page 67, it is stated that tunnel construction in Tennessee could require significant dewatering: "...it has been estimated that up to 21,000 gal/minute/100 ft. of tunnel could infiltrate or as much as the base flow from a 20- to 30- square mile watershed...such an impact would be short term."

47 This paragraph contradicts statements in the Tennessee submittals (Volumes 3, Volume 9, and Reference 9.12-2) and other statements made in the DEIS (Volume VII, Section 7.2.3.6.A-1 on page 136 and summary statements on dewatering requirements in Volume I). In these statements, expected inflow rates during construction are well below 10 gal/minute/100 ft.. The proposal statements are based upon significant numbers of regional mineral test holes and water well data, site-specific drilling and geohydrologic testing, and deep

mining experience in similar geology. It can only be assumed that the DEIS paragraph is considering a highly unlikely event which, due, to the tightly jointed structure of the deep setting, could be readily controlled using grouting methods.