DOE/EIS-0067

CPUC-A-59172
SCH-7905 1403

Final Environmental Impact Statement,
Environmental Impact Report

230 KV International Transmission Line, San Diego County, California to Tijuana, Mexico, San Diego Gas & Electric Company

U.S. DEPARTMENT OF ENERGY AND
CALIFORNIA PUBLIC UTILITIES COMMISSION

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U.S. Department of Energy
Administrator Economic Regulatory Administration
Office of Utility Systems

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I. COVER SHEET

Responsible Agency:

Federal:

U.S. Department of Energy
Economic Regulatory Administration
Office of Utility Systems

State:

California Public Utilities Commission

Title of Proposed Action:

Federal:

The Issuance of a Presidential Permit to San Diego Gas & Electric Company

State:

The issuance of a Certificate of Public Convenience and Necessity to San Diego Gas & Electric Company

Further Information:

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Designations:

Federal:

Final Environmental Impact Statement

State:

Final Environmental Impact Report

Abstract:

This Final Environmental Impact Statement/Report was prepared jointly by the Economic Regulatory Administration (ERA) and the California Public Utilities Commission (CPUC). The proposed action by the Department of Energy is the granting of a Presidential Permit for the construction, connection, operation, and maintenance of 10 miles of a 230-kV transmission line from Miguel Substation to the international border. The CPUC proposed action is the issuance of a Certificate of Public Convenience and Necessity.

The prepared project will connect the San Diego Gas & Electric System (SDG&E) with that of the Comision Federal de Electricidad de Mexico (CFE) for the purpose of economic exchange of power and increasing reliability.

Major impacts:

Visual changes, U.S. Border patrol aviation safety, and disturbance of rare and endangered plant species and cultural resources.

SUMMARY

San Diego Gas and Electric Company (SDG&E) has applied for permission to construct, maintain, and operate a 230 kV transmission line that will cross the U.S./Mexican international border. The line will originate at SDG&E's Miguel Substation, located 10 miles to the north of the border in the southern part of San Diego County. The line will interconnect with a Mexican line at the border. From the border it will extend to the Tijuana Substation in Mexico, located 3 miles south of the border. The project will provide for the economic exchange of electricity between SDG&E's transmission system and the Mexican system in northern Baja California, which is operated by Comision Federal de Electricidad de Mexico (CFE). A second purpose of the proposed interconnection is to improve the reliability of both the SDG&E and CFE systems. Before SDG&E can begin construction of this transmission facility, it must receive approvals from state and federal agencies.

An electric utility in the United States proposing to build a transmission line across a U.S. international border must obtain a Presidential Permit authorizing the project (See Executive Orders 10485 and 12038). The Economic Regulatory Administration (ERA) of the U.S. Department of Energy (DOE) processes and issues each Presidential Permit. In addition to this permit, SDG&E must obtain a Certificate of Public Convenience and Necessity from the Public Utilities Commission of the State of California (CPUC). Regulatory decision-making at both the state and federal levels must comply with environmental review laws. This environmental impact document on the proposed project has been designed to meet the federal requirements of the National Environmental Policy Act (NEPA) as well as the state requirements of the California Environmental Quality Act (CEQA). The ERA and CPUC agreed to prepare jointly this combined Environmental Document, EIS/EIR (Environmental Impact Statement/Environmental Impact Report). To guide the preparation of the environmental document, the ERA and the CPUC signed a letter of understanding that defined the obligations of each agency.

The purpose of the applicant's proposed interconnection is to provide economic exchanges of power between CFE and SDG&E, thereby reducing oil and gas consumption at SDG&E generators. A second purpose of the project is to improve reliability of both the CFE and SDG&E systems.

Possible alternatives to the proposed transmission line interconnection include conservation of electricity, purchase of power from other U.S. sources, additional generating capacity within the SDG&E system, and no action (denial of proposed project). The no action alternative would avoid potential project impacts to cultural resources, rare and endangered plant species, and visual resources; and the creation of an aviation hazard for U.S. Border Patrol surveillance aircraft. The no action alternative would eliminate the opportunity for reducing SDG&E oil and gas consumption through economic exchanges of power.

The conservation alternative would require implementation of conservation measures beyond those currently projected. The conservation alternative would avoid the adverse impacts of the project (explained above); however it would not allow enhancement of reliability nor economic exchanges of energy.

The alternative of purchasing power from other U.S. sources could have a wide variety of impacts depending upon how the power was generated. The purchased power alternative would also eliminate one opportunity to reduce SDG&E fuel consumption.

The additional generating capacity alternative would most likely rely on either geothermal development in Imperial Valley or combustion turbine generators. Potential impacts associated with geothermal development include land use for the plant, subsidence, hydrogen sulfide emissions, and impacts associated with construction of a transmission line from the power plant site. Impacts associated with a combustion turbine generator include land use for the generation plant, air pollution emissions, consumption of a nonrenewable resource, and construction of a transmission line.

SDG&E considered three possible routes in determining the most desirable location for the interconnection. The applicant's proposed route lies to the west of Lower Otay Reservoir, between the Tijuana Substation in Mexico and the San Miguel Substation in San Diego County. These substations both presently have high voltage capability. Impacts associated with this proposed route include visual impacts to some parts of Lower Otay County Park, and the Proctor Valley Road and Otay Lakes Road area. There are also potential impacts to rare and endangered plant species, and to cultural resources, although these appear to be avoidable impacts. The proposed route would also create an aviation hazard to U.S. Border Patrol surveillance aircraft.

One route that was considered lies along an existing 69 kV line that extends from Miguel Substation to Frontera Substation in Mexico near the international border. This route passes through urbanized parts of Chula Vista and the City of San Diego. The Frontera Substation does not have 230 kV capability, and a line would have to be extended from the Tijuana Substation across urbanized parts of Tijuana to achieve 230 kV capability.

A second route located to the east of the Lower Otay Reservoir was also considered. The eastern route would cross land designated by The Bureau of Land Management as Wilderness Study Area. Transmission lines and other structures are prohibited in the Wilderness Study Area. In addition, a transmission line in the eastern route would have significant visual impacts on Lower Otay County Park visitors, and would also create a hazard to U.S. Border Patrol surveillance aircraft.

The conservation and no action alternatives would have the least adverse environmental consequences. However, the no action alternative would not provide the benefits of reduced oil and gas consumption in the SDG&E system nor increased reliability. The additional generating capacity and purchased power alternatives would have greater adverse environmental consequences in the United States than the proposed project.

Construction of the transmission line in the proposed corridor, located on the west side of Lower Otay Reservoir, would have fewer adverse environmental consequences than either the corridor to the east of the reservoir or the existing route from Miguel Substation to Frontera Substation.

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FIGURES (Cont.)

SECTION I PURPOSE AND NEED

A. PROJECT SUMMARY AND PURPOSE

The project is the proposed construction of a 230 kilovolt (kV) electric power overhead transmission line from the Miguel Substation in southern San Diego County, to the international border between the United States and The Republic of Mexico as shown on Fig. 1-1. This transmission line would be 13 miles in total length, 10 miles in the United States and 3 miles in Mexico, connecting Miguel Substation in San Diego County with Tijuana Substation in Mexico. The interconnection will join San Diego Gas and Electric's (SDG&E) system with the COMISION FEDERAL de ELECTRICIDAD de MEXICO'S Baja California Norte (CFE-BCN) system. The CFE-BCN system is not connected to the main CFE grid, but operates as an isolated network. The subject project of this joint Environmental Impact Report/Environmental Impact Statement is the segment of transmission line between Miguel Substation and the international border.

The environmental consequences of the proposed project will only be considered within the boundaries of the United States and not the Republic of Mexico as specified in Executive Order 12114. The applicable interpretation of Executive Order 12114 by the Assistant Secretary for Environment is present in the appendix of this environmental document.

The applicant's two stated purposes for their proposed project are to achieve an economic exchange of energy between SDG&E and CFE and to increase reliability. Economic exchanges take place when electricity that is supplied from one utility system replaces power that is being produced or that is capable of being produced by more expensive sources in the other system. Increased reliability is afforded by excess capacity available during off-peak hours and also by diversity of peak load. The diversity of peak load results from the SDG&E peak load occurring at a different time of day than the CFE peak load. Increasing reliability is considered desirable by both utility companies and regulatory agencies, although no specific reliability deficiency has been identified for the SDG&E System.

The applicant has performed an economic and reliability analysis on the proposed interconnection project. The results of the analysis indicate that the savings that can be realized are sufficient to offset the capital costs of the project in a three to four year period. In addition, the applicant's analysis indicates that the line will increase reliability. An analysis by the Economic Regulatory Administration (ERA) also indicates an apparent increase in reliability.

B. RESOURCE PLAN AND SUPPLY REQUIREMENTS

The SDG&E electric load and resources are shown on Table I-1 for the period from 1980 to 1990. The peak load is based upon the 1979 California Energy Commission (CEC) adopted forecast (CEC, 1979a). There are 2383 megawatts (MW) in existing resources and another 440 expected from San Onofre units 2 and 3 by 1983. By 1990, another 250 MW of geothermal power are estimated by the ERA to be available.

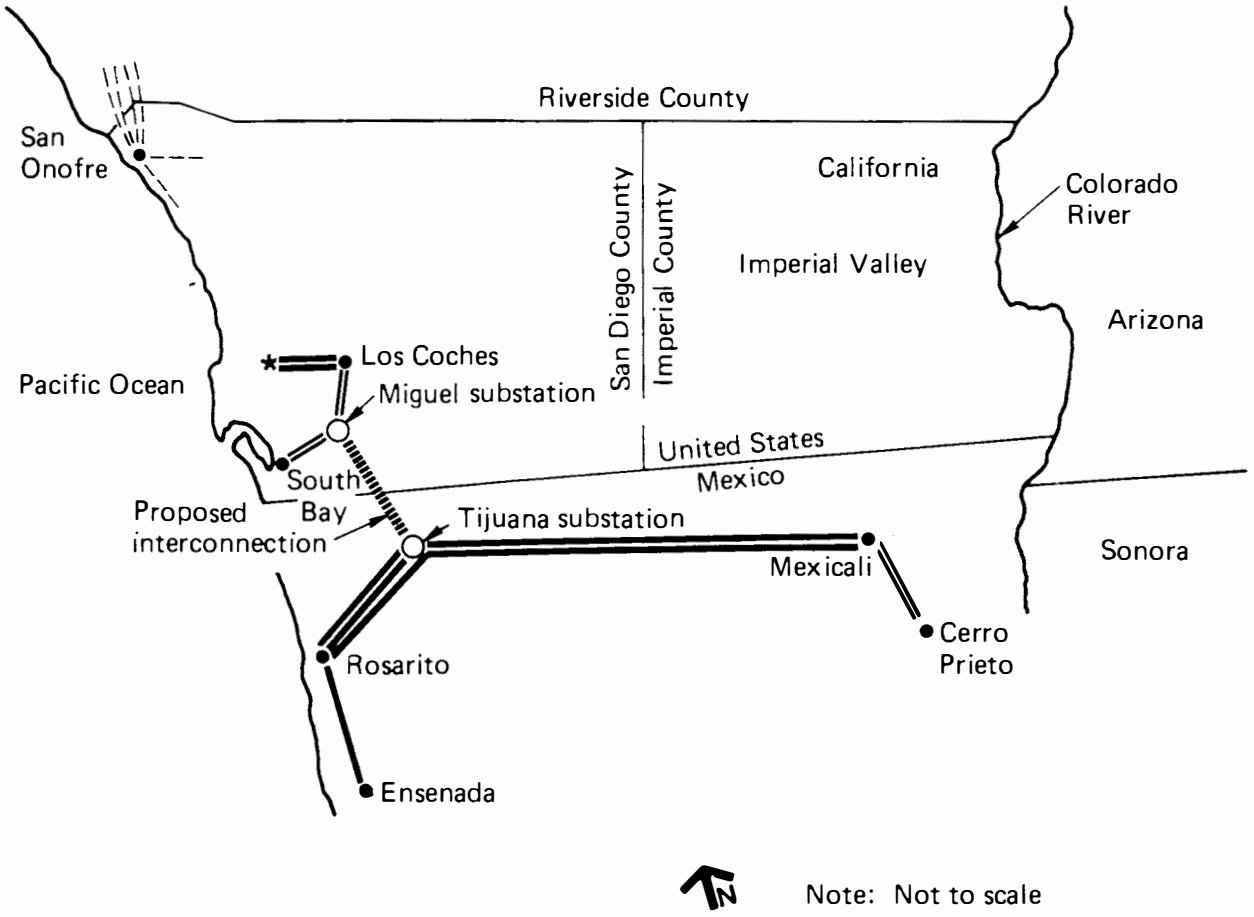

Figure 1-1. The proposed interconnection will extend from Miguel Substation on the north to the Tijuana Substation in Mexico on the south. This interconnection will link the SDG&E grid with Mexican CFE grid.

TABLE I-1

SAN DIEGO GAS & ELECTRIC COMPANY
ELECTRIC LOAD AND RESOURCES*
(Megawatts)

Year	Peak[a] Load	Existing Resources	San Onofre 2 & 3	Geothermal	Firm[b] Transfers	Total Resources	Reserve[c] Margin	Present[d] Reserve
1980	2086	2383	0	0	247	2630	544	26.1
1981	2140	2383	44	0	247	2674	534	25.0
1982	2196	2383	264	0	483	3130	934	42.5
1983	2253	2383	440	0	434	3257	1004	44.6
1984	2312	2383	440	0	434	3257	945	40.9
1985	2378	2383	440	0	570	3393	947	38.7
1986	2446	2383	440	0	570	3393	947	38.7
1987	2516	2383	440	0	570	3393	877	34.9
1988	2588	2383	440	0	570	3393	805	31.1
1989	2662	2383	440	150	236	3209	547	20.5
1990	2738	2383	440	250	236	3309	571	20.9

[a]Adjusted for conservation measures
[b]Imports to the SDG&E system
[c]Reserve margin equals total resources minus peak load
[d]Percent reserve equals reserve margin divided by peakload

*This table is based on load forecasts adopted by the CEC (1979a) and estimates of energy resources made by staff of the ERA.

Firm transfers account for 247 MW in 1980 and up to 570 by 1985. In 1989, firm transfers are reduced to 236 MW. Total resources range from 2630 MW in 1980, to 3393 by 1985. In 1989, total resources are reduced to 3209 MW, resulting from a reduction of firm transfers. The reserve margin is 544 MW in 1980, or 26.1 percent, and it increases to 1004 MW, or 44.6 percent in 1983. By 1990, the reserve margin is expected to be 571 MW, or 20.9 percent.

The adopted CEC load forecast is significantly lower than the forecast prepared by SDG&E. The lower CEC forecast results in a larger reserve margin than that projected by SDG&E. It is a common practice within the utility industry to plan for a reserve margin in the 15-25 percent range. The CEC (CEC, 1979b) recognizes SDG&E's need for a significantly larger reserve margin than other major utilities for the following reasons:

1. SDG&E is an all thermal-electric system. (Forced outage rates for thermal units are significantly greater than for hydro units.)

2. Like other California utilities, SDG&E is a summer peaking system; however unlike other utilities, SDG&E's winter peak is a significant percentage of the summer peak, which has an effect upon maintenance scheduling.

3. The capacity of several of SDG&E's generation units is large in comparison to their peak demand and therefore outage of a single unit can significantly reduce the total generating capacity within the system.

4. Interconnection to other California utilities is minimal, providing a power import capability that is less than 10 percent of the peak load.

The applicant's proposed interconnection will not increase nor otherwise affect the reserve margin unless a purchase agreement is executed between SDG&E and CFE-BCN. It is possible that at some future date SDG&E may enter into an agreement for purchase of surplus power from CFE that could increase the SDG&E reserve margin. Despite the presently projected lack of increase in reserve margin, there is likely to be increased system reliability if the SDG&E and CFE-BCN are interconnected and operated on a synchronous basis. This reliability gain is achieved through an increase in overall system size, and the fact that a single outage will have less impact on the combined system than it would on the individual system.

C. TECHNICAL STUDIES

A number of electric power system technical studies were conducted to satisfy the federal statutory requirement that an electric power export not "impair the sufficiency of electric supply in the United States or tend to impede the coordination in the public interest of facilities subject to the jurisdiction of the Department." These studies were conducted under the direction of the Chief, System Reliability and Emergency Response Branch of the Economic Regulatory Administration. Certain of the studies were accomplished jointly by the applicant and Mexico's Comision Federal de

Electricidad. Others were the product of the Economic Regulatory Administration's San Francisco Power Supply and Reliability Field Office. Basic data for all of these studies were furnished by the applicant and have been verified or validated by the technical staff of the Economic Regulatory Administration. All information received is in the public docket file.

By letter of October 22, 1979, the applicant was requested to perform power system load flow studies such that expected normal transmission line loading could be determined with and without the proposed interconnection for 1982 heavy and light load conditions. The applicant working jointly with Mexico's Comision Federal de Electricidad conducted the requested studies and submitted them in November of 1979. A detailed evaluation of the submitted data by qualified power system engineers revealed it to be both accurate and comprehensive. An electric power flow to Mexico of 125 MW could occur with no facilities being overloaded, and with voltage levels remaining within the established operating-practice requirements. Exports to Mexico were only limited by the available generating capacity of the San Diego Gas and Electric system. Since no export of firm power has been requested, this situation will be included as a permit condition such that the applicant will not export any electric power unless the loads of his U.S. customers are fully supplied and the appropriate operating reserve criteria are satisfied.

Following the review of the power flow studies, the applicant was requested to conduct five power system stability studies. Electric power system stability is that characteristic of a power system that ensures that it will remain in operating equilibrium through normal and abnormal conditions such as line faults or outages. The studies requested all specified a 125 MW power export to Mexico. The requested studies were received on March 14, 1980. Following a detailed review by the technical staff, it was determined that the requested studies had been accomplished in an accurate and thorough manner. In all cases the system remained stable following the designated initiating event. There were indications of some very temporary power system voltage and frequency problems which were corrected within 5 seconds.

Frequency excursions ranged from 0.14 hertz to 0.5 hertz prior to re-establishment of the system equilibrium state. From this data (which included "stuck breaker" situations), it is our conclusion that the proposed 230 kV Miguel to Tijuana line will pose no threat to electric power system adequacy or to system stability on the applicant's system or to any other utility system.

In addition to the power system technical studies, the staff of the Economic Regulatory Administration prepared and conducted several production cost studies. These studies were accomplished to determine the electricity exchanges and other benefits that may result from this project. Production cost studies were first done with the Mexican system and the applicant's system operating within the boundaries of a single area. Subsequently, multi-area studies were performed so that transmission limitations between

California and Mexico could be recognized. All of these production cost models were done using the PROMOD computer program. The outputs of this program are production costs, fuel use, and a reliability index using loss of load probability.

A significant amount of input data must be accumulated to perform production cost studies. Since the applicant had previously prepared base models for the participating utility systems, these were used as the starting point for this evaluation. Data validation, updating, and appropriate modification were made leading to a number of resultant scenarios. The time period for these studies was 1982-1990.

It is likely that oil costs to the Mexican utility would be less than in the United States due to Mexico's current oil reserves and their world exporting policies. For this reason the production costs were first determined with oil costs in Mexico equal to oil costs in the United States, then costs were determined with the Mexican utility purchasing oil at 10 and 20 percent below the applicant's cost. In all of these scenarios there was significant electricity import by the applicant. These imports average 230,000 megawatt-hours per year in the equal oil price situation and 780,000 megawatt-hours per year with a 10 percent oil price differential. A 20 percent differential resulted in a 1,042,000 megawatt-hour import. Oil saving on the applicant's system ranged from 480,000 to 1,800,000 barrels per year.

Economic savings to the combined systems were $20.2 million with no oil price differential. These savings were $22.1 million and $28.8 million for the 10 and 20 percent oil price differentials.

The output of the production cost studies indicated that the Bulk Power System reliability of the applicant's system will be improved by the proposed interconnection. This will occur despite the absence of a contract for firm power deliveries. The availability of excess capacity during off-peak hours, and on-peak load diversity are the primary reasons for this reliability improvement. Likewise the reliability of the Mexican utility's Baja California system is improved.

In conclusion the technical studies have not shown any significant power system problem or other impediment to utility system coordination if the proposed 230 kV line between Miguel substation in California and Tijuana substation in Mexico is constructed. The applicant's data have been very complete and the studies done were appropriate.

SECTION II. ALTERNATIVES INCLUDING THE PROPOSED ACTION

INTRODUCTION

The following sections describe the environmental consequences of the proposed project and four alternatives, which include no action, conservation of electricity, purchased power from U.S. sources, and additional generating capacity. The alternatives to the project were jointly selected by staff from the ERA and CPUC. These particular alternatives (except the no action alternative) were selected because they could conceivably satisfy the purpose of the proposed project.

A. NO ACTION

The "No Action" alternative is the denial by ERA of San Diego Gas and Electric's application for a Presidential Permit, or the California Public Utilities Commission's disapproval of the project. The no action alternative would eliminate construction of the transmission line and any concurrent visual impacts, as well as potential impacts to cultural resources and rare and endangered plant species. The proposed transmission line would present an additional obstacle for the U.S. Border Patrol aircraft to avoid during their frequent surveys of the project area. Under the no action alternative this obstacle would not be present.

The no action alternative would eliminate an opportunity to reduce fuel consumption by SDG&E's oil- and gas-fired generators. If the SDG&E and CFE systems are interconnected and economically dispatched as one system, efficiency increases will provide an opportunity to reduce the fuel consumption. Increased efficiency would have a net effect of reducing oil and gas use for SDG&E with corresponding reductions of air pollution emissions. The potential amount of reduced oil and gas consumption has not been determined. The no action alternative would preclude the efficiency and reliability increases.

B. CONSERVATION OF ELECTRICITY

The conservation alternative consists of reducing use of electrical power through various conservation measures. Some of the conservation measures include installing insulation, weather stripping, conservation lighting, water heater insulation, attic ventilation, solar shade screens, and energy efficient appliances; setting back thermostats, and cogeneration.* Many of these conservation measures apply to both electrical conservation and natural gas conservation depending upon the type of heating system in a given building. The extent of potential conservation has not been determined. However, conservation would have to be implemented in addition to existing and future conservation measures that are projected by

*Cogeneration is any one of several processes which either use power plant waste heat to satisfy industrial heat needs or use industrial waste heat in the steam generation of electricity. Thus, existing waste heat is used for either electric generation or heating.

the CEC. The CEC assumes conservation that can reasonably be expected to occur. This conservation is approximately 15% in 1985 and 20% in 1990 (Jaske, 1980).

The conservation alternative is not known to have any direct adverse environmental consequences, although manufacturing of many conservation devices such as insulation, weather stripping, and solar shade screens utilizes petroleum products and nonrenewable resources.

This alternative does not allow enhancement of reliability and economic exchanges of energy.

C. PURCHASE OF POWER FROM U.S. SOURCES

The alternative of purchasing power from other U.S. sources can have a wide range of environmental consequences depending upon the location and type of generation. SDG&E currently purchases "firm" power from the Washington Water Power Company and Tucson Electric Power Company via its 230 kV interconnection with Southern California Edison Company at the San Onofre nuclear power plant. Maximum loading capacity of this line, which extends from San Onofre to SDG&E's Mission Substation, is approximately 390 MW. SDG&E also utilizes this line to transmit its share of San Onofre power output. Upon completion of new generating units at that plant, this transmission line will be fully loaded. Additional transfers of power to SDG&E will probably come from other utilities in the southwest (e.g., Arizona and New Mexico). Transmission lines will have to be built to transmit power from other states. Any purchase would involve generation from one or more of the following types of plants: oil or gas fired, geothermal, coal fired, nuclear, or hydroelectric. The operation of each of these type of plants has some adverse environmental consequences. Oil, gas, and coal plants use nonrenewable resources and generate air pollution emissions while a nuclear plant generates nuclear wastes. It is not possible to quantify the adverse environmental consequences associated with the purchase of power from other U.S. sources since the combination of generation types and locations is unknown.

Implementation of a power purchase from a U.S. source instead of the proposed project would also have some of the same consequences as the no action alternative described previously, assuming that no other transmission lines would be built.

D. ADDITIONAL GENERATING CAPACITY

The alternative of additional generating capacity involves construction of a new power plant to supply additional power to the SDG&E grid system during the early 1980's. Additional generating capacity can theoretically be supplied by a variety of types of generation units including nuclear, coal fired, oil or gas steam-electric, gas-turbine, geothermal, hydroelectric, and possibly others such as solar, wind, or biomass generation. However, under existing restrictions and conditions and within a two- or three-year time frame, geothermal and gas turbine power generation

are the only realistic possibilities. Coal-fired plants have a lead time of 8 to 10 years, nuclear plants have a 10- to 12-year lead time, and a hydroelectric plant would require a minimum of five years, and most likely much longer. Construction of oil-fired plants is prohibited by Section 201 of the Power Plant and Industrial Fuel Use Act. Large solar and wind generation facilities are still in the research and development stages, and lead times for these are uncertain. The use of solar energy to produce electricity is still under research and development. A 10-MW solar power plant using a central-receiver design, for example, is now being constructed near Barstow, California to test this concept. Large wind turbines, greater than 100 kilowatts, suitable for use in utility transmission systems are also under development. Before such turbines can be successfully implemented, their reliability must be proven. Biomass generation would require development of a fuel source as a first step and this together with lead time required for approval and construction of the plant would exceed the time frame of the early 1980's. The generic impacts of geothermal power production in the Imperial Valley, and a combustion turbine are described below.

1. Geothermal Power Production

The geothermal resources of the Imperial Valley have the potential of supporting the production of 6760 MW for 30 years (Muffler, 1979). Electricity can be generated from flashed-steam or binary fluid facilities. There are several potential environmental impacts associated with the future operation of geothermal facilities in the Valley. First of all, the extraction of large volumes of geothermal fluids from a geothermal reservoir could result in land subsidence. Changes in the slope of the land surface would interfere with the irrigation of agricultural lands. This is an important concern since agriculture is the primary industry in the Imperial Valley. Until operational experience has been gained with a geothermal facility the severity of subsidence will probably not be known since models are not available to accurately predict changes in land subsidence. A second potential impact is air quality degradation resulting from the emission of hydrogen sulfide. Control technologies for hydrogen sulfide are available; however, they are not completely perfected (Snoeberger and Hill, 1978). Binary power plants would not emit hydrogen sulfide because geothermal fluids are kept under pressure, and noncondensable gases are not released. Other environmental concerns associated with the operation of a geothermal facility in the Imperial Valley include induced seismicity resulting from subsurface injection of residual geothermal fluids (Crow and Kasameyer, 1978); increased salinity of the Salton Sea from withdrawals of agricultural waste water for power plant cooling (Layton, 1978); accidental releases of geothermal fluids onto irrigated lands (Shinn et al., 1979); and the disposal of solid wastes derived primarily from the pretreatment of spent geothermal fluids before they are injected into a reservoir. In addition to the above environmental concerns, transmission lines will have to be constructed to transmit power generated at a geothermal facility. These lines will also have environmental impacts.

2. Gas Turbine for Peaking Power

Section 212 (g) of the Power Plant and Industrial Fuel Use Act establishes an exemption for gas-fired facilities if they are used solely for peaking power and if operation of a facility using coal or other alternate fuel would violate national air quality standards. Under these conditions a gas turbine plant could conceivably be constructed by SDG&E in the greater San Diego region. The environmental consequences of constructing and operating a gas turbine facility include generation of air pollution emissions; consumption of gas, a nonrenewable resource; and various land use impacts. The land use impacts are to the 25 to 50 acres or more used for the plant site, and to the land required for the transmission line connecting the plant to the SDG&E grid if the plant is remote from it.

E. TRANSMISSION LINE INTERCONNECTING SDG&E WITH CFE

1. Upgrading Existing Transmission Line

Joint feasibility studies conducted by SDG&E and CFE resulted in the selection of the Tijuana Substation and the Miguel Substation as the two most suitable termination points for the interconnections between the two systems (WESTEC Services, Inc., 1979). These termination points are desirable since they are both currently operational and since they have high voltage transmission capability (Miguel Substation has 138 kV and Tijuana Substation has 230 kV).

There is presently a transmission line extending between SDG&E and CFE systems as shown in Figure 2-1. This line consists of a 138 kV segment between Miguel Substation and the Otay Substation and two 69 kV segments between Otay substation and San Ysidro Substation. One of these 69 kV lines extends south into Mexico terminating at the Frontera Substation, located just to the east of the international border crossing. Upgrading this existing transmission line would consist of constructing a 230 kV line along the existing route.

The Frontera Substation does not have capability for 230 kV, nor is 230 kV capability planned for this substation. Rather, CFE plans to eliminate the Frontera Substation. Providing 230 kV capability to Frontera would require construction of a 230 kV transmission line from the Tijuana Substation across the urbanized sector of Tijuana. Construction of such a transmission line on the north side of the international border is restricted by safety hazard and height limitations surrounding Brown Field and the Tijuana Airport.

Construction of a 230 kV transmission line along the existing route between Miguel Substation and Frontera Substation would impact the urbanized portions of Chula Vista and the San Ysidro section of the City of San Diego. These impacts include visual intrusion and television and radio interference in those areas immediately adjacent to the transmission line. Studies have not been done to determine the distance that television and radio interference would extend. Right-of-way acquisition through this urbanized area would necessitate displacements of residents. The existing right-of-way width varies from 0 to 250 feet.

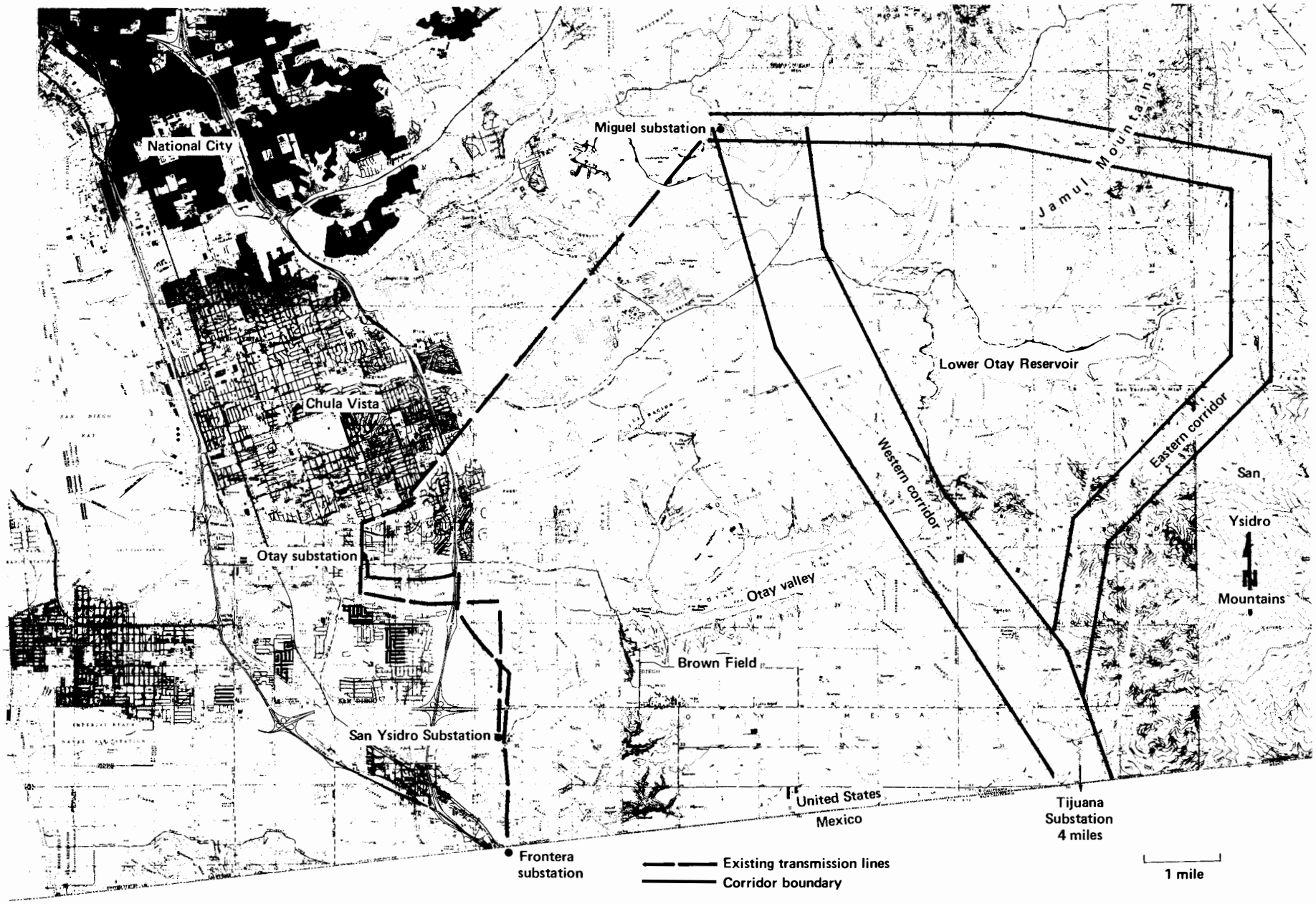

Figure 2-1. The existing transmission lines extend from Miguel Substation on the north through the Otay and San Ysidro Substation to the Frontera Substation in Mexico. These existing transmission lines pass through urbanized sections of Chula Vista and the San Ysidro area of the City of San Diego. Eastern and western corridors lie to the east and west of Lower Otay Reservoir. Both eastern and western corridors terminate at the International Border 3 miles north of the Tijuana Substation.

2. Alternative Corridors

There are two principal corridors between the Miguel Substation and the Tijuana Substation, one lying to the east of the Lower Otay Reservoir, and one lying to the west of the reservoir as shown on Figure 2-1. Since Lower Otay Reservoir is a well-utilized recreation area (340,000 visitors annually), and since crossing the reservoir would have a severe visual impact, the reservoir area was eliminated from further consideration as a possible corridor. Approximately one and one half miles to the east of the reservoir there is land under Bureau of Land Management control that has been designated as a Wilderness Study Area (refer to Figure 2-2). This designated land extends north from the border approximately six miles. Construction of a transmission line across the Wilderness Study Area would damage the wilderness character of the area and is prohibited by the Bureau of Land Management (U.S. Bureau of Land Management, 1979a). Thus, this Wilderness Study Area represents the eastern limit for a transmission corridor.

The western limit for a transmission corridor is formed by Brown Field Airport, located about 3 miles to the southwest of Lower Otay Reservoir. Therefore, because of Lower Otay Reservoir and the eastern and western constraints, there are two principal corridors between Miguel Substation and the Mexican border as shown on Figure 2-1.

The specific constraints that lie within the eastern and western corridors are described below.

(a) Eastern Corridor Area

The primary constraint in the eastern corridor area is the Bureau of Land Management Wilderness Study Area. Construction of a transmission line is prohibited on land designated as Wilderness Study Area. The BLM Wilderness Study Area extends nearly to Lower Otay Reservoir, and the transmission line would have to pass over very steep terrain next to the reservoir to avoid crossing the Wilderness Study Area.

Construction of a transmission line through the eastern corridor would result in visual impacts to the Proctor Valley, and to the Upper and Lower Otay Reservoirs. These impacts result from the topography of the area which generally slopes down to the reservoirs, yielding a view of the slopes from vantage points near the reservoirs. This visual impact would be experienced by the 340,000 annual visitors to Lower Otay Reservoir Park. In addition to the transmission line and towers, visual impacts will also result from grading for access roads and tower sites necessitated by the relatively steep terrain within much of the eastern corridor. Grading in this steep terrain could create erosion.

Transmission line construction through the eastern corridor would also impact relatively undisturbed vegetation and wildlife habitat.

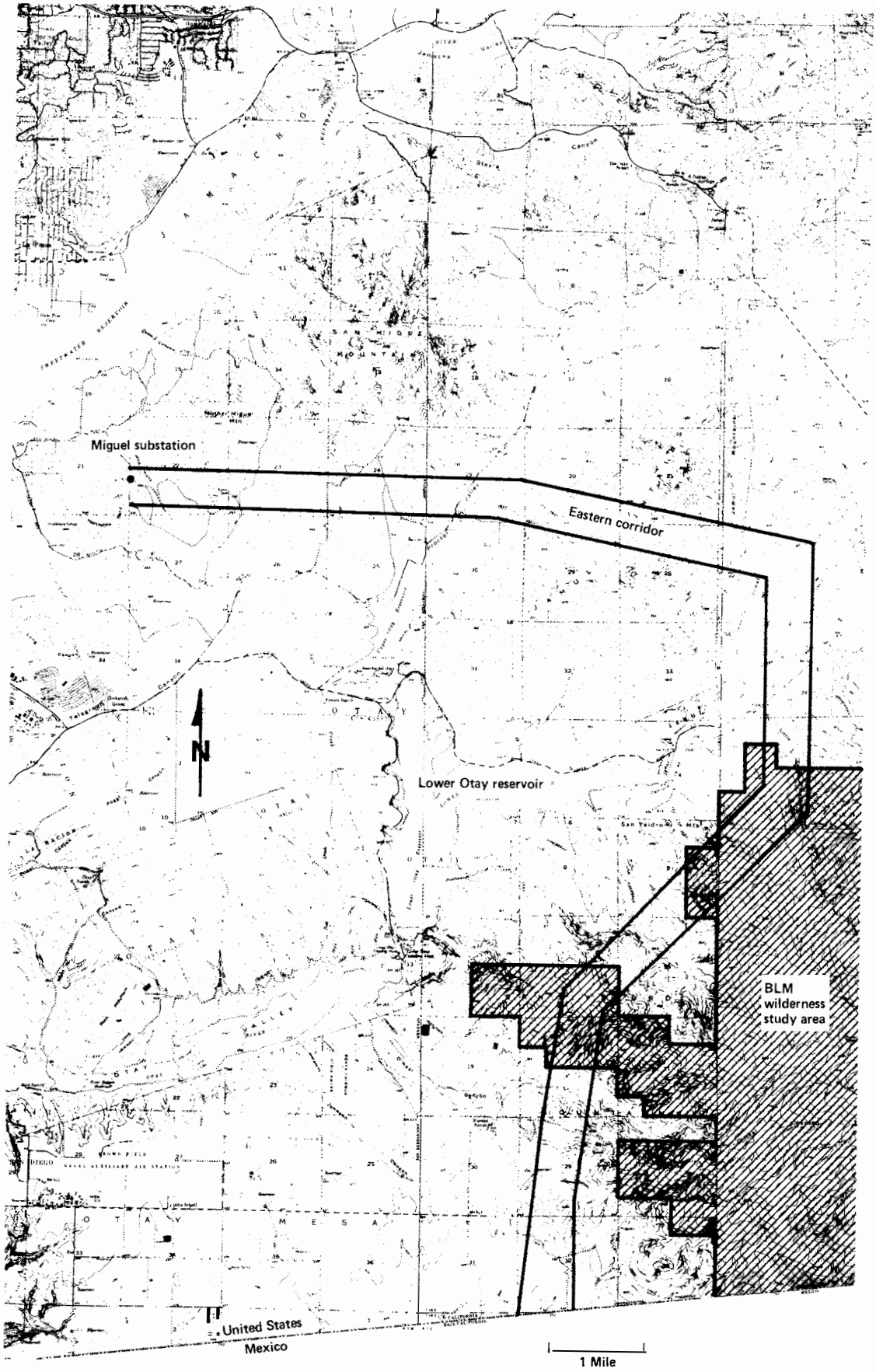

Figure 2-2 The eastern corridor extends easterly from Miguel Substation crossing the Jamul Mountains where it turns south passing to the east of Lower Otay Reservoir and crossing the San Ysidro Mountains. The eastern corridor extends across a Bureau of Land Management Wilderness Study Area. Transmission line construction is prohibited in Wilderness Study Areas.

(b) Western Corridor Area

The western corridor is shown in Figure 2-3 extending from the Miguel Substation area in a southeasterly direction passing to the west of Lower Otay Reservoir, crossing Otay Valley and the extreme eastern edge of Otay Mesa. A substantial portion of the western corridor area is presently used for agriculture, or has been so used in the past. Much of the gently rolling area between Proctor Valley Road and Otay Valley has been used for field crops and grazing. The Otay Mesa south of Otay Valley has been used for the cultivation of row crops. The transmission line would impact agricultural uses by eliminating a maximum of 5 acres from production. The transmission line creates an obstacle to aircraft spraying or crop dusting, and the towers must be avoided by tractors during plowing and cultivation.

Although much of the western corridor has been disturbed by agriculture, there are vernal pools, a unique habitat known to support endangered plant species such as San Diego mesa mint (Pogogyne abramsii). Other rare and endangered plant species reported in the western corridor are San Diego Coyote Thistle (Eryngium aristulatum var. Parishii) and Otay tarplant (Hemizonia conjugens). Construction of the transmission line in the western corridor could potentially impact these rare and endangered plants. However, these impacts can be avoided by construction and design methods. Several archaeological sites have been reported within the western corridor. In addition there is a potential for historic, ethnic (Indian) and paleontological resources. Impacts to the cultural resources from transmission line construction and maintenance can be avoided in most or all cases. If impacts to some resources are unavoidable, mitigation procedures such as preservation, or recovery and curation are available to reduce impacts.

Construction of the transmission line in the western corridor would have visual impacts in the vicinity of Proctor Valley Road and Otay Lakes Road. The section of the transmission line (about 3/4 of a mile) that spans Otay Valley would be visible from a few locations in Lower Otay Reservoir Park. At the southern end of the western corridor, the transmission line could be seen against the foot of the San Ysidro Mountains.

FAA height restrictions surrounding Brown Field Airport represent a constraint to transmission line construction as shown in Figure 2-3. The western corridor lies just to the east of these height restrictions.

The U.S. Border Patrol and the U.S. Customs Service fly over the entire area south of the Lower Otay Reservoir several times daily. Since heavy brush cover obscures observation, Border Patrol planes fly within 25 feet of the ground, particularly in canyon areas where vegetation is heaviest. Construction of a transmission line through this area, therefore, would create an additional obstacle for pilots. The areas of highest constraint are the Otay Valley, O'Neal Canyon and Johnson Canyon areas, where planes would have to avoid towers and lines.

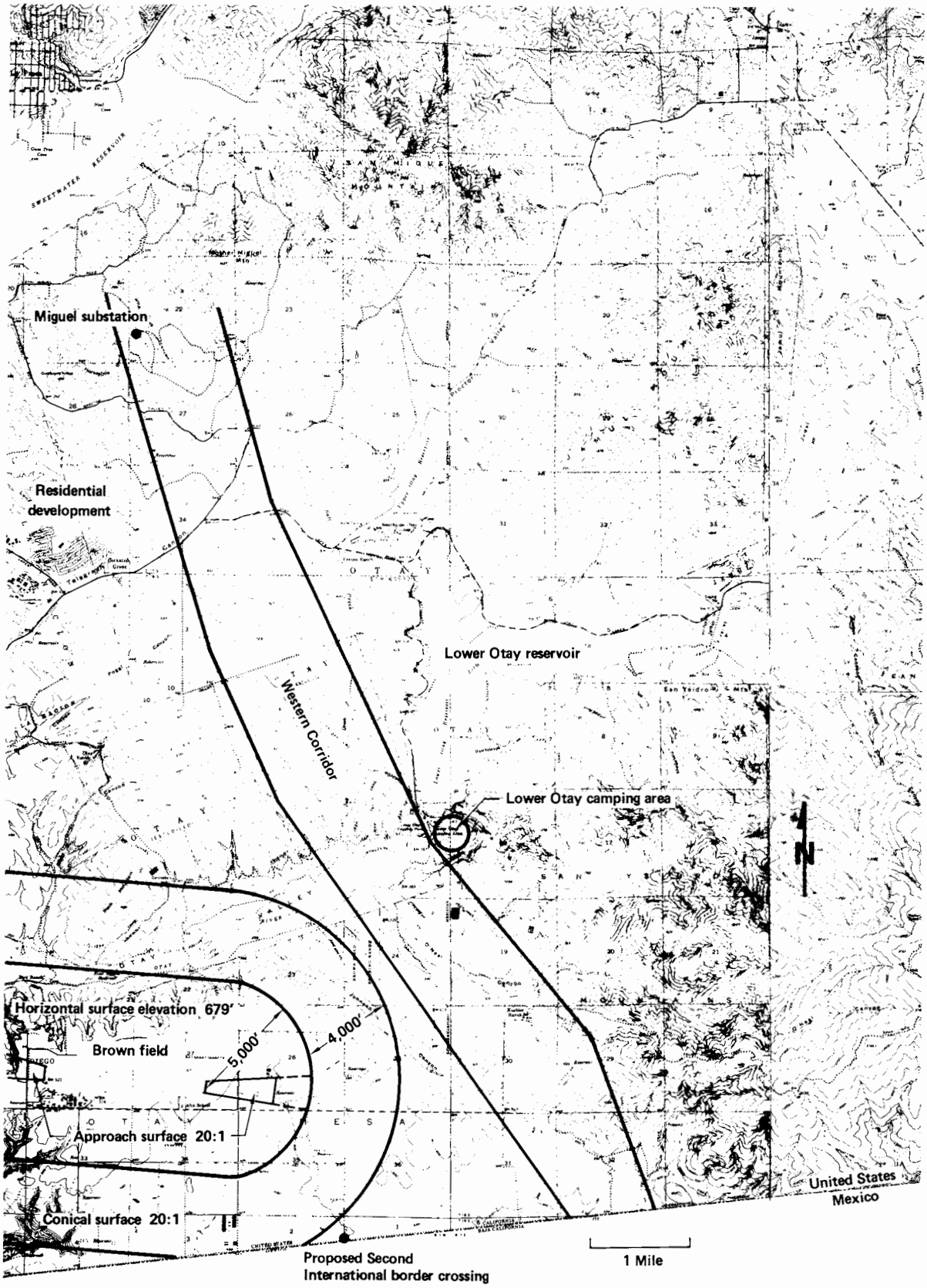

Figure 2-3. The western corridor extends to the southeast from Miguel Substation, passing across Otay Valley to the west of Lower Otay Reservoir and along the eastern edge of Otay Mesa. Lower Otay camping area is located along the eastern edge of the corridor at the southern tip of Lower Otay Reservoir. Residential development is located to the west of the corridor along Telegraph Canyon Road. Brown Field is also located to the west of the corridor and south of Otay Valley. Height restrictions surrounding Brown Field extend 9000 feet from the runway. There is a 5000-foot horizontal surface and a 4000-foot conical surface.

The State of California is studying a parcel of land for a possible prison site, which is located partially in the western corridor to the south of O'Neal Canyon. Transmission line impacts to a prison facility (if it were constructed) could be avoided by locating the line to the east of the prison site.

3. Proposed Project

(a) Corridor and Route Description

The proposed route lies within a corridor that ranges in width from 4000 to 7000 feet and is about 10 miles long. Within this corridor, San Diego Gas and Electric's proposed route is shown on Figure 2-4. The route extends from Miguel Substation in a southeasterly direction to Proctor Valley Road, where it turns due south, crossing Telegraph Canyon Road to the point where it intersects the Second San Diego Aqueduct. Here, the route runs along the aqueduct right-of-way until it reaches Salt Creek Canyon at which point it turns in a more southerly direction crossing Otay Valley about 2000 feet west of the Lower Otay Filtration Plant. From this point south to the international border, the route generally follows the base of the foothills at the transition between Otay Mesa and the San Ysidro Mountains.

(b) Project Characteristics

The proposed right-of-way is 120 feet wide as shown on Figure 2-5 and the structures proposed are steel lattice towers, also illustrated on Figure 2-5. A 126- to 128-foot tall tower will be used in tangent and angle locations, while 135-foot tall towers will be constructed at dead-ends and strains. All tower placement will involve new construction, since no towers are presently located within the subject area. Specifications of the transmission line and towers are given in Table II-1.

Connection of the transmission line to the Miguel Substation would require installation of an additional transformer, circuit breakers, busbar and switches. All of this equipment will be installed in unoccupied space within the Miguel Substation.

(c) Construction Methods

A description of the construction methods has been adapted from the proponent's Environmental Assessment (WESTEC Services, Inc., 1979) and is presented below:

Specific work activities involved in the project include the following:

1. Excavation and placement of footings for lattice towers.

2. Hauling, assembly, and erection of towers.

3. Hauling and installation of conductor and overhead groundwire assemblies.

4. Conductor stringing operations.

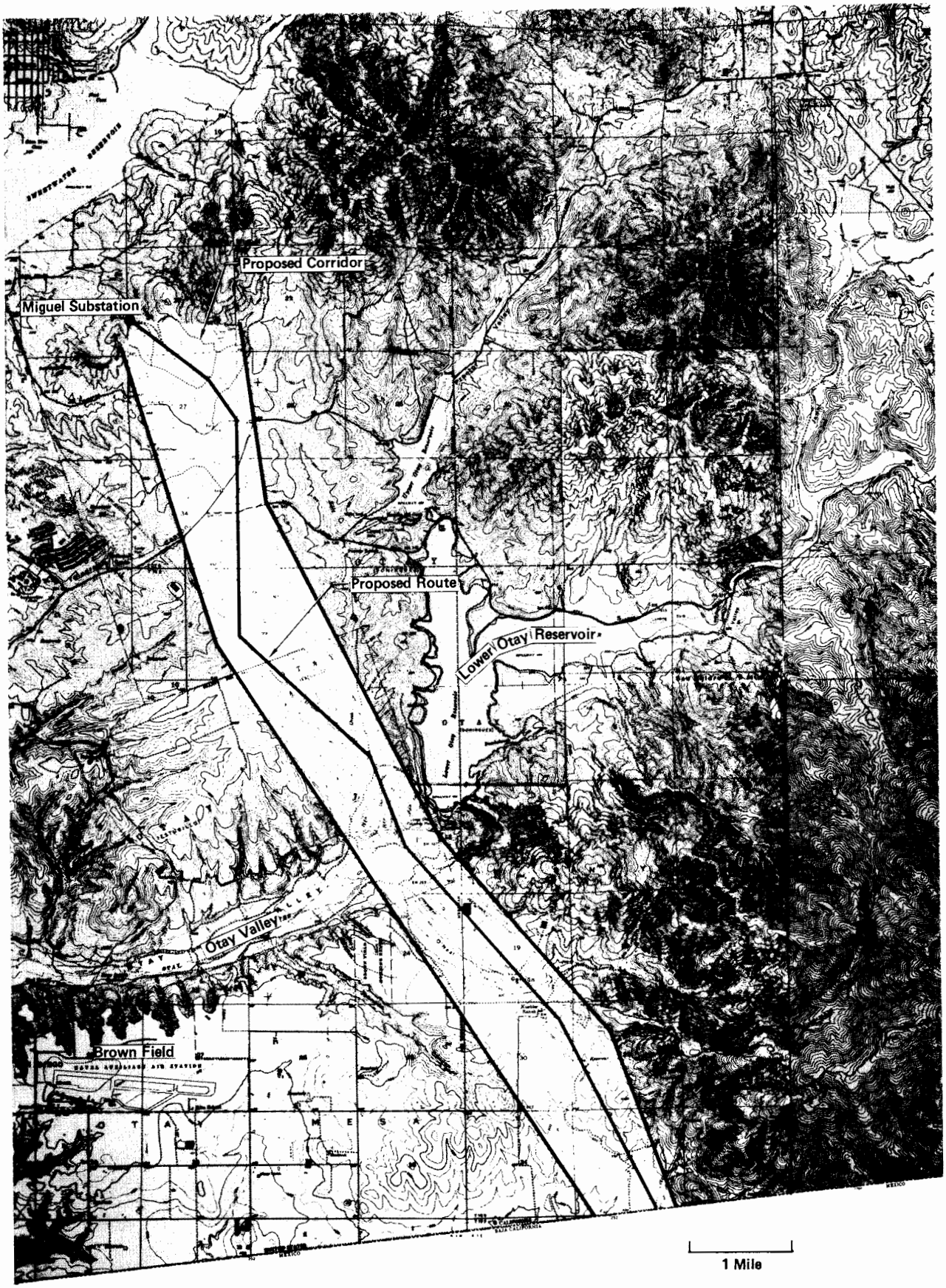

Figure 2-4. The proposed corridor (western corridor) extends from Miguel Substation in a southeasterly direction to the International Border. The Proposed Route location is shown within the Proposed Corridor.

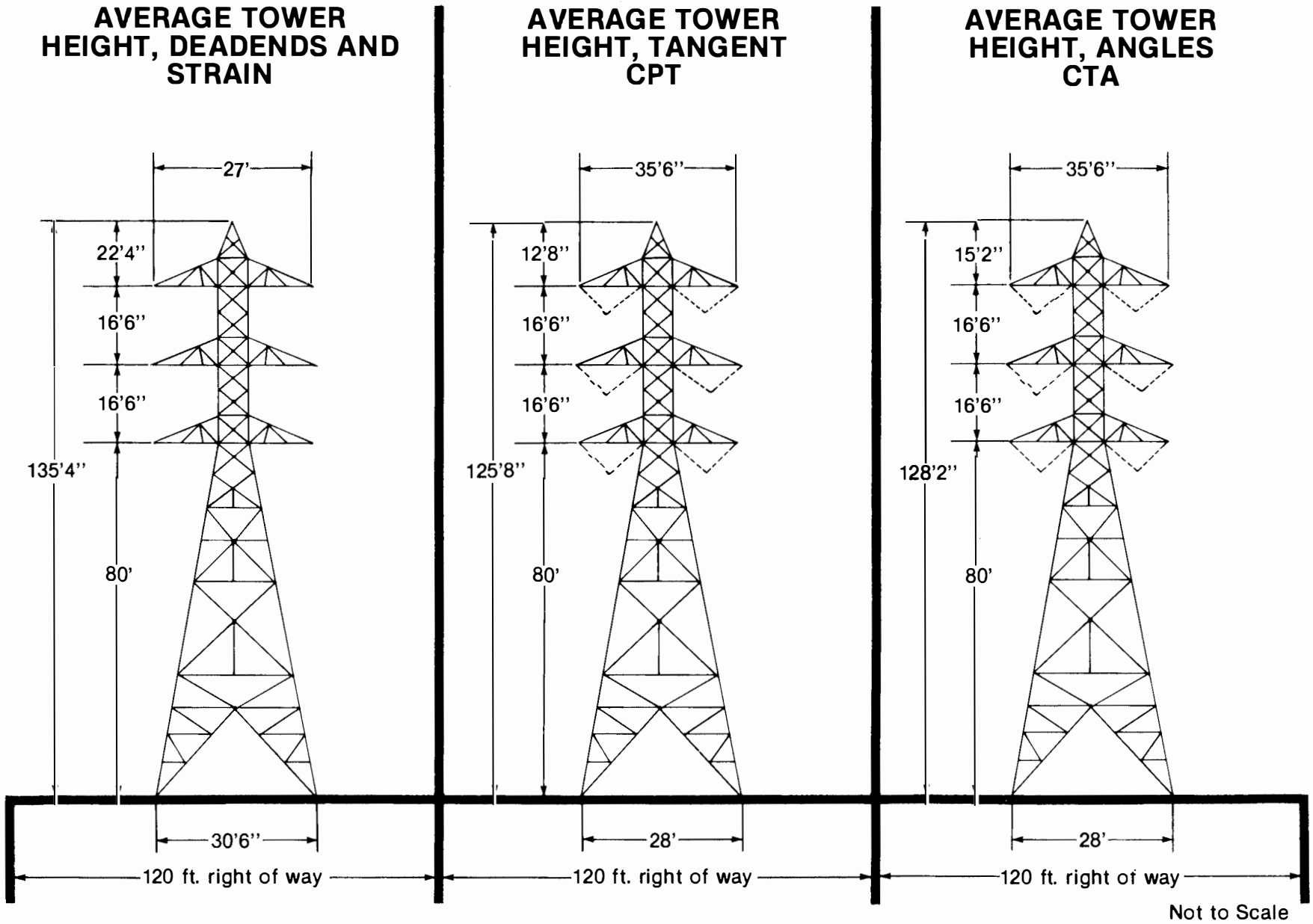

Figure 2-5. The applicant's proposed lattice tower design for deadends, strains, tangents (CPT) and angles (CTA) are shown within a 120 foot wide right of way.

TABLE II-1

MIGUEL-TIJUANA 230kV LINE DATA

SPECIFICATIONS	
Length of Line	10 miles
Span Length	1175 feet, average
Structures	Steel lattice
Heights of Structures	80 feet, average at lowest arm 125-136 feet at top of tower
Minimum Ground Clearance of Conductor	30 feet
Conductor Type	Aluminum core, steel reinforced
Conductor Size	1033.5 kilo-circular-mils
Configuration	3-phase vertical
Capacity	1030 amperes
Voltage	230,000 volts

The location and number of tower sites and location of access roads will not be determined with certainty until surveying and engineering studies of the right-of-way have been completed. However, it is known that there will be approximately 45 towers. The tower sites will be located near existing access roads or in locations where access can be provided with minimal difficulty, wherever possible. The individual steps involved in installation of the line, from surveying to construction, are described below.

(1) Survey Activities

The initial survey for the transmission line will be conducted and aerial photos taken for topographic and profile drawings to locate potential tower sites. An archaeological, biological, and paleontological survey of the route will be conducted so that access roads and tower locations can be chosen to avoid impacting these resources, or mitigations will be provided if avoidance is not feasible.

(2) Access Road Construction

Access roads will be located within the transmission line right-of-way where possible although rough or steep terrain may necessitate some roads outside of the right-of-way. Existing roads and closed areas will be used where possible and any roads not required after construction will be closed. These roads will be restored as nearly as possible to their original condition. The roads will be designed to accommodate large and small trucks, cranes, concrete mixers, reel trailers, and stringing equipment. The minimum radius of curvature will be 100 feet in open curves and 120 feet on blind curves. The maximum road grade will be approximately 10 percent. The grade may be increased to eliminate steep side hill cuts and numerous switchbacks. In the event the grade is increased to 15 percent, the length of these access roads should not extend more than 500 feet. The road width will be the minimum required to accommodate the size of the particular equipment needed during construction and maintenance. The estimated road width will be a minimum of 10 feet and a maximum of 25 feet. Prior to any clearing for access roads, SDG&E will review with the landowner all proposed construction road locations, areas to be cleared for towers, and areas to be cleared for pulling sites. Clearing will be minimized and will be accomplished with the use of a bulldozer. Blading will occur only as necessary to provide a road sufficiently clear of brush and rock, to allow the movement of construction vehicles. Cuts will only be made where necessary to reduce slopes and grades to acceptable levels. Dust control procedures will be applied where necessary.

Roads crossing streams and washes will be constructed to cross as nearly as possible at right angles. No culverts will be required where the stream is crossed at gradient, and no soil will be pushed into stream beds. Ditches will be constructed where necessary to dispose of accumulated water. When ditches are required, they will be constructed to route the water into established stream channels or under the road by means of a culvert. Where culverts must be installed, they will be sufficient in strength to withstand the weight of the construction equipment. All construction will be such as to minimize erosion.

(3) Clearing Right-of-Ways

The transmission right-of-way will be cleared only as required to facilitate surveying, road building, assembly and erection of structures, installation of conductors, and to provide adequate electrical clearances to energized lines. Shrubs and vegetation will be cleared only when necessary to accomplish these objectives.

A minimum of right-of-way clearing for electrical clearance will be required for this project. All vegetation that is within 17 feet of the conductor will be cleared. Any vegetation tall enough to present a danger to the line if overturned also will be cleared; however, very little, if any, vegetation of such height exists along the project route. In addition, pulling sites must be cleared sufficiently to allow for the setup of large reel trailers and pulling equipment.

For the limited amount of right-of-way clearing that will be required, hand crews with power saws will be able to remove vegetation to provide adequate electrical clearances. It is not anticipated that any vegetation outside the right-of-way will be removed unless it will interfere with the construction activities.

(4) Tower Site Clearing and Grubbing

Generally, the tower will be delivered in bundles to the site, assembled on the ground from steel members and lifted into position. In order to allow space for a tower, for the completed tower foundations and for necessary crane maneuvers, a work area of approximately 200 feet by 200 feet will be required. Within this area, leveling will be restricted to the crane pad area. Although the crane's outriggers can be leveled to compensate for vertical changes of up to two feet, ground surface leveling at some sites will be necessary. Surface disturbance will be restricted to crane pad leveling, except in rock areas and where cuts and fills will be necessary for foundation installation. The work area will be cleared of vegetation only to the extent it is necessary.

Bulldozers will be used for clearing; however, in exceptionally even terrain, rubber-tired road graders can be utilized.

(5) Foundation Installation

The foundation installation will vary with the local geology. The following discussion of self-supporting towers is representative of most foundation installation procedures.

Generally, excavations will be conducted for belled pile foundations. These will require use of a large drilling rig to auger the holes, a boom truck to transport and handle safety shells, and a four-wheel-drive pick-up truck. In addition to equipment operators, each crew will probably consist of a foreman and two laborers. The time required for excavation of each tower foundation will vary from one day to a week or more, depending on soil conditions.

Material removed for the foundation will be used to level the site, and remaining excavation material will be spread over the cleared area. Generally, fine grading will be accomplished by an operator and a laborer with a small, front-end loader.

Footing installations usually will require the use of a number of concrete trucks, a boom truck for reinforcing bars and stub angles, two four-wheel-drive pick-up trucks, a welding machine, an air compressor, and possibly, a bulldozer to assist concrete trucks in traversing access road grades.

(6) Tower Assembly and Erection

The self-supporting tower parts will be shipped by truck directly to the tower site and will be assembled there. However, towers may require an assembly area, at least partly cleared, on or near each tower site. A small crane or boom truck will be required for tower assembly. An assembly crew of four to six persons will be involved.

Erection of assembled towers will require a large crane (from 35-to 100-ton capacity) and will require a crew of four to ten persons.

(7) Conductor Installation

The installation of conductors and shield wires will commence after a suitable number of structures have been erected. Pulleys will be installed at the conductor or shield wire position in each structure and helicopters may be used in some locations to string a pulling rope. This rope will then be used to pull in a steel pulling line which, eventually, will pull in the conductor itself by means of heavy pulling and tensioning equipment. Setup areas, in addition to the tower erection and footing sites, will be required for this equipment at approximately 3-mile intervals and at corners and major angle points in the line.

Setup areas for this equipment will vary in size depending on terrain. Basically, sufficient clearance is necessary to set up a reel trailer (comparable to a large semi-rig) and the pulling and tensioning equipment. Areas will be cleared to provide access by a large truck-trailer rig to remove obstructions to conductor stringing and to allow movement of vehicles. Leveling will be required in severe cases but will be kept to a minimum.

Basic equipment will include a reel trailer, conductor tensioner and puller, a bulldozer, and various radio-equipped small vehicles.

This operation will require installation of temporary wood guards over highways, utility lines and other obstructions. These guard structures will be removed after construction.

(8) Counterpoise Installation

If the tower construction does not produce a value of footing resistance that will give acceptable line performance during lightning storms, then ground rods connected to the tower steep will be used. When resistance measurements indicate that ground rods are not adequate, a counterpoise will be installed by running one or more conductors from the tower grounding system for a distance that will give the proper value.

SECTION III. THE AFFECTED ENVIRONMENT

The following section describes the existing environmental conditions of the applicant's proposed corridor and the surrounding area.

A. CLIMATE

The San Diego area has a relatively mild Mediterranean-like climate (Bennett, 1974). Summers are dry, with a well-developed diurnal land-sea breeze pattern. Night and early morning fog forms regularly over the coast and often penetrates inland to the foothills. Because of this marine influence, temperatures tend to be moderate, the daily range in summer is usually from the 60s to the mid-70s.

Most precipitation occurs with the passage of westerly storm fronts in the fall and winter. Highest average rainfalls occur from November through March, with a seasonal average of about ten inches at San Diego. Mean minimum temperatures are in the 50s along the coast during these months. The highest temperatures recorded in the area are associated with occasional fall and winter Santa Ana wind conditions when interior high pressures cause off-shore air flow.

B. AIR QUALITY

Air quality in the region is quite variable, depending on local meteorological conditions. The major problem is photochemical smog caused by high levels of hydrocarbons and oxidants that may accumulate during periods of temperature inversion and air stagnation. Air quality is often quite good when land-sea air movement patterns predominate.

The San Diego Air Pollution Control District maintains air quality monitoring stations throughout the air basin. Data from the Chula Vista and Brown Field stations are most representative of the transmission line study area and are presented in Table III-1. State and federal ambient air standards for California are shown for comparison in Table III-2.

C. NOISE

There are no excessive noise sources within the transmission line study area. There are, however, two airports located to the southwest of the study area. Brown Field, a general aviation airport, lies approximately one half mile to the west on Otay Mesa, while Tijuana International Airport, a commercial facility, is located about 3000 feet to the southwest just below the international boundary. Because of the distance and the pattern of flight operations, the noise influence of neither facility significantly affects the study area. The 60 decibel (dB) Community Noise Equivalent Level (CNEL) contour of each airport does not extend as far as the proposed corridor (Comprehensive Planning Organization - San Diego Region, 1973). Overflights by light propeller-driven aircraft are heard regularly in the area. Aircraft of the U.S. Border Patrol fly daily at low altitudes over much of the southern portion of the study area. Military helicopters occasionally pass over on training missions to a site in the San Ysidro Mountains.

TABLE III-1

AMBIENT AIR QUALITY - CHULA VISTA AND BROWN FIELD STATIONS

POLLUTANT	NUMBER OF DAYS EXCEEDING STANDARDS				MAXIMUM RECORDED POLLUTANT CONCENTRATIONS			
	CHULA VISTA		BROWN FIELD*		CHULA VISTA		BROWN FIELD*	
	1978	1977	1978	1977	1978	1977	1978	1977
Oxidant[1]	51	52	9	71	---	---	---	---
Nitrogen Dioxide[1]	0	2	0	0	0.23 ppm	0.26 ppm	0.11 ppm	0.16 ppm
Hydrocarbons[2]	232	311	15	81	2.0 ppm	3.4 ppm	1.0 ppm	1.6 ppm
Carbon Monoxide[1]	0	0	0	0	8 ppm	9 ppm	2 ppm	3 ppm
Sulfur Dioxide[1]	0	0	**	**	0.07 ppm	0.09 ppm[a]	**	**
Particulates[1]	0	0	**	2	97 $\mu g/m^3$	106 $\mu g/m^3$	**	115 $\mu g/m^3$

[1] State Standard

[2] Federal Standard

[a] No monitoring July-mid-November, 1977

* Monitoring discontinued at this site, March 27, 1978

** Not Monitored

Source: San Diego Air Pollution Control District (1978)

Table III-2

AMBIENT AIR QUALITY STANDARDS APPLICABLE IN CALIFORNIA

POLLUTANT	AVERAGING TIME	CALIFORNIA STANDARDS	FEDERAL STANDARDS
Oxidant	1 Hour	0.10 ppm	0.12 ppm
Nitrogen Dioxide	1 Hour	0.25 ppm	0.05 ppm (annual average)
Hydrocarbons	3 Hours (6-9 a.m.)	---	0.24 ppm
Carbon Monoxide	1 Hour	40 ppm	35 ppm
Sulfur Dioxide	1 Hour	0.5 ppm	---
Particulates	24 Hours	100 $\mu g/m^3$	260 $\mu g/m^3$

Vehicular traffic is generally light and noise generated by automobiles and trucks is insignificant. The only paved roadway traversing the study area is Telegraph Canyon-Otay Lakes Road. Proctor Valley Road is a gravel road traversing the northern corridor area, and a system of unpaved roads serves the farming area on Otay Mesa. The Telegraph Canyon-Otay Lakes Road may carry moderate traffic loads on weekends and holidays when a large number of visitors use the recreational facilities at Lower Otay County Park. However, as of 1973, the general traffic level on both routes was so light that the 60 dB CNEL noise level generated by automobile activity did not extend beyond 50 feet from the edge of the roadway (Comprehensive Planning Organization-San Diego Region, 1973).

Machinery and trucks used in the extraction and hauling of sand and gravel can be heard during the day near the Otay Valley. Farming operations to the north and south of Otay Valley can be another source of noise.

Natural sounds and low ambient sound pressure levels are characteristic of areas in the San Miguel, Jamul, and San Ysidro Mountains to the east.

D. HYDROLOGY AND WATER QUALITY

Most of the transmission line study area drains to the south end of San Diego Bay through the Otay River (Figure 3-1). The runoff from smaller portions of the study area to the north enter San Diego Bay through Telegraph Canyon and the Sweetwater River. In the south, a small part of Otay Mesa drains to the Pacific Ocean through the Tiajuana River. Even the Otay River is essentially ephemeral, with little or no surface flow except during and immediately after rains. There is some surface seepage in the river channel for about one mile below the Lower Otay Reservoir.

Stream channels in the San Diego region can carry heavy storm runoff following periods of intense rainfall. The potential for flooding exists within any of the stream channels in the study area.

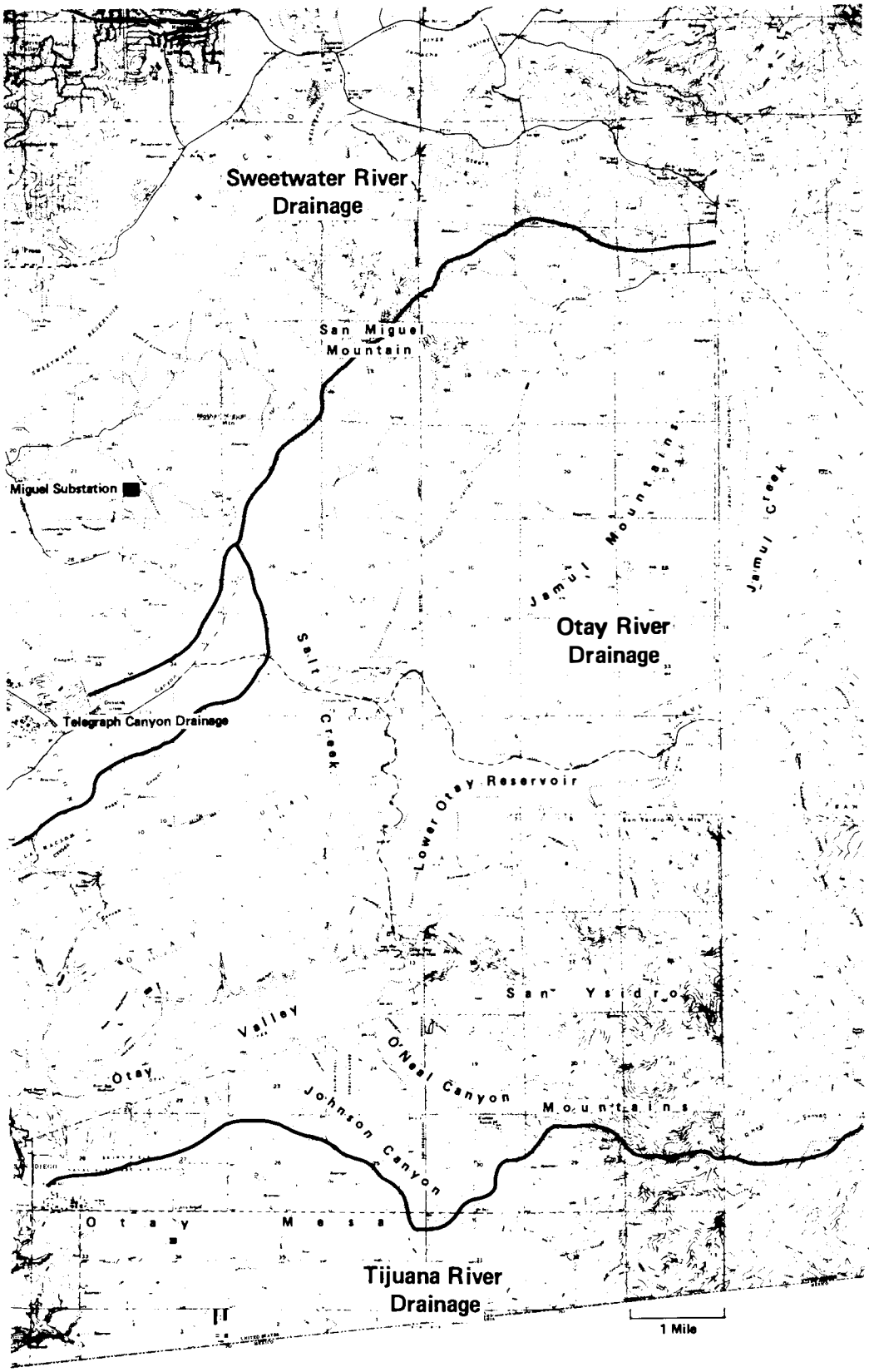

Figure 3-1. Four drainage systems are located within the project area. The Sweetwater River Drainage basin includes Miguel Substation area and is separated from the Otay River Drainage by San Miguel Mountains. Otay River Drainage includes Jamul Mountains, Jamul Creek, Upper and Lower Otay Reservoirs, San Ysidro Mountains, O'Neal and Johnson Canyons, and Salt Creek. Telegraph Canyon Drainage is located between Sweetwater Drainage and Otay River Drainage. Tijuana River Drainage includes much of Otay Mesa.

Because of their flow patterns, no water quality monitoring is carried out in the ephemeral streams of the study area, including the Otay River. Although no quantitative water quality data are available for these streams, they are generally known to transport a heavy sediment load characterized by a high content of sand and silt from soil erosion. The only chemical pollutants are derived from application of fertilizers, pesticides, and other agricultural chemicals.

The most prominent hydrologic feature in the area is the Lower Otay Reservoir, an impoundment formed behind Savage Dam on the Otay River. It provides water for domestic use in communities in the southern section of the San Diego region. Aqueducts carry water from the filtration plant near Lower Otay County Park to population centers toward the west and north.

Water quality data for Lower Otay Reservoir are collected regularly by the City of San Diego Water Utilities Department. Samples are analyzed for such parameters as pH, alkalinity, hardness, turbidity, temperature, dissolved oxygen, iron, manganese, and other minerals (Crosley, 1980). Water quality data expressed as yearly average concentrations are given in Table III-3 for the 12-month period from July 1, 1978 through June 30, 1979 (San Diego, City of, Water Utilities Department, 1979). These data indicate that the reservoir waters are presently of excellent quality and meet applicable standards.

Little information is available regarding ground water resources in the transmission line study area. It can be assumed that shallow ground water is present in the alluvium of the larger ephemeral streamcourses and of the canyons draining the mesa areas. Ground water is probably present at greater depths in a number of locations within the Tertiary formations and basement rock. This type of ground water is currently being pumped from wells on Otay Mesa and used in sprinkler irrigation.

Good quality potable ground water is believed to be characteristic of the valley and canyon alluvium. The ground water in Tertiary sediments is more or less saline. The resource currently being utilized on Otay Mesa contains between 751-1500 ppm (parts per million) of total dissolved solids, predominately sodium chloride (table salt). It is of marginal to inferior quality for domestic use and of inferior quality for irrigation (California Department of Water Resources, 1967).

E. PHYSIOGRAPHY AND TOPOGRAPHY

The study area is located at the transition between the coastal plain and the interior mountains (Figure 3-1). The western portion of the area consists of tableland, or mesa terrain dissected by steep-sided canyons. These include the valley of the Otay River, as well as Telegraph Canyon, Salt Creek, O'Neal Canyon, and Johnson Canyon. The relief adjacent to these canyons is 150-200 feet, except for O'Neal Canyon, where it is approximately 300 feet.

TABLE III-3

WATER QUALITY DATA FOR LOWER OTAY RESERVOIR

PARAMETER	ANNUAL AVERAGE VALUE (mg/ℓ)	DRINKING WATER STANDARD (mg/ℓ)
Calcium	37	
Magnesium	14	
Sodium	56	
Potassium	4.8	
Iron	0.078	0.3
Manganese	0.049	0.05
Copper	0.015	1
Zinc	0.009	5
Chloride	74	250
Sulphate	56	250
Bicarbonate	126	
Carbonate	2.7	
Total hardness	150	
Total alkalinity	108	
Total dissolved solids	354	500

Source: San Diego, City of, Water Utilities Department, 1979

Several rugged mountain ranges dominate the eastern part of the study area. From the north they include San Miguel Mountain, Jamul Mountains, and San Ysidro Mountains, with maximum elevations of 2565, 3738, and 3572 feet, respectively. The valley of the Sweetwater River lies to the north of San Miguel Mountain, while three tributaries of the Otay River drain the major part of the eastern mountainous sector. The valleys are, from north to south, Proctor Valley, Jamul Creek, and Dulzura Creek. All three drain into the Lower Otay Reservoir.

F. GEOLOGIC HAZARDS

No active faults are known to pass through the study area. The possibility of surface or near-surface ground rupture due to fault movement is therefore quite low. However, both active and potentially active faults exist within the region. Several are considered capable of generating earthquakes that would cause significant ground shaking in the project area. The potentially active La Nacion fault zone lies to the west; the closest branch of this fault approaches within two miles of the area. In addition, the potentially active Rose Canyon fault is situated approximately ten miles to the west. Other southern California faults are located at greater distances. A list of the faults considered pertinent to the study area and a summary of the bedrock ground-shaking parameters are provided in Table III-4. There is also an inferred fault, the Otay Valley Fault, which is thought to occur in the alluvium beneath the valley. Not much is known about this fault; however, it is believed to have a small amount of displacement (Cleveland, 1960).

In addition to ground shaking, other potential seismic effects include seiches and ground failure. Seiches are seismically-induced waves in enclosed or semi-enclosed water bodies. The potential for ground failure exists in areas underlain by unconsolidated late Quaternary alluvium and on unstable slopes. These events can result in flooding in the vicinity of a basin such as the Lower Otay Reservoir.

Another potential geologic hazard that may occur in the study area is landsliding. Areas underlain by the Mission Valley and Otay formations are particularly susceptible to landsliding due to a relatively high content of expansive clays. Landslides can be triggered by the mere oversteepening of a slope by excessive rainfall, earthquake shaking, and a number of other causes. No comprehensive landslide mapping has been done in the study area.

G. MINERAL RESOURCES

Mineral resources in the form of sand and gravel from riverwash deposits are currently being extracted in the Otay Valley. Bentonite, a type of clay, has been mined at sites to the north and south of Otay Valley, in areas west of the proposed western corridor. Other scattered deposits of bentonite are found in the general area, but none are of commercial value (Cleveland, 1960).

TABLE III-4

SIGNIFICANT FAULTS AND ESTIMATE OF ANTICIPATED SEISMIC GROUND SHAKING

AT POINT OF ALIGNMENT NEAREST CAUSATIVE FAULT[a]

Causative Fault Zone	Distance From Subject Site (Miles)	Approximate Age Of Most Recent Displacement	Maximum Probable Earthquake (Richter Magnitude)	Expected Bedrock Ground Acceleration(1) (Gravity)	Estimated Recurrence Interval (Years)
Rose Canyon/ San Diego Bay	10(2)	11,000 to 12000 years before present. Holocene movement possible.(2)	5.8-6.2(3)	0.28-0.32	300(4)
La Nacion/ Sweetwater	2.0(2)	11,000 to 120,000 years before present.(2)	5.8-6.2(3)	0.52-0.60	300(4)
Elsinore	28	11,000 to $2x10^6$ years before present.(2)	6.9-7.3(3)	0.14-0.18	100(3)
San Jacinto	51	1968	6.9-7.3(3)	0.07	100(3)
San Andreas	78	1968	8.0(5)	0.06	40-100(6)
San Clemente	50	Unknown	6.9(5)	0.06	Unknown

1 Schnabel and Seed, 1973

2 Kennedy et al., 1976

3 Woodward-Gizienski & Associates, 1974

4 Moore and Kennedy, 1975

5 Bonilla, 1970 in Greensfelder, 1974

6 Lamar et al., 1973

[a] Modified from WESTEC Services, Inc., 1979

H. SOILS

Five major soil associations occur in the study area. The silty and sandy loam soils of the eastern mountainous section are included in the Exchequer-San Miguel and the Friant-Escondido associations. Clay soils of the Diablo-Altamont association are widespread on the mesas north and south of the Otay River. In the vicinity of the Lower Otay Reservoir are gravelly and cobbly loams of the Redding-Olivenhain association, while well-drained to gravelly clay loams of the Huerhuero-Stockpen association are found in areas of Otay Mesa.

Soils series belonging to four of these associations are found in the vicinity of the proposed transmission line corridor. For purposes of management, each soils series can be divided into phases based upon differences in characters such as texture, slope, or stoniness. Table III-5 lists the soil mapping units that are recognized in the corridor area; these units are essentially equivalent to soils phases. Figure 3-2 shows the distribution of the soils mapping units. It can be seen that the dominant soils phase in foothill areas at the northern and southern end of the corridor is the San Miguel-Exchequer rocky silt loam. Diablo clays cover large areas on the tablelands north and south of the Otay River, while Olivenhain cobbly loams occur in small areas at the northern end of the corridor and along Salt Creek and O'Neal Canyon in the central sector. Huerhuero loams and Stockpen gravelly clay loams occupy areas in the southern and central parts of the corridor near Lower Otay Reservoir and along the eastern edge of the Otay Mesas.

Table III-5 indicates for each soil mapping unit the runoff and erosion hazard properties. These two soil properties are interrelated and are important to consider in planning for any activities such as transmission line access road construction that can expose soils to erosion. In general, those mapping units or soils phases having the steepest slopes present the greatest potential for soils erosion.

I. VEGETATION

1. Vegetation Cover Types

Five vegetation cover types can be recognized in the study area. The major vegetation types that cover extensive areas include Southern Coastal Sage Scrub, Chaparral, and Cultivated/Previously Disturbed. The latter type includes croplands as well as areas where native grasslands have been replaced by introduced weeds and grasses following grazing or cultivation. Vegetation types restricted to small areas of specialized habitat are Riparian Woodland and Vernal Pool Ephemeral.

Southern Coastal Sage Scrub occupies more arid lower and south-facing slopes throughout the region. It is found on mesa tops, in the canyons, and in the foothills; it also covers the lower slopes of the major mountain ranges. The coastal sage scrub is characterized by shallow-rooted drought-resistant deciduous shrubs whose major period of growth occurs

TABLE III-5

SOIL MAPPING UNITS IN THE VICINITY OF THE PROPOSED

ALIGNMENT WITH RUNOFF AND EROSION HAZARD PROPERTIES

Symbol	Mapping Unit Name	Runoff	Erosion Hazard
DaC	Diablo clay, 2 to 9 percent slopes	slow-medium	slight-moderate
DaD	Diablo clay, 9 to 15 percent slopes	medium	slight-moderate
DaE	Diablo clay, 15 to 30 percent slopes	medium-rapid	moderate-high
DoE	Diablo-Olivenhain complex, 9 to 30 percent slopes	medium-rapid	moderate-high
HrC	Huerhuero loam, 2 to 9 percent slopes	slow-medium	slight-moderate
HrC2	Huerhuero loam, 5 to 9 percent slopes,, eroded	slow-medium	slight-moderate
HrD	Huerhuero loam, 9 to 15 percent slopes	medium	moderate
HrD2	Huerhuero loam, 9 to 15 percent slopes, eroded	medium	moderate
HrE2	Huerhuero loam, 15 to 30 percent slopes, eroded	medium-rapid	moderate-high
LsE	Linne clay loam, 9 to 30 percent slopes	medium-rapid	moderate-high
OhC	Olivenhain cobbly loam, 2 to 9 percent slopes	slow-medium	slight-moderate
OhE	Olivenhain cobbly loam, 9 to 30 percent slopes	medium-rapid	moderate-high
OhF	Olivenhain cobbly loam, 30 to 50 percent slopes	rapid	high
Rm	Riverwash		
SbC	Salinas clay loam, 2 to 9 percent slopes	slow-medium	slight-moderate
SnG	San Miguel-Exchequer rocky silt loams, 9 to 70 percent slopes	medium-rapid	moderate-very high
SuA	Stockpen gravelly clay loam, 0 to 2 percent slopes	very slow	slight
SuB	Stockpen gravelly clay loam, 2 to 5 percent slopes	slow	slight
TeF	Terrace escarpments		
VbB	Visalia gravelly sandy loam, 2 to 5 percent slopes	slow	slight

Source: Bowman, 1973.

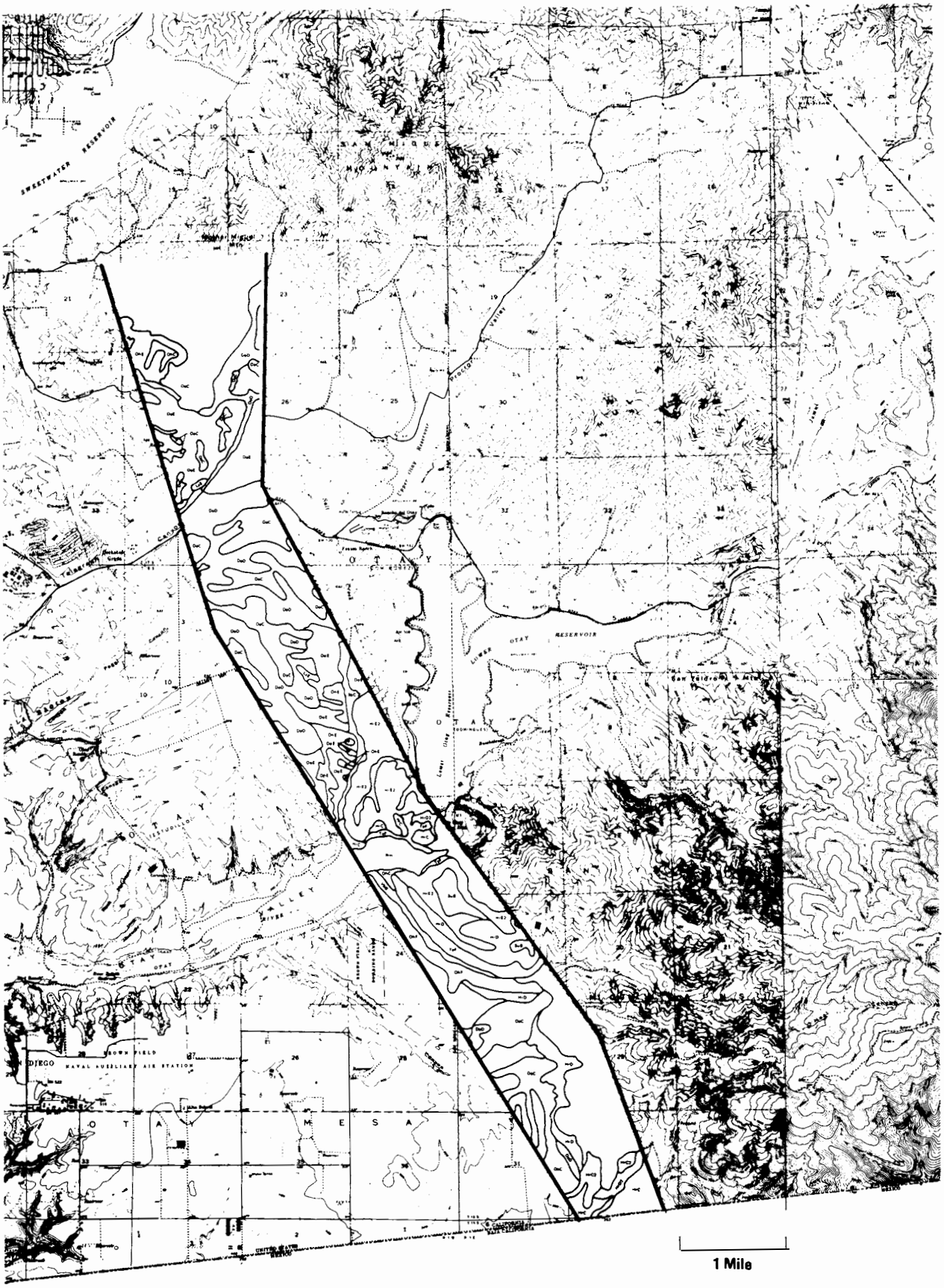

Figure 3-2. Soils distribution within the proposed corridor is mapped using standard symbols that correspond to soil names shown on TABLE III-5. Runoff and erosion hazard properties can be determined by referring to TABLE III-5.

during the cool winter season when moisture is available in the upper soil horizons. Dominant species includes flat-top buckwheat (Eriogonum fasciulatum), California sagebrush (Artemisia californica), and San Diego sunflower (Viguiera laciniata). Coast cholla (Opuntia prlifera) and coastal prickly-pear (Opuntia littoralis) are also common. Larger shrubs such as luarel sumac (Rhus laurina) and lemonadeberry (Rhus intergrifolia) are found on steeper, cooler slopes in ravines.

Dense stands of chaparral are found at higher elevations in the San Ysidro Mountains. This vegetation type consists of thick brushfields dominated by evergreen shrubs such as chamise (Adenostoma fasciculatum), manzanita (Arctostaphylos spp.), and ceanothus (Ceanothus spp.). Small patches of Chamise Chaparral occur down to the foothills of the San Ysidro Mountain at Otay Mesa.

Much of the coastal plain within the study area has been altered by cultivation, grazing, and other management practices. Native grassland dominated by needlegrass (Stipa spp.) still occurs in scattered places on the mesas and table lands, but for the most part it has been replaced by crops such as dryland barley and vegetables, and by ruderal grasslands with introduced forbs and grasses. These altered vegetation cover types are referred to collectively as Cultivated/Previously Disturbed.

Riparian Woodland is present along major stream courses within the study area, particularly in the Otay River valley and along tributaries such as Proctor Valley, Jamul Creek, and Dulzura Creek. Typical riparian species include willow (Salix spp.), mulefat (Baccharis glutinosa), western sycamore (Platanus racemosa), and Fremont cottonwood (Populus fremontii).

Vernal pool ephemeral vegetation is found in certain restricted locations on terraces and mesas within the study area (refer to Figure 3-3). Vernal pools are temporary ponds that fill with water during the winter rainy season. They form in topographic depressions where an impervious hardpan or claypan layer below the surface prevents drainage of water (Lathrop and Thorne, 1976). Most of the vernal pools in the study area occur on Stockpen or Huerhuero soils (Beauchamp and Cass, 1979). The flora of these pools is distinct from that of the surrounding habitat because of the unique environmental conditions. It consists mainly of native annuals with special adaptations such as roots tolerant to submergence, slight acidity, and low oxygen supply. In addition, their seeds must be well soaked before germinating. Because vernal pools occur in relatively flat areas suitable for urban development, much of this vegetation type in the San Diego area has been eliminated and a number of the characteristic plant species are considered rare or endangered.

Figure 3-3 indicates the distribution of these five vegetation cover types along the proposed corridor. The foothills of the San Miguel Mountains in the northernmost section of the corridor are dominated by Coastal Sage Scrub. Flatter mesa tops here are covered by annual grasses and weedy forbs. These areas are heavily grazed at present and were probably cultivated in the past. To the south the corridor passes through

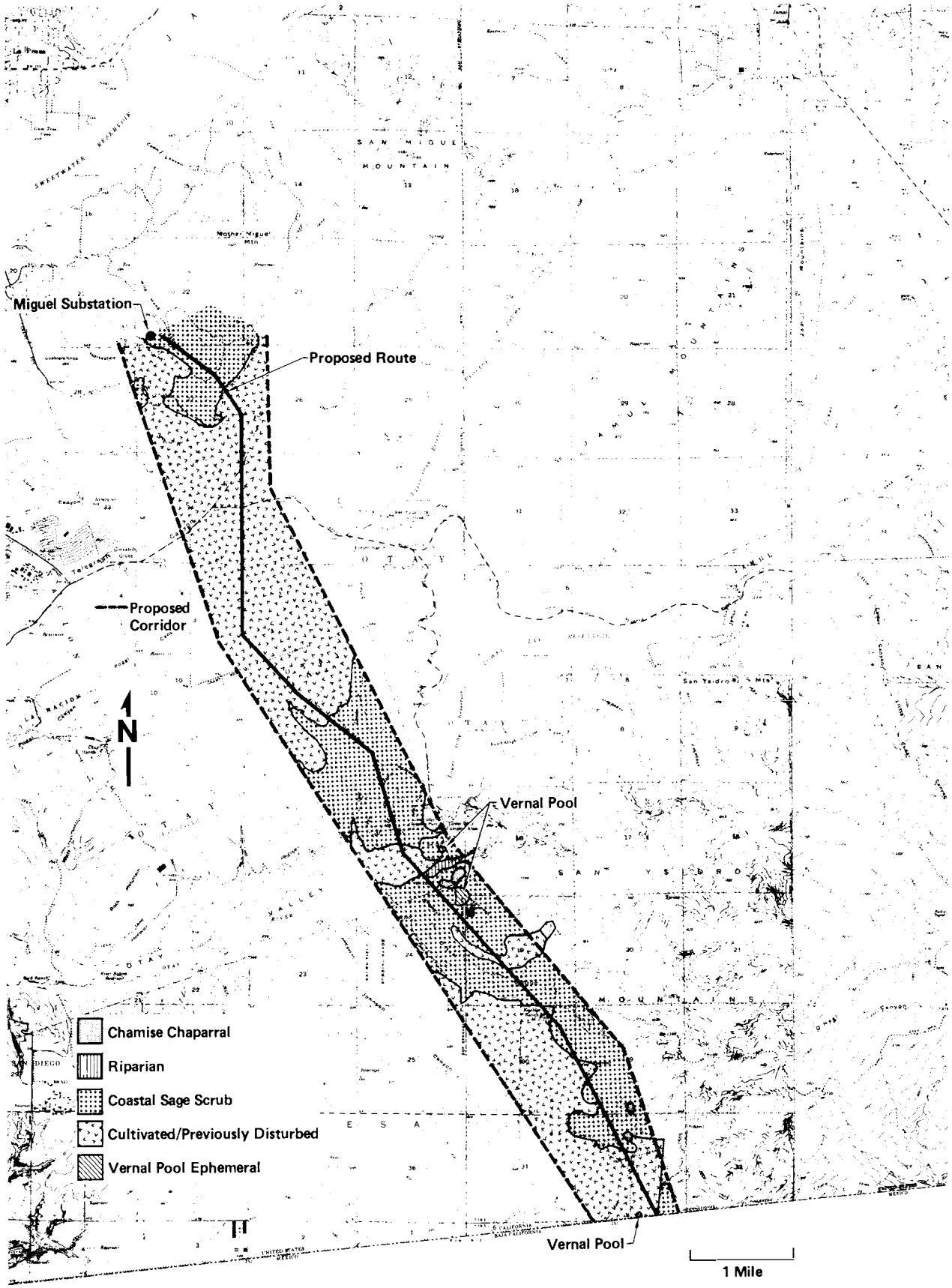

Figure 3-3. Five types of vegetation occur within the proposed corridor ranging from vernal pools to Chapparral. The majority of the corridor is covered by cultivated or previously disturbed vegetation.

an extensive area of Cultivated/Previously Disturbed terrain utilized for dry farming and cattle grazing. No native vegetation is present in this section. The slopes and canyons stretching down from this tableland to the Otay River channel are covered by Coastal Sage Scrub. Riparian Woodland is found in the narrows of the Otay River canyon below Savage Dam. Downstream, where the channel widens, sand and gravel extraction has resulted in extensive disturbance of the vegetative cover and no true Riparian Woodland is present. South of the Otay River valley, Coastal Sage Scrub covers the foothills of the San Ysidro Mountains and extends onto terrace faces and canyon slopes. The other major vegetation type in the corridor section between the Otay River and the international border is Cultivated/Previously Disturbed. This includes extensive farmland on the relatively flat to rolling terrain of the Otay Mesa, as well as patches of ruderal grassland where past surface disturbance has occurred. Three small Chaparral stands dominated by chamise occur along this portion of the corridor and are shown on Figure 3-3. Finally, three areas of Vernal Pool ephemeral vegetation have been identified here (Figure 3-3). One is located on a small terrace on the north side of the Otay River valley, another on the mesa east of O'Neal Canyon, and the third at the international border.

2. Unique Habitats and Natural Areas

(a) Vernal Pool Habitat

Vernal pools and their associated unique flora are considered to be one of the most seriously endangered natural resources in the San Diego region. The mesas of the coastal terrace that originally contained about 28,000 acres of vernal pool habitat have been developed to the point that only 2600-3000 acres remain (Beauchamp and Cass, 1979). This habitat is now in danger of being eliminated by continuing industrial, residential, and roadway development (Balko, 1979). The vernal pools of the Otay Mesa area are considered to be distinct from those in the northern part of the San Diego region because of the characteristic plant species present and because of the soils on which they are located.

The preservation of vernal pool habitat is of concern to a number of public agencies and private groups. The Army Corps of Engineers has asserted jurisdiction over vernal pools since they are isolated wetlands. A Corps Construction Permit is required before any project that would disturb, degrade, or eliminate vernal pool habitat can proceed. It would be extremely difficult for the Corps to issue such a permit, especially where threatened or endangered plant species could be affected. The City and County of San Diego, in cooperation with the Army Corps of Engineers, the California Department of Fish and Game and the U.S. Fish and Wildlife Service are preparing a comprehensive vernal pool preservation plan. The details of the plan are being developed at the present time; if the plan as ultimately adopted by the City and County is satisfactory to the Army Corps of Engineers, the latter agency will not exercise its jurisdiction.

A committee, consisting of biologists affiliated with a broad range of concerned agencies and organizations, recently submitted a report rating San Diego area vernal pool complexes in order of priority for preservation (Balko, 1979). Of the three vernal pool complexes within the proposed transmission line corridor, the one on the mesa east of O'Neal Canyon is considered to be of high value because of the associated sensitive plant species. These include the Loma Alta pogogyne (Pogogyne nudiuscula), very similar to and possibly identical with the San Diego mesa mint (P. abramsii), a federally-listed endangered species. Other species of concern are the San Diego coyote thistle (Eryngium aristulatum var. Parishii), a state-listed endangered species, and the mousetail (Myosurus minimus var. apus), considered rare and endangered by the California Native Plant Society. No data are presently available regarding the relative value or preservation priority of the other two vernal pool areas within the applicant's proposed corridor.

(b) Riparian Woodland Habitat

Riparian Woodland is another habitat type that has been severely reduced in extent throughout southern California as a result of man's activities. The well-developed riparian woodland in the canyon of the Otay River below Savage Dam is an excellent example of this vegetation community. Although no rare or endangered plants are found here, the area provides outstanding wildlife habitat.

(c) O'Neal Canyon

This deep, steep-walled canyon supports a number of plant species that normally occur only in the mountain areas to the east. For example, about 20 specimens of Tecate cypress (Cupressus forbesii), a small tree found in a few restricted localities in southern California and Baja California, are present in O'Neal Canyon. Other noteworthy plant species are yerba santa (Eriodictyon trichocalyx), Munz sage (Salvia munzii), and matilija poppy (Romneya trichocalyx).

(d) California Natural Areas

Three areas in or near the applicant's proposed corridor have been identified by the California Natural Areas Coordinating Council (CNACC) as having special natural values (CNACC, 1977). These areas have been included in the CNACC Inventory of California Natural Areas on the basis of their unique plant life and as representative of particular California biotic communities. The first area, designated as Otay Mountain, includes the highest peak in the San Ysidro Mountains and a large area of undisturbed mountainous habitat surrounding it and extending west to the edge of the applicant's proposed corridor. It is characterized by a unique chaparral association and a number of rare and endemic plant species. The other two areas are on Otay Mesa; the unit designated as Otay Mesa A is to the west of the applicant's proposed corridor, while Otay Mesa B is partially in the corridor, including O'Neal Canyon and the mesas to the west and east. Both units are considered of interest by CNACC because of their vernal pools and

associated rare plants. Listing of these areas in the CNACC Inventory provides no legal protection in itself, but it does indicate to public agencies and private decision-makers the natural values present and the need for protection.

3. Rare, Threatened, and Endangered Plant Species

The entire southwestern portion of San Diego County is characterized by a large number of plant species of special concern because of their rarity, restricted distribution, or sensitivity to encroaching urban development.

The California Native Plant Society (CNPS) has published an inventory of rare and endangered plants of California which indicates the current status of plant species of special concern (CNPS, 1980). Many of these species have not received official listing or protection from U.S. Fish & Wildlife Service or California Department of Fish & Game, although others have been listed or are under review. List 1 in the CNPS inventory includes those species believed by authorities in the field to be sufficiently rare and/or endangered to warrant the highest priority for special protection. Inclusion in this list does not in itself provide any official status or protection, but does call the attention of decision-makers to the need for protection. Table III-6 indicates those plant species found within the study area that are classified by the CNPS into List 1. Table III-7 includes definitions of the CNPS rarity-endangerment code. Figure 3-4 shows the known locations of rare and endangered plant populations within the transmission line corridor.

As a result of a final rule-making action in 1978, the USDI Fish & Wildlife Service has officially listed the San Diego mesa mint (Pogogyne abramsii), a small vernal pool species, as endangered. In 1979 the California Department of Fish & Game took similar action regarding this plant. Although the range of the San Diego mesa mint does not extend into the study area, it is replaced in the vernal pools of the Otay Mesa by a very similar species, the Loma Alta pogogyne (Pogogyne nudiuscula). The latter has not been listed as rare, threatened, or endangered by either state or federal authorities. However, its status is currently under review by the U.S. Fish and Wildlife service and it will probably be listed as endangered before the end of 1980.

Vernal pools of the study area also provide habitat for the San Diego coyote thistle (Eryngium aristulatum var. Parishii), listed as endangered by the California Department of Fish & Game (CDFG, 1979). It is likely that this species will also be listed as endangered by the U.S. Fish and Wildlife Service before the end of 1980.

The Otay tarplant (Hemizonia conjugens) is another state-listed endangered species that occurs in native grassland and Coastal Sage Scrub on the slopes of the San Miguel Mountains, near the north end of the applicant's proposed corridor.

TABLE III-6

PLANT SPECIES OF THE TRANSMISSION LINE STUDY AREA DESIGNATED AS RARE OR ENDANGERED BY THE CALIFORNIA NATIVE PLANT SOCIETY. ALL SPECIES ARE INCLUDED ON THE FIRST LIST OF THE CNPS REVISED INVENTORY AND ARE CONSIDERED AS HAVING HIGHEST PRIORITY FOR PROTECTION. SEE TABLE III-7 FOR EXPLANATION OF RARITY-ENDANGERMENT CODE.

SPECIES	RARITY-ENDANGERMENT CODE	HABITAT
Acanthomintha ilicifolia	3-3-2-2	Vernal pools and heavy clay soils
Arctostaphylos otayensis	2-1-1-3	Chaparral, San Ysidro Mountains
Astragalus deanei	3-2-1-3	Coastal foothills
Brodiaea orcuttii	1-2-2-2	Vernal pools
Calochortus dunnii	3-2-1-2	San Ysidro Mountains
Dudleya variegata	2-3-2-2	San Miguel Mountains, scattered places from Otay Valley south to Mexico
Eryngium aristulatum var. Parishii	2-3-3-2	Vernal pools
Fremontodendron mexicanum	3-3-3-2	San Ysidro Mountains
Hemizonia conjugens	3-3-2-2	Sweetwater Reservoir, San Miguel Mountains
Lepechinia ganderi	2-1-1-2	Chaparral in mountains
Muilla clevelandii	2-2-2-2	Otay Mesa
Myosurus minimus var. apus	3-3-3-2	Vernal pools, alkaline marshes
Navarretia fossalis	3-3-3-2	Vernal pools
Orcuttia californica	3-3-3-2	Vernal pools
Pogogyne nudiuscula	3-3-3-2	Otay Mesa vernal pools
Satureja chandleri	2-2-1-2	Chaparral in mountains

[a]California Native Plant Society (1980).

TABLE III-7

CALIFORNIA NATIVE PLANT SOCIETY RARITY-ENDANGERMENT CODE

Rarity (R)

1. Rare, or limited distribution, but distributed widely enough that potential for extinction or extirpation is apparently low at present.

2. Occurrence confined to several populations or one extended population.

3. Occurs in such small numbers that it is seldom reported; or occurs in one or very few highly restricted populations.

Endangerment (E)

1. Not endangered.

2. Endangered in part.

3. Totally endangered.

Vigor (V)

1. Stable or increasing.

2. Declining.

3. Approaching extinction or extirpation.

General Distribution (D)

1. Not rare outside California.

2. Rare outside California.

3. Endemic to California

California Native Plant Society (1980).

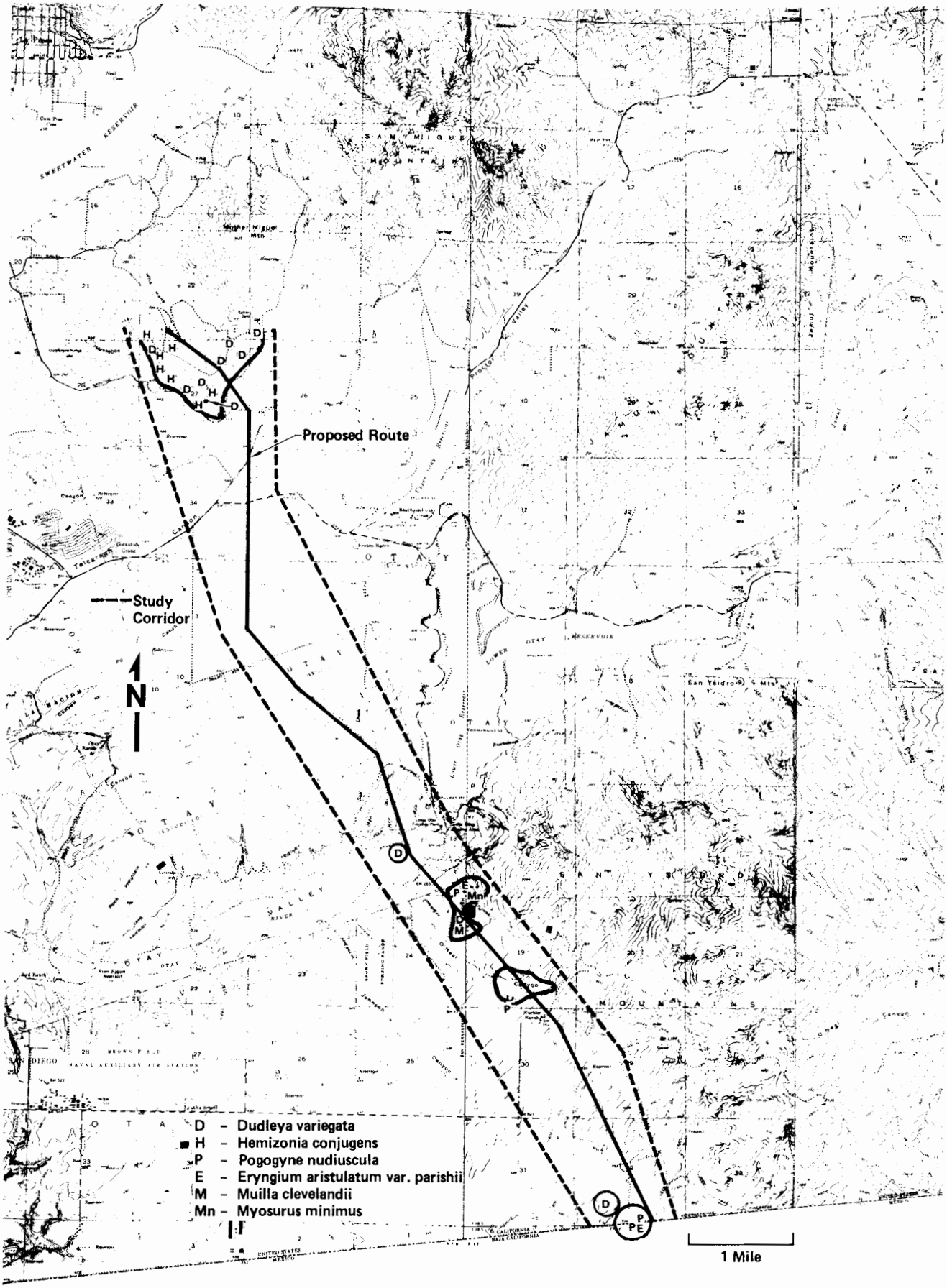

Figure 3-4. Six plant species listed as rare and endangered by the California Native Plant Society are located within the proposed corridor. These plants occur in three locations; in the vicinity of Proctor Valley Road and Miguel Substation; between Otay Valley and O'Neal Canyon; and near the international border.

The protection of these rare and endangered plant species will require consultation with the U.S. Fish and Wildlife Service and the California Department of Fish and Game. The Endangered Species Act of 1973 directs all federal agencies to ensure that their actions are not likely to jeopardize the continued existence of an endangered species or result in adverse modification of its habitat. Consultation regarding this issue is the first step toward development of mitigation measures adequate to protect these plants (see Section IV., B., 2., (b)).

J. WILDLIFE

1. Habitat Types and Related Wildlife

(a) Aquatic Habitats

The only aquatic habitats within the study area are Sweetwater and Lower Otay Reservoirs. None of the ephemeral streams provide aquatic habitat for sufficient time to allow the development of a characteristic fauna.

Lower Otay Reservoir supports a locally significant warm water fishery. The species taken by fishermen here include both northern and Florida largemouth bass (*Micropterus salmoides salmoides* and *M.S. floridanus*), channel catfish (*Ictalurus punctatus*, bluegill (*Lepomis macrochirus*), and redear sunfish (*L. microlophus*). There is no public access for fishing at Sweetwater Reservoir.

The most important waterfowl habitats in the study area are Sweetwater and Lower Otay Reservoirs. Sweetwater Reservoir appears to be more heavily and consistently used by overwintering waterfowl, probably because of the lack of hunting and human disturbance in general. Canada geese (*Branta canadensis*), as well as a number of species of ducks, are present through the winter. This is also the only site in coastal Southern California where western grebes (*Aechmophorus occidentalis*) nest. At lower Otay Reservoir waterfowl are present in largest number during fall and spring migration. No quantitative estimates are available to indicate the numbers of the various species that use the reservoir. The flight paths by which waterfowl arrive at and leave Lower Otay Reservoir are unknown (McKinnie, 1980). However, many birds appear to move northwest to Sweetwater Reservoir when Lower Otay Reservoir is open to hunting (Downer, 1980).

(b) Terrestrial Habitats

No comprehensive wildlife survey has been carried out in the study area. However, a field reconnaissance of the applicant's proposed corridor in May 1979 provided data on the occurrence of a number of wildlife species (WESTEC Services, Inc., 1979). Although the general region of the corridor includes a great deal of land that has been altered by farming and livestock grazing operations, there is enough open space and cover to provide reasonably good wildlife habitat. Furthermore, the mountainous areas immediately to the east of the corridor are excellent wildlife habitat, still relatively undisturbed by human activities.

A number of bird species have been observed in the area of the applicant's proposed corridor. Species typical of the Cultivated/Previously Disturbed vegetation type include:

Mourning dove (Zenaida macroura)
Western kingbird (Tyrannus verticalis)
Cassin's kingbird (Tyrannus vociferans)
Horned lark (Eremophila rupestris)
Loggerhead shrike (Lanius ludovicianus)
Starling (Sturnus vulgaris)
House sparrow (Passer domesticus)
Westen meadowlark (Sturnella neglecta)
Lark sparrow (Chondestes rgrammacus)
House finch (Carpodacus mexicanus).

This habitat is of great importance to raptorial birds. Burrowing owls (Athene cunicularia) are permanent residents in a number of grassland and cultivated areas within and near the proposed corridor; they are found on Otay Mesa and on the tablelands north of the Otay River. Marsh hawks (Circus cyaneus) and white-tailed kites (Elanus leucurus) forage extensively and probably nest in the areas north of the Otay River. This same area serves as a winter foraging ground for ferruginous hawks (Buteo regalis) and an occasional rough-legged hawk (Buteo lagopus). Red-tailed hawks (Buteo jamaicensis) and American kestrels (Falco sparverius) are commonly seen throughout the corridor and adjoining habitat at all times of year. Golden eagles (Aquila chrysaetos) hunt regularly over the tablelands and mesas, although their preferred habitat is the more rugged mountain country to the east. Prairie falcons (Falco mexicanus) have also been observed foraging over Otay Mesa, although no nesting sites are known in the area (Scott, 1980).

Bird species that tend to be found in the Coastal Sage Scrub habitat include:

California quail (Lophortyx californicus)
Roadrunner (Geococcyx californianus)
Anna's hummingbird (Calypte anna)
Black-tailed gnatcatcher (Polioptila melanura)
Phainopepla (Phainopepla nitens)
Brown towhee (Pipilo fucus)
Rufous-crowned sparrow (Aimpophila ruficeps)
Sage sparrow (Amphispiza belli)

Species observed in dense Chaparral habitat are:

Bushtit (Psaltriparus minimus)

Wrentit (Chamaea fasciata)

Bewick's wren (Thryomanes bewickii)

Mockingbird (Mimus polyglottos)

California thrasher (Toxostoma redivivum)

Bird species that may be seen throughout the study area include the cliff swallow (Petrochelidon pyrrhonota), common crow (Corvus brachyrhynchos), and common raven (Corvus corax).

Mammals that appear to be common throughout much of the corridor area are the California ground squirrel (Spermophilus beecheyi), desert cottontail (Sylvilagus audubonii), and black-tailed jack rabbit (Lepus californicus). A number of species of small nocturnal rodents are undoubtedly present as well. Evidence of predators such as coyotes (Canis latrans) and gray fox (Urocyon cinereoargenteus) was found during the field reconnaissance in May 1979. There was no sign of mule deer (Odocoileus hemionus), although they may occur in some of the canyons in the corridor area.

Reptiles that were observed during the field reconnaissance include:

Western fence lizard (Sceloporus occidentalis)

Coast horned lizard (Phrynosoma coronatum)

Rosy boa (Lichanura trivirgata)

Common kingsnake (Lampropeltis getulus)

Red diamond rattlesnake (Crotalus ruber)

Gopher snake (Pituophis melanoleucus)

Amphibian species are probably most abundant in the Otay River valley, where the presence of water should provide breeding habitat. Vernal pools may also be utilized as breeding sites by amphibians.

2. Rare, Threatened, and Endangered Wildlife Species

The southern bald eagle (Haliaeetus leucocephalus leucocephalus) is listed as endangered by both the USDI Fish & Wildlife Service and the California Department of Fish & Game. A few bald eagles winter at various lakes and reservoirs in San Diego County, although no nesting has been recorded. One or two birds have been reported consistently at Sweetwater Reservoir during recent winters. However, there has been only one sighting of a bald eagle at Lower Otay Reservoir over the last three winters (Scott, 1980). Waterfowl hunting at the latter site may discourage regular use. The period during which bald eagles may occur in the study area is generally from mid-November through mid-March.

The American peregrine falcon (Falco peregrinus anatum) is also listed as endangered under federal and state law. This species is known to occur as a transient in the San Diego coastal area during fall and spring migration. Individuals could pass through the study area, but no recent sightings have been reported.

No wildlife species classified as rare by the California Department of Fish & Game are known to be present within the study area.

Several wildlife species that are fully protected under California law may be found within the study area. Golden eagles (Aquila chrysaetos) nest in remote canyons on San Miguel Mountain and in the San Ysidro Mountains. They forage regularly over the mountain slopes and also utilize the mesas and valleys. White-tailed kites (Elanus leucurus) are relatively common raptors in the area. They hunt in open areas such as ruderal grassland and cultivated fields. Nesting probably takes place in eucalyptus groves and riparian woodland. The entire length of the proposed corridor is suitable habitat for both species of fully-protected raptor.

A third fully-protected species, the rightail (Bassariscus astutus), has not been reported in the study area, but undoubtedly occurs in appropriate habitats. This slender noctural carnivore, a relative of the raccoon, is often found in Coastal Sage Scrub and Chaparral communities, especially where there is cover in the form of cliffs, canyons, and rock terrain. Particularly favorable habitats for the rightail along the proposed corridor are the foothills of the San Miguel and San Ysidro Mountains and the canyons of the Otay River, Salt Creek, and O'Neal Canyon.

K. LAND USE

1. General

This section will address a wide range of topics that are important to the general region though they may not occur in the study corridor proper. Many of these items will influence future development throughout the Otay Mesa area and warrant discussion, and often dismissal, as potential impacts or influencing factors.

2. Jurisdiction

The applicant's proposed corridor is within the county's Otay Subregional Planning Area. Eastern extensions of the cities of Chula Vista and San Diego are both about a mile west of the corridor. The city of San Diego is planning to annex an area bounded by the Otay River Valley on the north, the San Ysidro Mountains to the east, the international border on the south and I-805 to the west. If the annexation takes place, the lower third of the transmission corridor will pass through an area incorporated in the City of San Diego. The corridor above Otay Valley will remain in the county. It can be anticipated that, because the area north of Otay Valley is topographically well-suited for residential development, this area will eventually be annexed to either San Diego, or to Chula Vista for provision of urban services and facilities.

San Diego county contains 4261 square miles (U.S. Census, 1977). The city of San Diego currently encompases 321 square miles (San Diego, City of, Planning Dept., 1979); the city of Chula Vista is about 18.4 square miles (U.S. Census, 1977). The Otay East Mesa area contains about 32 square miles (San Diego, City of, Planning Dept., 1979); the study corridor (10 miles long and about a mile wide) has about 10.5 square miles; the 120 foot route right-of-way has about a quarter of a square mile (145 acres). The route amounts to less than 1% of the Otay East Mesa areas, 1% of the area of Chula Vista, less than 1/1000 of San Diego and less than 1/10000 of the area of the county.

3. General Plan and Zoning Designations

The most relevant public policy covering the study corridor is the County Otay Subregional Planning Area Land Use Element and county zoning. The corridor is shown in relation to these areas in Figure 3-5. The zones and General Plan designations are basically holding zones designed to slow urbanization until the area can be annexed to San Diego or Chula Vista, at which time services and facilities could be economically provided to residential, commercial, and industrial development. The City of San Diego is preparing a specific plan to augment their Otay East Mesa Community Plan, in preparation for annexation of the area. In addition, the General Plan adopted by the City of Chula Vista covers portions of the proposed transmission line corridor between the Lower Otay Reservoir and the City limits.

4. Ownership

Twenty property owners have parcels that the proposed route would pass over or adjacent to. The two largest owners are United Enterprises, Inc., and VNV Development Company, owners of the Kuebler Ranch. Most of the owners in the study corridor farm or lease their land for farming.

5. Existing Land Use

(a) Agriculture

The Otay subregion of San Diego County in which the proposed project is located, includes 13,695 acres (of 54,295 total acres in the subregion) that are in some stage of agricultural production. The Otay subregion represents about 13% of the productive acreage in the county (San Diego, County, 1979). Of the 13,095 acres in production, typically 4000 acres will be planted in row crops such as tomatoes, celery, or peppers in a given year. The remaining 9,695 acres are planted in field crops, used for grazing, or left fallow. Within the subregion the two principal agricultural areas are Rancho Otay located to the north of Otay Valley and Otay Mesa, located to the south of Otay Valley. Parts of both of these areas lie within the proposed corridor as illustrated on Figure 3-5. Based upon soil classification, approximately 90 acres of agricultural land are located within the applicant's proposed corridor (refer to Figure 3-6).

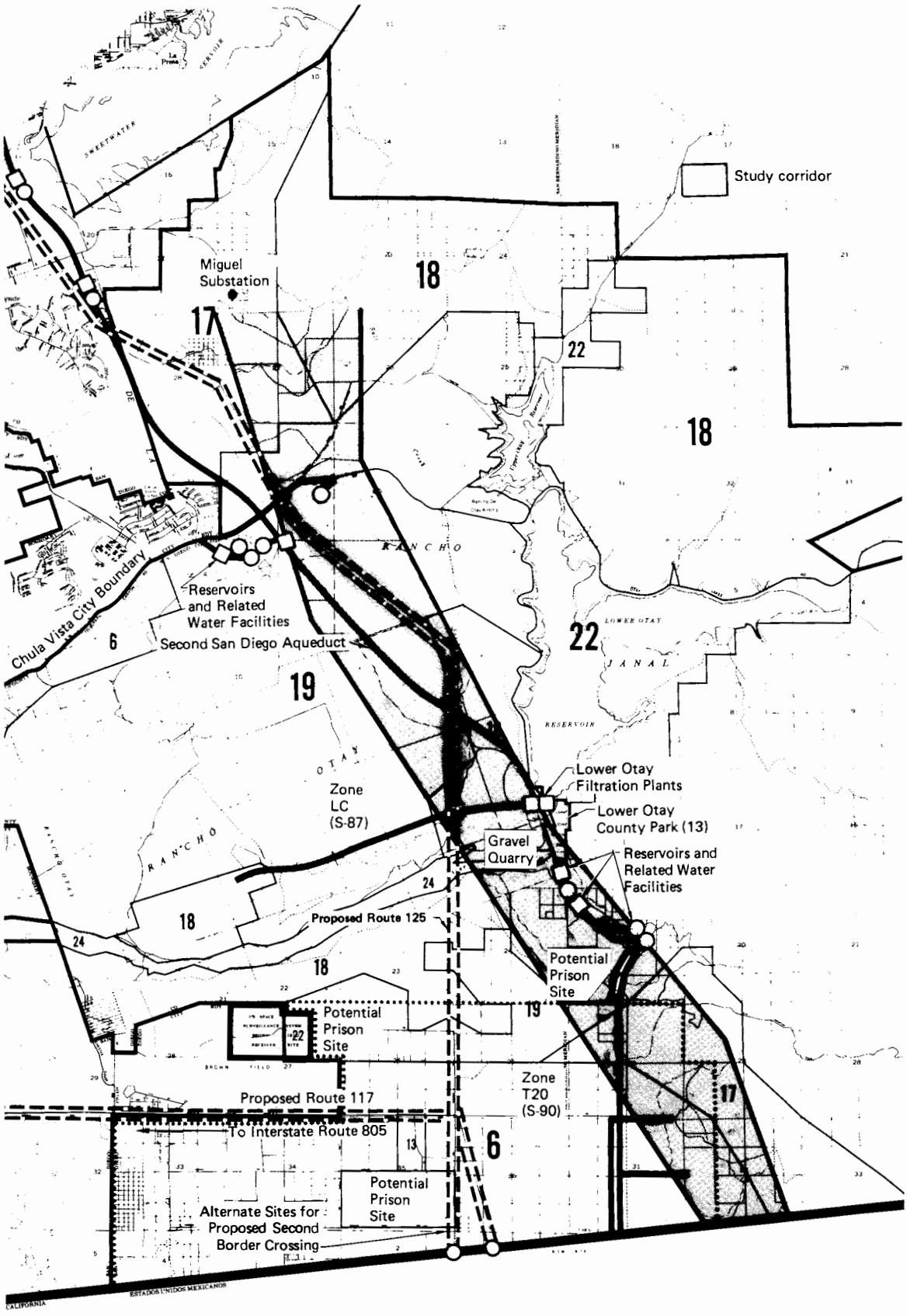

Figure 3-5. The study corridor passes through San Diego County's Otay Subregional Planning Area. The southern portion of the corridor is in holding zones T-20 (new designation S-90) and LC (S-87) that are designed to discourage urban development and encourage continued agricultural use. The corridor passes through several planning area designations: area 19, Intensive Agriculture, and area 17, Estate, permit limited residential development; area 18, Multiple Rural Use permits only very limited residential development; area 6, Residential, permits suburb-density urbanization; area 24, Impact Sensitive, restricts use on the basis of flood hazard in the Otay Valley; area 13, General Commercial, covers the Lower Otay County Park; area 22 is Public/semi-public. County policy applies the more restrictive of zoning or general plan designation to requests for subdivision. Vernal pools located south of Otay Valley are temporarily protected by a Vernal Pool Designator Zone.

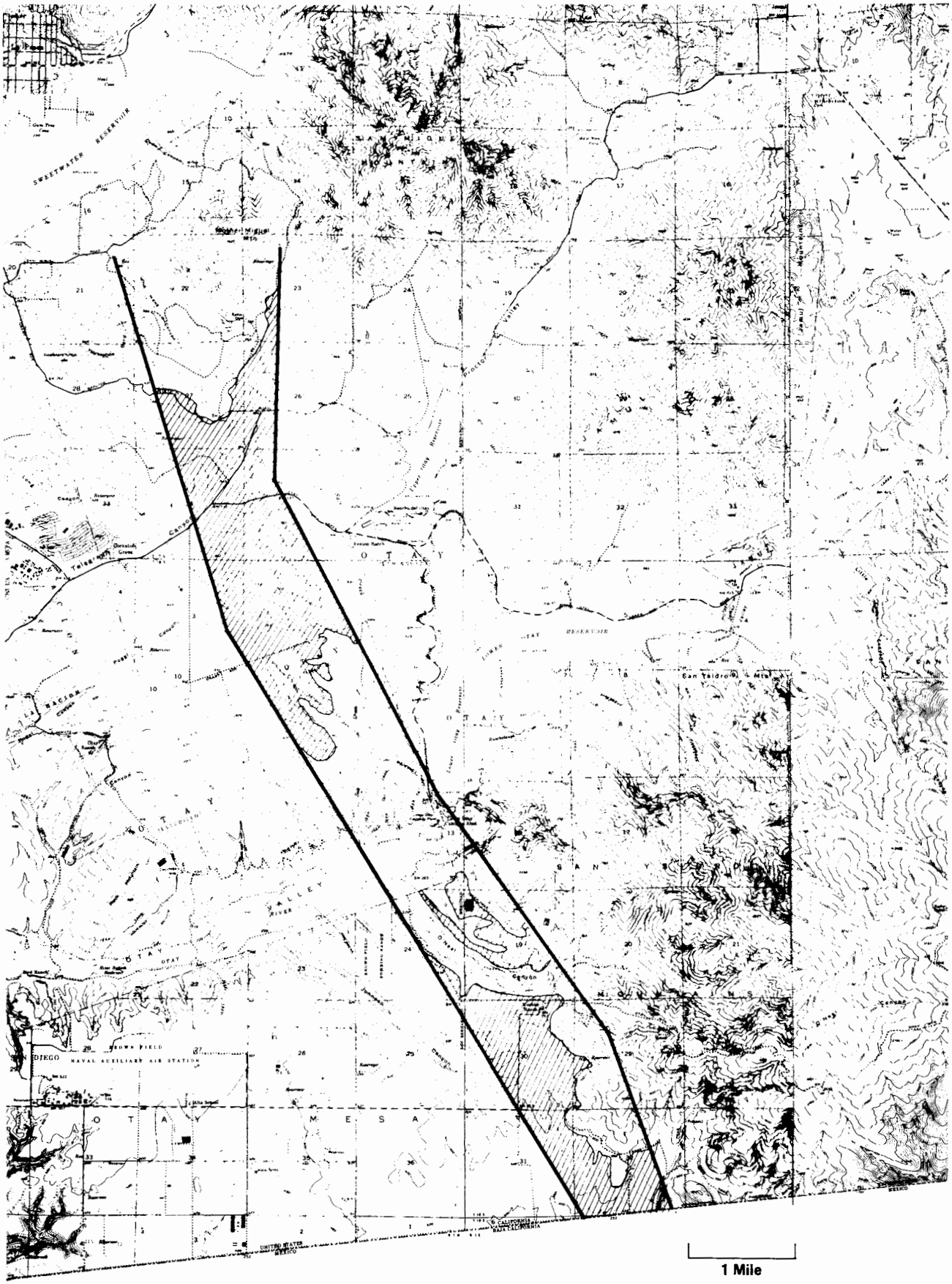

Figure 3-6. The portion of the proposed corridor with potentially productive agricultural soils is shaded. This area extends from near Proctor Valley Road on the north to about 1 mile north of Otay Valley. Agriculturally productive soils cover the Otay Mesa portion of the proposed corridor.

The agricultural potential for irrigated crops in the project area is somewhat reduced by the relatively high cost of irrigation water. Otay Municipal Water District supplies water to the area at a rate of $179 per acre foot which is 32% above the county average (Vance, 1979). In contrast, the relatively lower price of irrigated land (35% below the county average) tends to offset the effects of higher water prices upon the agricultural potential of the area. Two parcels to the west of the study corridor are under Williamson Act agricultural preserve contracts.

(b) Quarry Operation

A sand and gravel quarry is operated on land owned by United Enterprises, Inc. in the eastern end of Otay Valley. The valley floor is crisscrossed with service roads for extraction equipment and gravel trucks.

(c) Lower Otay Filtration Plant

Immediately to the west of Lower Otay Camping Area is an existing filtration plant, part of the County of San Diego's water delivery system. The plant is being expanded; a new filtration facility is currently under construction.

(d) Bureau of Land Management

The BLM owns and manages land that covers most of the San Ysidro Mountains. Much of this is classified as Wilderness Study Area. Permanent alterations or structures are prohibited in a Wilderness Study Area. The proposed transmission corridor includes a 1/4 section of BLM land, located in T. 185, R.IE, S.B.B.M. Section 29, northwest one quarter (1/4) (Ruch, 1979).

(e) Lower Otay County Park

The study corridor passes along the western boundary of the Otay County Park, located at the southwestern end of Lower Otay Reservoir. The proposed transmission line right-of-way will pass about a third of a mile to the west of the park (See Figure 3-5). This regional park is being developed by the county on land leased from the City of San Diego, who owns and operates the reservoir. About 340,000 visitors use the park annually. Recreational use of the park is varied and includes boating, fishing, picnicking, camping, and hiking. Off road vehicle use is growing in the area and park expansion plans include an area for this activity in addition to expanded equestrian use to accommodate the large number of horse owners. The park currently has about 75 developed acres out of 2,100 currently available. The County General Plan Recreation Element recommends major expansion of the facility to accommodate the expected increase in use (San Diego County, 1978).

(f) State of California Prison Sites

The State of California owns a parcel of land southeast of Brown Field, indicated on Figure 3-5, on which the State Board of Corrections has intended to build a prison facility. However, two other sites are being

considered, as indicated (Sutliff, 1980). The eastern-most site alternative is on the Kuebler Ranch within the study corridor. The prison facility will be the first of a new series of modular units consisting of four 400-bed independent units of about 12 buildings each. The total acreage required for these four units is about 320 (Asano, 1980).

(g) Second Border Crossing

A second international border crossing has been proposed for one of three sites; the western site near the coast along the Ensenada Highway; expansion of the current San Ysidro Border Crossing Facilities, and an Otay Mesa site. Two variations on the Otay Mesa site are: the terminus of Harvest Road, and a site 1000 feet east of this. Although this project has been discussed by officials at every level of government for 15 years, the border crossing will apparently be opened near the Harvest Road location in 1983. The City of San Diego and the county have begun engineering design of the access route (Route 117, or an interim route parallel to it south of Otay Mesa Road). Both the city and county have set aside fiscal 1980 monies for right-of-way acquisition, and have allocated Federal Aid to Urban/Secondary Highway Funds to build the access road (General Services Administration, 1979; VTN, Consolidated, Inc., 1979).

6. Air Navigation Obstruction Considerations

(a) Brown Field

Brown Field, formerly a Naval Air Station, is owned and operated by the City of San Diego as a general aviation facility. The field occupies 900 acres bordering the north side of Otay Mesa Road at an elevation of 523 feet. The field has an 8,000-foot paved landing strip and a parallel 2,500-foot touch-and-go strip, both oriented in an east-west direction. The field averages about 20,000 flight operations a month (San Diego, City of, Planning Dept., 1979).

Comprehensive planning for Brown Field is being funded by a Federal Aviation Administration planning grant secured by the City of San Diego. The two-phased plan included a Brown Field Land Use Plan, for which the Comprehensive Planning Organization (CPO) is responsible, and an Airport Master Plan, for which a consultant has been engaged (San Diego, City of, Planning Dept., 1979).

At the same time, the CPO, the designated Airport Land Use Commission for San Diego, is having a consultant update its regional air transportation plan. The CPO is currently considering the question of Lindberg Field, the San Diego International Airport facility for commercial passenger and cargo service. The current facilities are inadequate. Brown Field is one of the five potential alternates for the airport. The Brown Field master planning effort will address this potential. However, several factors probably combine to preclude moving the International Airport to Brown Field. The Tijuana International Airport, with a 10,000-foot runway, 2 1/2 miles south of Brown Field and the international border, restricts air space

considerably. Another problem is that the San Ysidro Mountains, rising 3,050 feet above the runway within a distance of eight miles to the east, would interfere with Federal Aviation Administration regulations regarding missed approaches, executed under IFR (Instrument Flight Rules) conditions, by jet aircraft.

(b) U.S. Navy SEAL Team Parachute Drop Zone and Helicopter Maneuver Areas

The Navy uses an area west of the study corridor for a practice parachute drop zone. The Navy also carries out helicopter maneuvers around two knolls in the San Ysidro Mountains to the east of the study corridor.

(c) U.S. Border Patrol and U.S. Customs Service Air Surveillance Operations

The U.S. Border Patrol aerial surveillance flights operate from Brown Field. The entire County of San Diego is patrolled by air, but 80 to 90% of the flights are within the area 5 miles north of the border between Otay Mountain (east of the south end of the proposed corridor) and the Pacific Ocean (Boleman, 1980). Many of these flights are within 25 feet of the ground, particularly in commonly traveled areas. Between 95,000 and 100,000 illegal aliens a year are apprehended in this area through aerial surveillance. A new fence is being built to discourage illegal entry into the United States, along the border from about a half mile east of the San Ysidro border crossing to the ocean. The already heavy use of the Otay Mesa area for illegal entry is projected to increase substantially when the completed fence makes entry more difficult to the west. In addition to Border Patrol surveillance, the Customs Service also conducts frequent flights in the area, but at a higher altitude.

(d) Private Landing Strips

There are two private aircraft landing strips in the area. One is on the Otay Ranch just over half a mile east of the study corridor. The landing strip is over a mile from the proposed transmission route. The other landing strip is at the northeast end of Lower Otay Reservior, 2 1/2 miles from the corridor. Neither of these private strips is under FAA jurisdiction.

7. Public Safety

(a) Fire

Part of the proposed transmission corridor is in an area that is susceptible to wildfires. California Department of Forestry and the U.S. Forest Service are responsible for non-structure fire control. The San Diego County Fire Service provides fire protection to structures. The nearest County Fire Service locations are at Jamul, on the north side of Jamul Mountains and Dulzura, east of the San Ysidro Mountains.

(b) Flood

The proposed study corridor crosses the Otay Valley floodplain. The failure of Savage Dam at the Lower Otay Reservoir would result in inundation of the Otay Valley. Responsibility for dam safety lies with the California State Department of Water Resources. Policy 18 of the San Diego County Conservation Element (San Diego County Integrated Planning Office, 1976), states that the county will prevent filling or construction in the floodway.

8. Relevant Public Services and Facilities

(a) Water

The Otay Municipal Water District has jurisdiction in the area of the proposed transmission corridor (Barber, 1980). There are several areas in the study corridor where water district utilities are located. Fig. 3-5 shows these locations. The proposed route parallels the Second San Diego Aqueduct, operated by the City of San Diego, for part of its length.

(b) Electricity

There are several low voltage distribution lines throughout the study corridor serving the sparse agricultural-residential needs of the area. There are distribution lines at the Kuebler Ranch and at least two lines in Otay Valley.

(c) Roads

There are two paved roads crossing the area of the proposed transmission route and a number of dirt roads. The area is so sparsely populated that traffic is very light.

(d) Schools

There are no schools in proximity to the proposed transmission corridor.

L. VISUAL RESOURCES

Visual resources in the project area range from the grassy and cultivated, gently rolling slopes and swales, to more distinct topographic features such as the Otay Valley and the foot of the San Ysidro Mountains. At the northern end of the proposed corridor Miguel Substation has been graded out of hillside on the westerly side of Wild Man's Canyon (refer to Plate 1). This canyon is visually characterized by a mixture of grassy and scrub vegetation, interspersed with occasional small rock outcroppings. To the south of Wild Man's Canyon there is a low grassy ridge that descends toward the south into gently rolling topography, as illustrated on Plates 2 and 3. This area is traversed by Otay Lakes Road, Proctor Valley Road and a road that connects these two roads. This connecting road and parts of Otay Lakes Road are lined with evergreen trees.

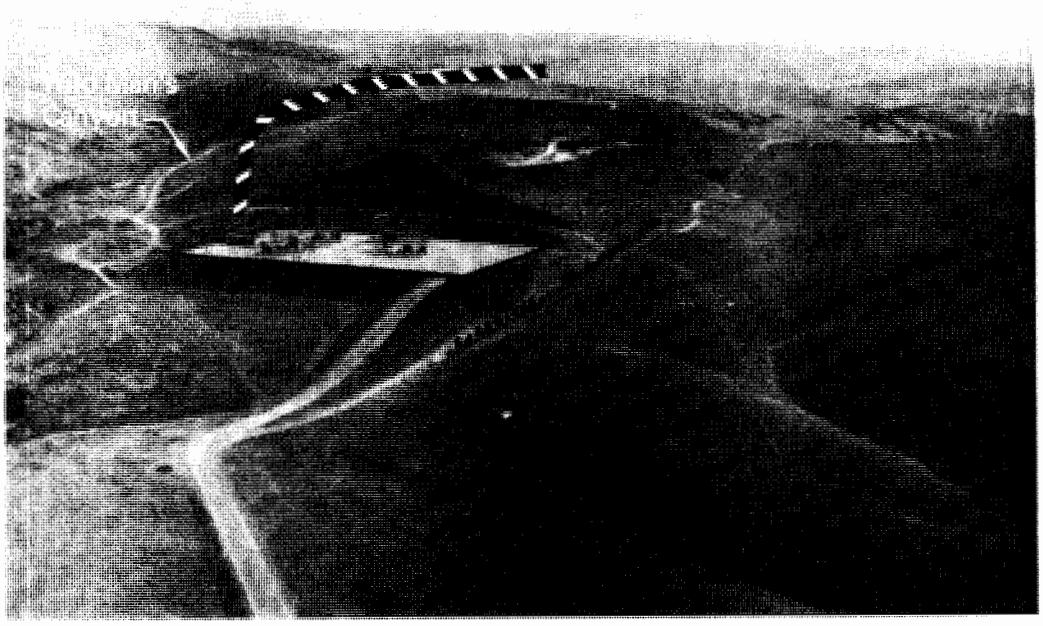

Plate 1

View of Miguel substation looking toward the southwest. Southern end of Wild Man's Canyon is visible on the left side of photo.

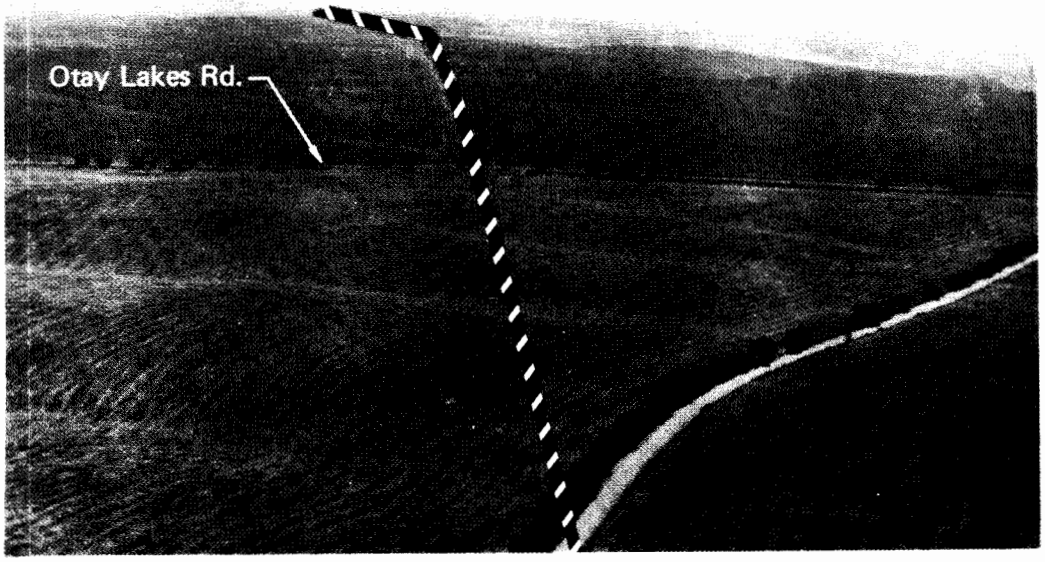

Plate 2

Photo taken toward the south across the gently rolling grassy and cultivated hills and swales. Otay Lakes Road is shown in the center of the photo. Proposed transmission line route is shown running due south to the Second San Diego Aqueduct where it turns to the southeast and drops below the horizon into Salt Creek.

The dominant visual characteristic of this area is agricultural as illustrated on Plate 4. Salt Creek, a gently sloped drainage, is one of the more outstanding topographic features between Otay Lakes Road and Otay Valley. In the vicinity of Salt Creek and other drainages the grassy and cultivated vegetation to the north and west is replaced by low scrub as shown on Plate 5. Salt Creek and other small drainages terminate in Otay Valley on the south.

Otay Valley crosses the proposed corridor on a near east-west axis. This valley has relatively steep slopes with a wide, nearly-flat bottom. Visually, Otay Valley includes clusters of trees and riparian vegetation and large deposits of gravel and stream deposits as shown on Plate 6. Man made visual features include an on-going sand and gravel quarry operation with an associated roadway network, and also utility lines running on both the north and south side of the valley. On the eastern side of the corridor Lower Otay Filtration Plant is visible, as well as the Otay County Park camping areas (refer to Plate 7).

Visual features within the proposed corridor and to the south of Otay Valley include three canyons that extend to the southeast across Otay Mesa. The largest canyon is O'Neal which begins on the west side of the proposed corridor and swings to the southeast, crossing the corridor. Between the other two canyons is a reservoir as shown on Plate 8.

To the south of these canyons, the visual character of the proposed corridor is largely a product of the eastern edge of Otay Mesa where it interfaces with the western foot of the San Ysidro Mountains. Present and previous agricultural uses dominate the Otay Mesa portion of the corridor as shown on Plate 9. The Kuebler Ranch house and surrounding structures provide a visual focal point. At the extreme southern end of the corridor there are gentle grassy slopes that show no signs of cultivation. The international border is marked by a dilapidated wire and cable fence.

M. SOCIAL AND ECONOMIC RESOURCES

1. Demography

The entire study corridor is located in the southwestern region of San Diego County, in the Sweetwater and South Bay census subregions (Figure 3-7). The pertinent census tracts (c.t.) are numbers 100.07 in South Bay subregion, and 133.05 and 134.04 in Sweetwater subregion (see Figure 3-7). A special census conducted in 1975 (Comprehensive Planning Organization-San Diego Region, 1976) shows a population of 68,863 in the South Bay subregion, but only 665 of these people reside in the 100.07 census tract. The Sweetwater subregion population is 18,764, with 12,098 in c.t. 133.05 and 134.04. Table III-8 shows housing information from the 1975 special census, for the census tracts of interest.

A forecast prepared by the Comprehensive Planning Organization shows a projected population increase from 1975-1995 of 53.5% for the South Bay subregion and 346.6% for the Sweetwater subregion (Comprehensive Planning Organization - San Diego Region, 1977). A plan for development of the Otay Mesa East - Brown Field areas (in the South Bay subregion) recommends a mix

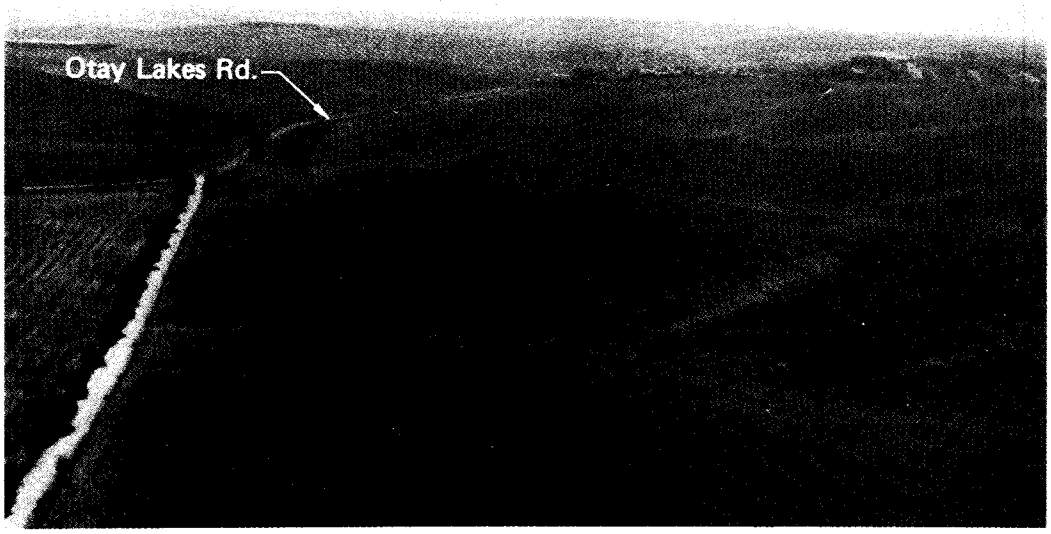

Plate 3

Photo taken in a southwesterly direction shows the gently rolling cultivated hills and swales located both north and south of Otay Lakes Road (Telegraph Canyon Road). Residential development along Telegraph Canyon Road to the west of the corridor can be seen on the right side of photo. On the left side of the photo the tree lined road connecting Proctor Valley Road & Telegraph Canyon is visable.

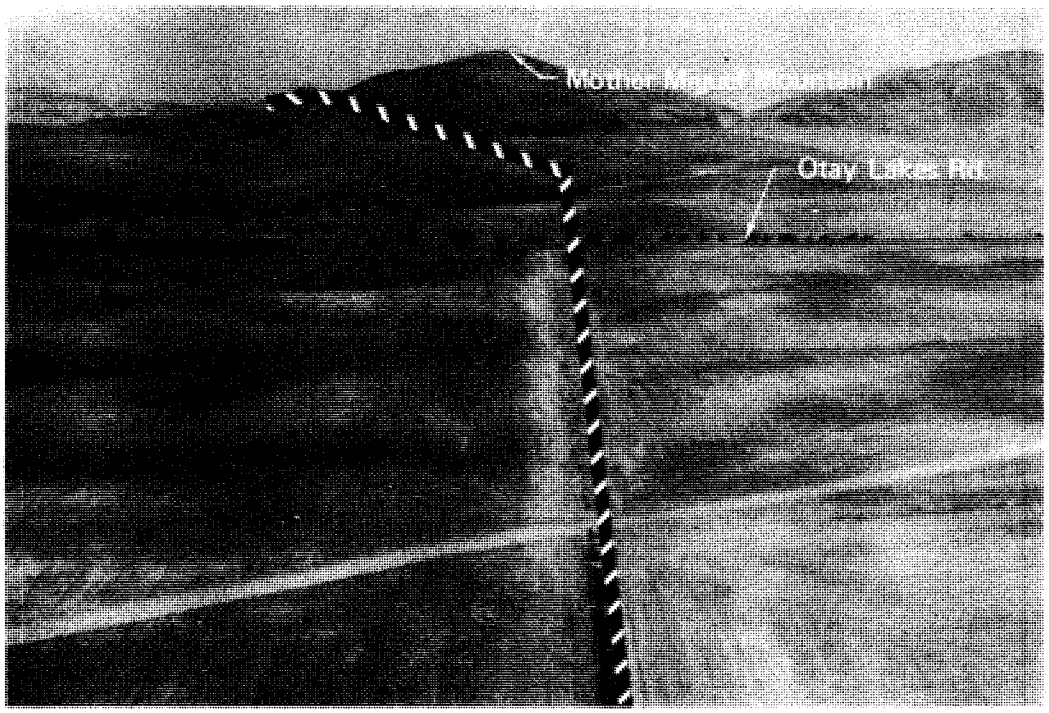

Plate 4

Photo taken toward the north showing Mother Miguel Mountains in the background (top center of photo). The proposed transmission line route runs from the foreground due north along a fence line and across Otay Lakes Road to Proctor Valley Road. At Proctor Valley Road the line would swing toward the northwest passing over a low ridge and drop below the horizon into Wild Man's Canyon.

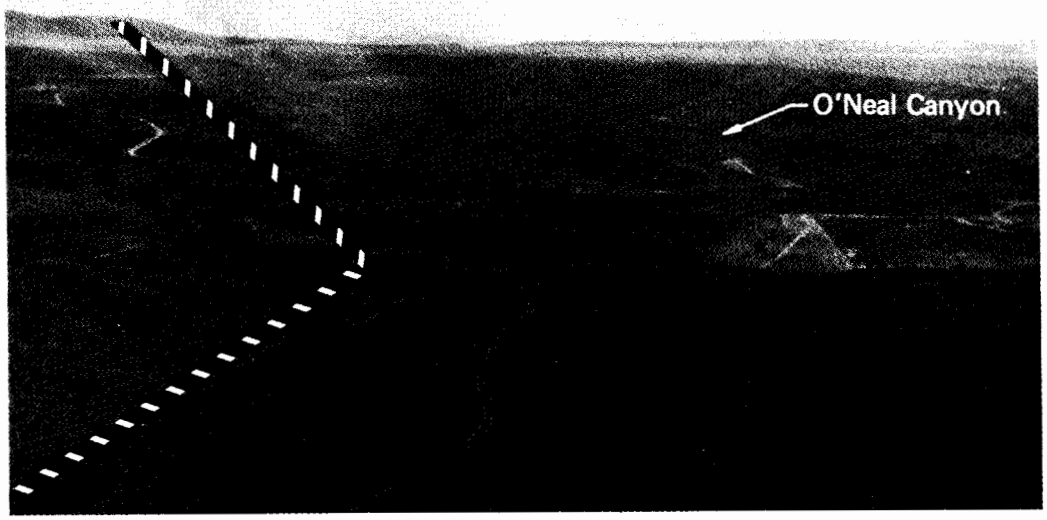

Plate 5

Photo taken in a southerly direction across Otay Valley showing proposed transmission line crossing on left. Gravel quarry can be seen on the center right of photo and above it is O'Neal Canyon.

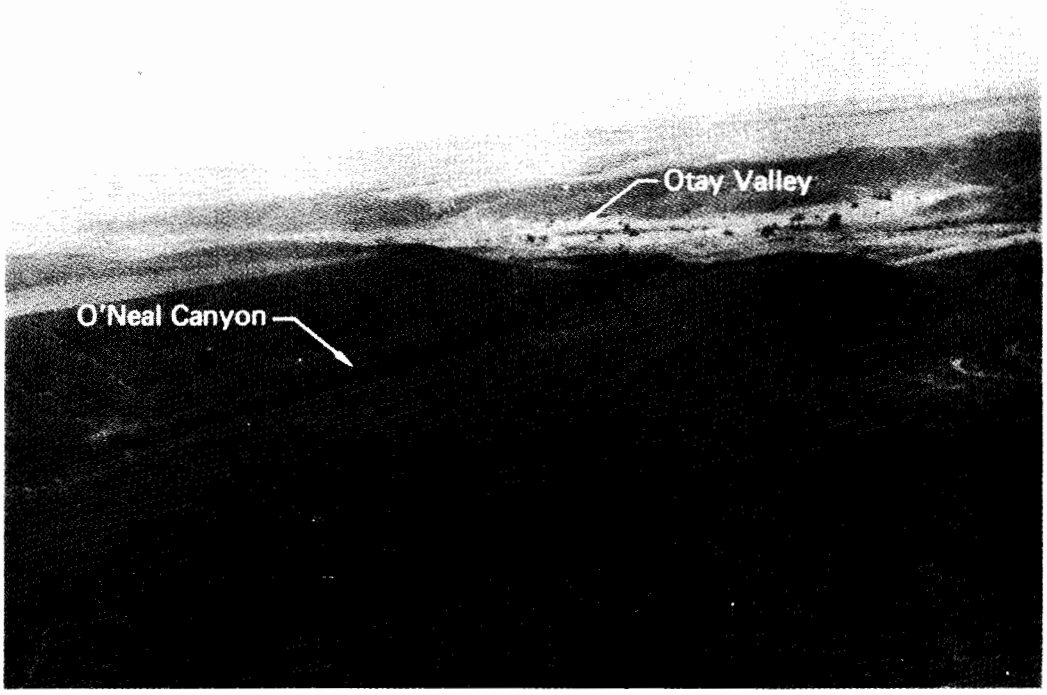

Plate 6

Photo taken toward the northwest with Otay Valley passing across the upper central part of photo. The confluence of Otay Valley and O'Neal Canyon as well as the canyon immediately east can be seen.

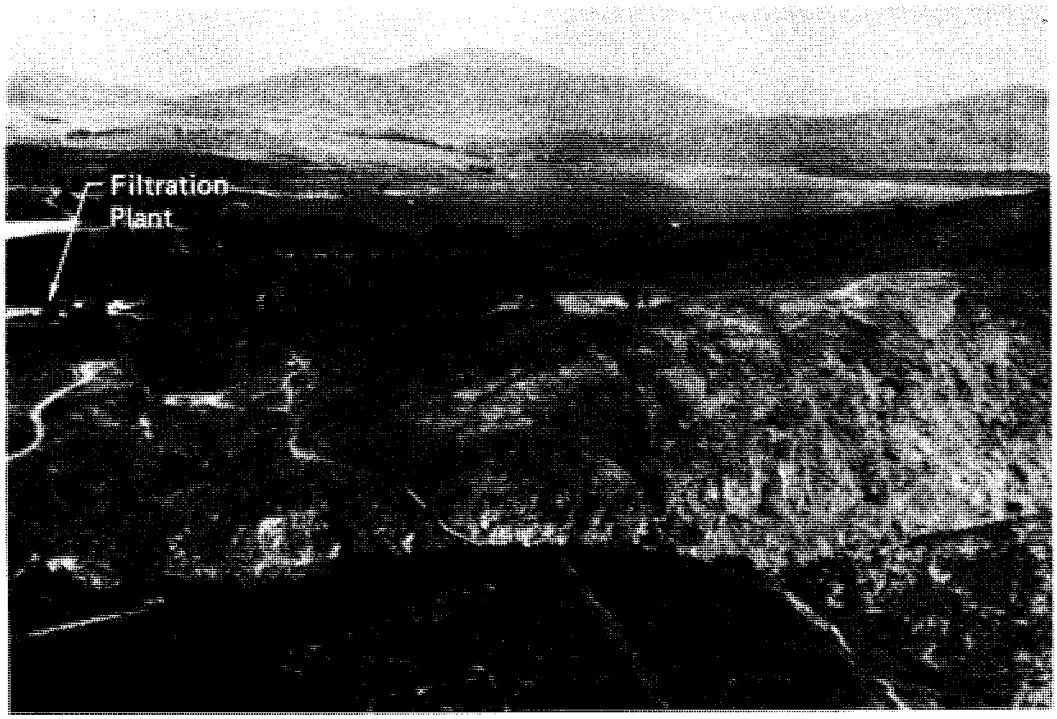

Plate 7

Photo taken toward the north with San Miquel Mountain in the background, and Lower Otay Reservoir near the center of Photo. The Lower Otay Filtration Plant is on left side of photo just west of Lower Otay County Park Campground.

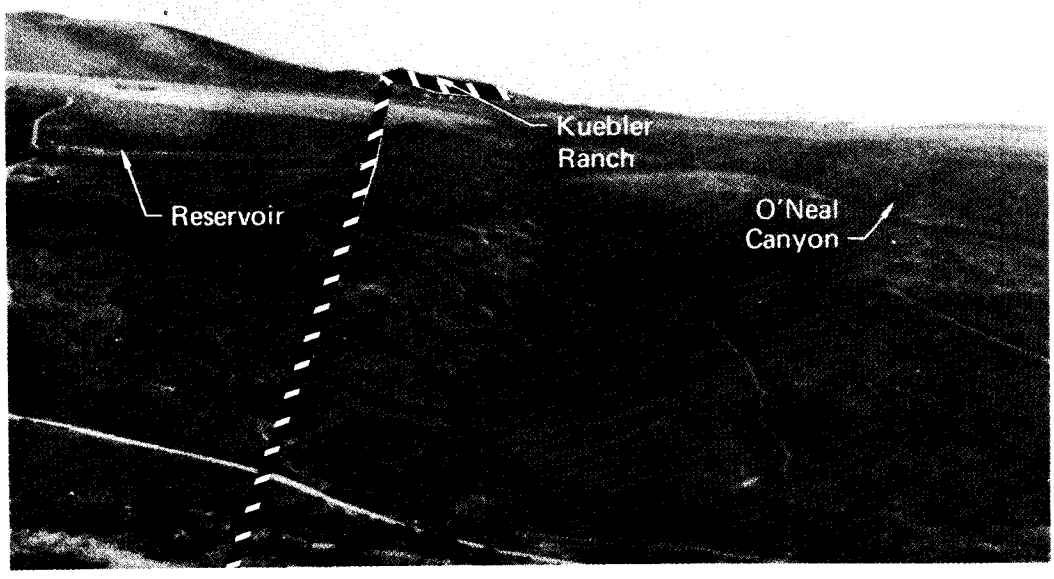

Plate 8

Photo taken toward the southeast from Otay Valley. The Canyon immediately east of O'Neal Canyon is in the foreground. The proposed transmission line route is shown passing along the east side of the canyon and to the west of the reservoir. The route passes east of the Kuebler Ranch structures over the toe of a small hill.

Plate 9

Photo taken toward the northwest showing O'Neal Canyon and the Kuebler Ranch.

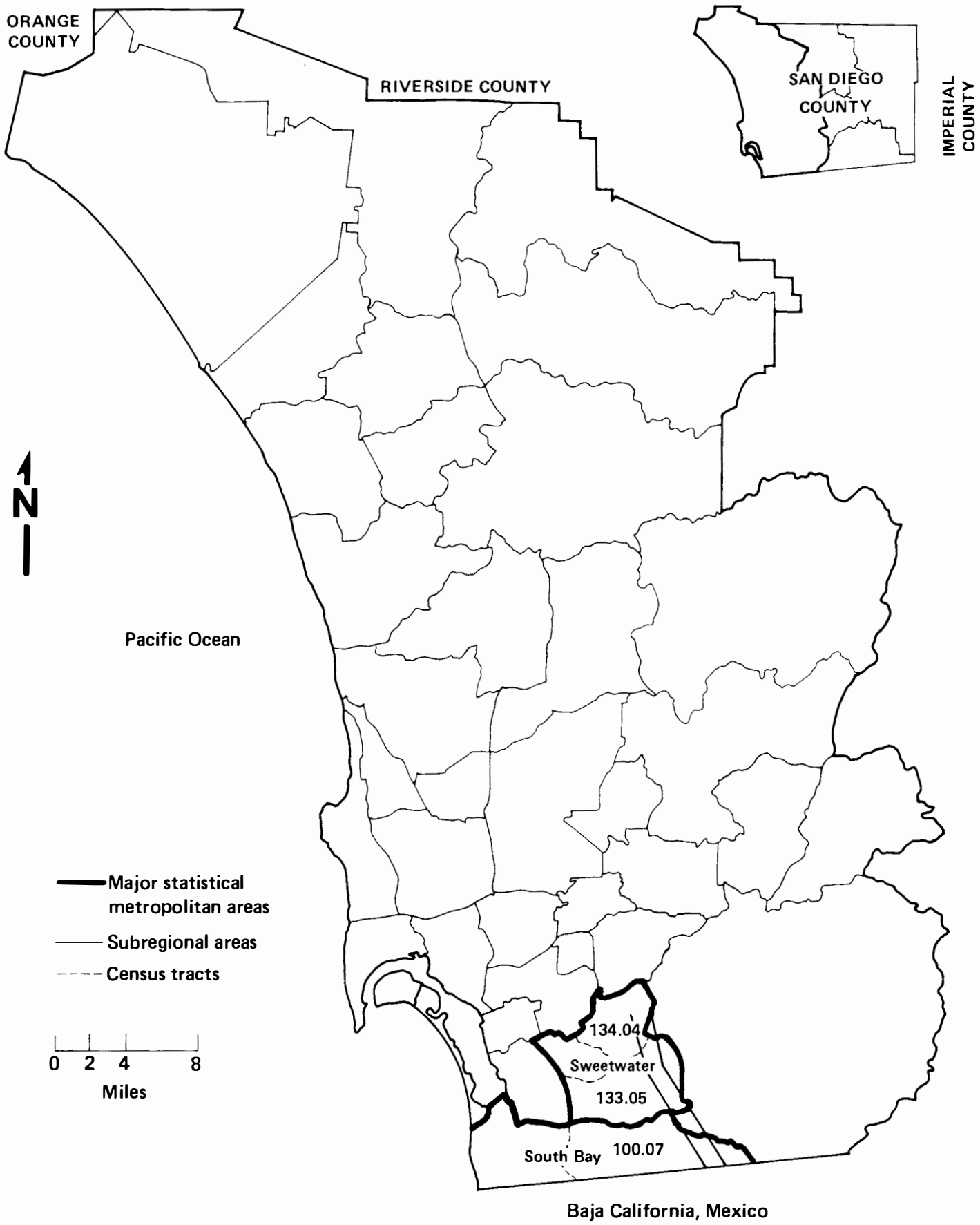

Figure 3-7. The proposed corridor lies within the Sweetwater and South Bay census subregions. The corridor is primarily within three census tracts, 100.07, 133.05 and 134.04.

of land uses including an international border crossing east of Brown Field, industrial development and residential communities allocated throughout the planning area in response to planning criteria such as terrain and transportation needs (City of San Diego Planning Department 1979). Implementation of this plan would increase the population in census tract 100.07 at a faster rate than past trends would indicate. The City of Chula Vista also has a long range growth management policy. Phase III of five in the plan would include annexation of the area as far east as Wildman's Canyon (site of the Miguel substation); this is not expected for many years (Nessel, 1980). The median household income in 1975 was $5,533 in census tract 100.07; significantly less than the median incomes in census tracts 133.05 and 134.04, which were $15,138 and $18,411. (San Diego County Integrated Planning Office, 1976b.) A comparison of ethnic origin of household heads for the census tracts of interest is given in Table III-9.

Table III-8

HOUSING UNITS IN SELECTED CENSUS TRACTS

Census Tracts	Total	Housing Units		
		Single Family	2 or more units	Mobile Home & Misc.[1]
100.07	211	121	40	50
133.05	1627	1626	0	1
134.04	1877	1677	5	195

[1]Includes one-room housing units (hotels), houseboats used as permanent homes, etc.
Source: San Diego County Integrated Planning Office, 1976a.

Table III-9

COMPARATIVE ETHNIC ORIGIN OF HOUSEHOLD HEADS IN SELECTED CENSUS TRACTS 1975.

Census Tract	Household Population (Total)	Ethnic Origin of Head			
		No Response or Unknown %	White %	Latino %	Other %
100.07	662	14	31	53	3
133.05	5,716	1	84	8	7
134.04	6,294	4	89	4	3

Source: Comprehensive Planning Organization - San Diego Region, 1976.

The only residents within the applicant's proposed corridor are occupants of the Kuebler Ranch. The closest residents outside of the proposed corridor are at the Fenton Ranch about one half mile away.

2. Economic Resources

The international border has a major impact on San Diego County economics. The county is closely linked in many ways with the Tijuana and Baja areas of Mexico. The movement of people between countries means that money flows in both directions. The major economic effects of the border are in the areas of tourism and retail trade. Table III-10 shows the employment figures for major sectors of employment for 1972 and 1977.

Table III-10

SAN DIEGO COUNTY EMPLOYMENT BY MAJOR SECTOR FOR 1972 AND 1977.

Sector	Jobs 1972	Jobs 1977	Increase
Retail trade	77,900	101,700	30.8%
Services	82,500	106,400	29.3%
Government (all levels)	110,000	130,700	18.2%
Manufacturing	66,700	73,700	10.4%
Agriculture	11,100	14,100	27.3%
Construction	27,100	29,300	8.9%

Source: Border Area Development Study, 1978.

N. CULTURAL RESOURCES

1. Archaeology

There are several archaeological sites recorded within the proposed corridor. Pertinent archaeological data were reviewed at the San Diego Museum of Man and San Diego State University, as well as the National Register of Historic Places (WESTEC Services, Inc., 1979). This review yielded 17 previously recorded archaeological sites during occasional surveys in the area and an intensive field investigation of the northern portion of the corridor (Kaldenberg, 1975). In addition to these previously recorded sites, ten sites were found during a 20% survey of the proposed corridor (WESTEC, Inc., 1979). Thus, a total of 27 sites are known to exist within the project area, including a village site, temporary camping sites, lithic scatters and quarry sites. The 27 sites are listed in Table III-11. The locations of the archaeological sites are not described here in order to prevent possible acts of vandalism and unauthorized collection of cultural materials. The locations of the sites are on file with the ERA and CPUC.

TABLE III-11

ARCHAEOLOGICAL SITES WITHIN THE CORRIDOR

Site	Site Type	Site	Site Type
W-170	Village	W-644	Quarry & flake scatter
W-171	Rock quarry & camp site	W-645	Quarry site
W-452	Lithic scatter	W-648	Occupation site
W-453	Occupation site	W-2202	Tools & flakes
W-507	Lithic scatter	W-2203	Lithic scatter
W-508	Tools & flakes	W-2204	Lithic scatter
W-509	Lithic scatter	W-2205	Lithic artifacts
W-510	Lithic scatter	W-2206	Lithic scatter
W-511	Lithic flake scatter	W-2207	Lithic scatter
W-512	No site type noted	W-2208	Cores & flakes
W-513	Lithic scatter	W-2209	Lithic scatter
W-640	Occupation site	W-2253	Tools & flakes
W-642	Lithic scatter	W-2254	Flakes
W-643	Midden deposit		

The additional ten sites found during the 20% survey of the proposed corridor indicated a high probability for archaeological resources throughout the entire project area. The archaeological resources vary, from sites that apparently possess little scientific, cultural, or aesthetic value, to ones that may be eligible for the National Register (at least four sites may be eligible according to WESTEC Services Inc., 1979). A 100% survey will have to be conducted along the proposed right-of-way, and additional information compiled in order to determine the eligibility of the sites for the National Register of Historic Places. This determination applies to any site that might be impacted by the construction or operation of the transmission line.

The archaeological resources identified in the project area may possess significant information about prehistoric lifeways such as diet, seasonability, lithic technology, settlement patterns and regional dispersal (WESTEC Services, Inc. 1979). In addition to scientific information, the prehistoric sites may possess ethnic or spirtual values to Native Americans that must be considered.

2. Historic Resources

The Kuebler Ranch, located in the proposed corridor approximately two miles north of the international border, is one potential historic resource (WESTEC Services, Inc., 1979). A complete historic resource evaluation of the proposed route has not been conducted to determine the presence or absence of historical resources in the project area.

3. Paleontological Resources

No fossils are reported to have been collected in the proposed corridor although several fossil-bearing formations occur in the corridor. These formations have produced significant paleontological resources in nearby areas (WESTEC Services, Inc., 1979). Specifically, geologic formations in the area known to produce paleontological resources are Jurassic Santiago Peak Volcanics and late Eocene Mission Valley Formation.

SECTION IV. ENVIRONMENTAL CONSEQUENCES

The direct effects of the proposed transmission line result from its construction and operation; the indirect effects result from the manufacturing of the materials that are used for its construction such as towers, insulators and transformers. The indirect effects of the project are minimal and difficult to separate from on-going manufacturing.

The direct effects include disturbance of approximately 15 acres of ground during the construction phase of the project. An estimated 45 towers are expected to disturb permanently 1000 square feet each, or a total of 1.1 acres. A maximum of five pulling and tensioning sites would each disturb 30,000 square feet, or 3.4 acres total. A estimated five miles of access road averaging 18 feet wide would disturb 10.9 acres. An area of up to 40 acres may be temporarily disturbed by trampling and foot traffic during tower assembly. These disturbances from construction activities could potentially impact cultural resources and rare or endangered plant species. The transmission line would also result in a visual impact and an aviation hazard to the Border Patrol aircraft that survey the Otay Mesa area. These direct environmental consequences are described in detail subsequently.

The environmental consequences of the proposed project will only be considered within the boundaries of the United States and not the Republic of Mexico as specified in Executive Order 12114. The applicable interpretation of Executive Order 12114 by the Assistant Secretary for Environment is presented in the appendix of this environmental document.

California regulations (General Order 131b) require a discussion of environmental effects to California due to parts of a project outside of the state. The only such effect associated with the power line interconnection is air pollution originating from Cerro Prieto Geothermal generation in Mexico. This air pollution effect is apparently not a problem as explained subsequently under "2. Air Quality".

The proposed alignment is shown on Figure 4-1, together with seven alternate alignments. These alternate alignments and the proposed alignment are referred to throughout the subsequent sections that describe the environmental effects.

A. ENVIRONMENTAL EFFECTS

1. Electrical Effects

(a) Visible Light

Corona discharge can result in the release of energy in the form of visible light. Because the amount of light generated by corona is very small, it can only be seen at night. Visible light emission is most likely to occur in wet weather, which is infrequent in the project area. No environmental problems are anticipated with the proposed transmission line due to visible light emissions.

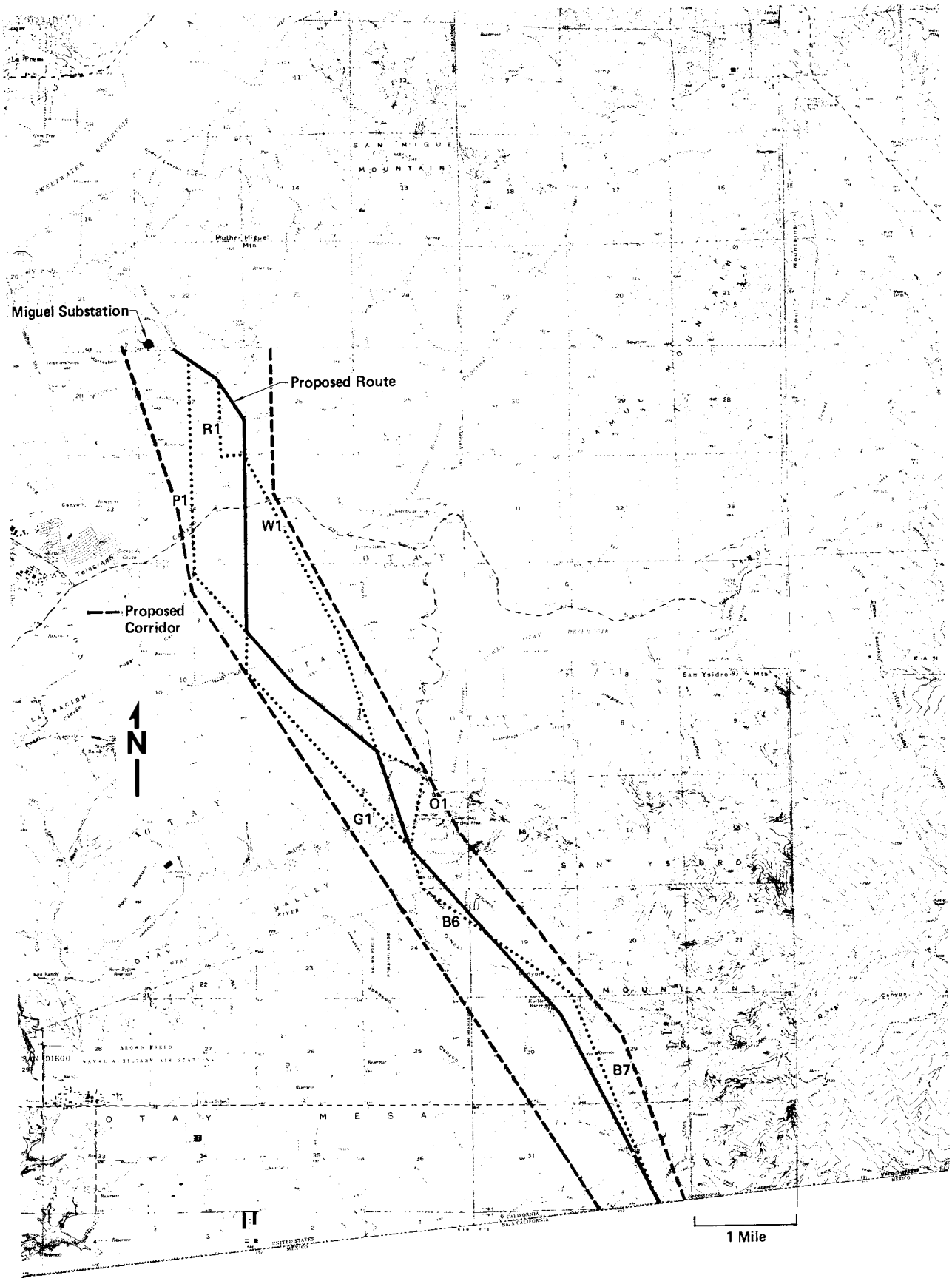

Figure 4-1. Seven alternative route segments are shown within the proposed corridor along with the Proposed Route. Each alternative route segment is designated with a symbol such as R1 or W1.

(b) Radio and TV Interference

Reception of radio and television signals can be disrupted in the vicinity of transmission lines. This interference is caused by two sources, gap discharges and corona. Gap discharges may occur because of loose hardware and can be easily located and eliminated. Corona discharges can interfere with four kinds of signals: two-way radio communication, AM radio, FM radio, and television broadcast. This effect depends upon a number of factors, including distance from the line to the receiver, radio signal strength, ambient radio noise level, orientation of the receiving antenna, weather conditions, and the transmission line-generated radio noise level.

FM radio interference is not expected to be a problem because the radio noise levels generated by the proposed transmission line are very low in the high frequency bands used for FM broadcasting.

Most two-way radios operate with FM units and should not be affected by transmission line radio interference. However, citizens band radios operate at frequencies where line generated radio noise may be higher than ambient levels. Interference could occur within the right-of-way, but will fall off rapidly outside it.

The AM radio band could suffer some interference outside the proposed right-of-way, since most radio noise generated by the transmission line will fall in AM frequencies. The impact of this interference will depend largely on weather conditions and on received radio signal strength. Interference levels will be significantly higher in wet weather. Studies have been carried out by SDG&E to determine the effect of the proposed transmission line on radio reception in the vicinity of the right-of-way. In an area near the Miguel Substation the number of AM stations received satisfactorily by FCC standards (24 dB or better) was recorded. When the dB levels of the initial data were compared with computer-simulated noise profiles of the proposed transmission line, it was found that 23 of 24 primary service AM stations in the area would be received satisfactorily as close as 50 feet from the edge of the right-of-way. All 24 stations would be received satisfactorily at 300 feet from the right-of-way edge.

While television audio signals will probably be unaffected by transmission line interference since they are frequency modulated (FM), picture signals could be disrupted close to the right-of-way. Television interference would be evident on the screen as dots, snow, bars, or bands. Five television stations providing Grade B service and received satisfactorily (40 dB or better) at a point near Miguel Substation were monitored in a study by SDG&E. Comparison with the expected television noise profile of the proposed transmission line indicated that all five stations would still be received at 40 dB or better at distances as close as 50 feet from the edge of the right-of-way.

(c) Other Interference

(1) U.S. Border Patrol and U.S. Customs Service

The U.S. Border Patrol uses a network of personnel and vehicular sensing devices and a variety of other sensing methods. SDG&E has been working with the Border Patrol to determine the effects of transmission lines on these devices. The jurisdiction of the Border Patrol and the configuration of the networks in relation to the proposed transmission line is such that the Customs Service surveillance is not affected by the line.

SDG&E and the U.S. Border Patrol have conducted tests on a 500 kV line in Arizona in the course of studies for the Eastern Transmission Line Interconnection proposed by SDG&E and Arizona Public Service. These tests show that one kind of sensor is interfered with at distances up to 400 feet from a 500 kV line. Beyond this distance, the device works properly. Other sensors are not affected. Even with this 400 foot interference, the Border Patrol feels it can still operate its surveillance program effectively (Bromfield, 1980). There may be circuitry changes that would improve the performance of the one affected sensor, nearer the line. Other kinds of sensors can be substituted. The interference effect of a 230 kV line is expected to be less than that of a 500 kV line (Bromfield, 1980).

(2) State Prison Site

The easternmost alternate site for a California State prison is within about a mile of the proposed route. The State Board of Corrections, architects, and surveillance designers for the prison indicate that the proposed 230 kV line will not interfere with the prison, or with its surveillance systems (Sutliff, 1980; Asano, 1980).

(3) Repeater Stations on Otay Mountain

There are a number of repeater stations on Otay Mountain. They will not be affected by the 230 kV line, located five miles and about 3000 feet below the stations (Spillman, 1980).

(4) U.S. Space Surveillance System Brown Field Receiver Site

This station is located on the northeast edge of Brown Field, about three miles from the proposed route. SDG&E performed a simulation of the maximum interference of the line. The interference frequency in question attenuates to zero at 180 feet from the line, with no effect on the station three miles distant (Winter, 1979).

(5) A VORTAC navigation facility is currently being installed 2.2 miles north of Brown Field about 2 to 3 miles west of the proposed transmission line route. The Federal Aviation Administration indicates that they do not anticipate any interference to their VORTAC navigation system from the operation of the transmission line (Tompkins, 1980).

d. Ozone

High voltage transmission lines can generate ozone due to corona effect. The potential impacts on air quality are discussed in Section IV, A., 2. Air Quality.

(e) Audible Noise

Corona discharge, especially in wet weather, can cause audible noise emissions. The effects of transmission line audible noise are discussed in Section IV, A., 3. Noise.

(f) Transmission Line Fields

(1) Electrostatic Effects

Any conducting object placed in an electric field and insulated from the ground will develop an electric potential. If a person touches such an object, charged by an electric field, there may be a spark discharge like that experienced from touching a doorknob after walking over a carpet. For example, fences near the right-of-way may become charged with enough potential to cause annoyance or discomfort if touched. However, it is the policy of SDG&E to ground all metallic objects within a transmission right-of-way. SDG&E will also advise owners of buildings and other structures adjacent to a right-of-way of appropriate grounding measures if a potential problem may exist.

It is theoretically possible for gasoline vapors to ignite due to voltage induced on a well-insulated vehicle beneath EHV transmission lines. There have been no confirmed cases of fuel ignition resulting from refueling a vehicle under such a transmission line.

(2) Electromagnetic Effects

During normal operating conditions, magnetic field strength around a transmission line is too small to induce significant electrical potentials in conducting objects. However, voltages may be induced in communications circuits or pipelines that parallel the line for long distances. This effect can introduce electrical noise on communications circuits and cause corrosion of metal pipelines. The proposed transmission line will parallel the Second San Diego Aqueduct along part of its route. However, the aqueduct is concrete, with only the embedded steel reinforcing bars capable of sustaining any induced potential from the adjacent transmission line. Moreover, the pipeline is buried, which further reduces the strength of the weak electromagnetic field present at ground level. When the final alignment for the transmission line has been selected, the San Diego County Water Authority will carry out studies to determine the likelihood of corrosion on this pipeline (Ogden, 1980). Along part of the proposed route, the transmission line will be adjacent to a four-inch gas pipeline situated on the westerly edge of the aqueduct right-of-way. This pipeline is buried, thus, grounded, so induced corrosion would probably be negligible.

(3) Electromagnetic Field Effects on Biological System

The voltage applied to transmission line conductors produces an electric field in the surrounding region, while the current flowing through the conductors is responsible for a magnetic field. The maximum electric field

strength under 230 kV lines is reported as 3-4 kV/m; at the edge of the right-of-way it would be considerably less (Lee and Griffith, 1978). The maximum magnetic field strength of 500 kV lines is about 0.6 Gauss and would be less under 230 kV lines; a number of common household appliances create considerably stronger magnetic fields.

Although these electric and magnetic fields are of quite low intensity, there has been controversy in recent years over the possible biological effects of long-term exposure. Much of this interest can be attributed to a Soviet study of effects on workers in high voltage switchyards (Korobkova, et al., 1972). These investigators reported that the workers exhibited a variety of nonspecific symptoms indicating disturbance in cardiovascular and central nervous system function. There have been numerous attempts by U.S. and European scientists to substantiate these findings. Recent reviews of the literature in this field have concluded that the bulk of the evidence indicates no significant biological hazards to humans or animals from the low-level electromagnetic fields adjacent to transmission lines (Bridges, 1975; EPRI, 1979). If additional studies should demonstrate potentially harmful effects from long-term exposure to transmission line electromagnetic fields, it would be possible to require an appropriate building setback for any future residential development.

2. Air Quality

Construction of access roads and clearing of tower sites will result in elimination of vegetative cover and soil disturbance. These grading operations, as well as subsequent vehicular traffic, will generate particulates (dust). This dust could create a short-term localized impact on air quality. There is also the possibility that workers will be exposed to increased risk of contracting valley fever (coccidioidomycosis), a respiratory infection caused by inhalation of fungal spores present in soils and dust.

Operation of vehicles and motorized equipment during transmission line construction will result in temporary local increases in emissions of such pollutants as hydrocarbons, oxides of nitrogen, and carbon monoxide. There are no air quality monitoring stations in the vicinity of the proposed corridor, so that current ambient concentrations of these pollutants in the study area are unknown. Increases due to the operation of construction equipment will be insignificant.

Corona discharge at the surface of Extra High Voltage above 230 kV (EHV) transmission line conductors can result in the production of small amounts of ozone and even smaller amounts of oxides of nitrogen. Recent studies have indicated that even in the vicinity of transmission lines up to 765kV ground-level ozone concentrations are not elevated above the ambient level (Roach, Chartier, and Dietrich, 1973). Thus, no impacts on air quality are expected from the operation of the proposed transmission line.

Some of the CFE generated power comes from a geothermal power plant located at Cerro Prieto, Mexico (refer to Figure 1-1). This facility is about 20 miles south of the Imperial Valley city of Calexico, California,

which is situated on the international border adjacent to Mexicali. The only potential impact on California from the operation of that power plant would be air quality degradation resulting from emissions of hydrogen sulfide.

An analysis of ambient hydrogen sulfide concentrations in the Imperial Valley (Gudiksen, et al., 1979) indicates that hydrogen sulfide levels do occasionally exceed the California State Standard of 30 ppb for one hour. These excursions above the standard, however, are probably caused by the use of liquid sulfur fertilizers and not by hydrogen sulfide emissions from Mexico. The liquid sulfur fertilizers evolve hydrogen sulfide upon application, resulting in periodic violations of the standard.

3. Noise

The noise level at a particular site during transmission line construction will depend on the equipment in use and its operational mode. The installation of new lattice tower structures and conductor stringing will involve the operations described in Table IV-1 and the equipment noise levels given in Table IV-2.

In order to determine the potential for noise impacts, a Community Noise Equivalent Level (CNEL) was computed for both tower installation and conductor stringing. Most planning agencies, including those of the City and County of San Diego, use a CNEL value of 65 dB(A) as the maximum sound level compatible with residential land uses. When noise attenuation due to distance and atmospheric absorption is calculated, it appears that the 65 dB (A) CNEL contour would extend no further than about 300-400 feet from construction activity areas. All residential receptors, with the exception of the Kuebler Ranch, are at least 2000 feet from the edge of the transmission line corridor. No adverse impacts from construction noise are expected. The Kuebler Ranch is within the corridor and the applicant's proposed alignment would pass adjacent to the ranch buildings. Potential tower sites are approximately 500 feet from this residence, however, so that construction noise should not exceed a CNEL value of 65 dB(A).

During operation of the proposed transmission line, corona discharge can result in the production of audible noise. Audible noise is most noticeable on transmission lines of 500 kV or higher voltage, where it appears as a random broadband, crackling, hissing sound. Audible noise from a 230 kV line will occur principally during foul weather. Noise levels are generally highest during heavy rain, but will tend to be masked by the sound of the rain. However, noise during fog and light rain may be audible in the immediate vicinity of the transmission line because of the lower ambient noise level. A 230 kV line constructed in accordance with CPUC General Order 95 should not emit discernible audible noise outside the right-of-way.

4. Hydrology and Water Quality

Surface water quality could be affected as a result of increased erosion where soils are disturbed along the transmission line right-of-way and

TABLE IV-1

OPERATIONS DATA FOR INSTALLATION OF NEW TOWER STRUCTURES AND CONDUCTOR INSTALLATION

Noise Source	Operation	Operational Time on Site
Augering Machine	Hole Drilling	4 hours/site
Semi Truck	Steel Delivery	1 hour/day
Equipment Trucks	Personnel & Equipment	1 hours/day
40-Ton Crane	Tower Erection	4 hours/site
Concrete Truck	Concrete Footings	1 1/2 hours/day
Caterpillar	Push/Pull	1 hour/day
Helicopter	Rope Pulling	1 hour/day
Pickup Trucks	Personnel & Equipment	1/2 hour/day
Flat Bed Trucks	Small Equipment	1/2 hour/day
Semi Trailer	Conductor Delivery	5 minutes/day
Tensioners	Wire Puller	1 hour/day
Bucket Truck	Wire Installation	4 hours/day

Source: WESTEC Services, Inc., 1979.

TABLE IV-2

CONSTRUCTION EQUIPMENT NOISE LEVELS

Augering Machine	80 dB(A) @ 50 ft.	USEPA, 1971
Semi Truck	81 dB(A) @ 50 ft.	San Diego Acoustics, 1978
Equipment/Pickup Trucks	70 dB(A) @ 50 ft.	USEPA, 1971
40-Ton Crane	83 dB(A) @ 50 ft.	USEPA, 1971
Concrete Truck	85 dB(A) @ 50 ft.	USEPA, 1971
Caterpillar	80 dB(A) @ 50 ft.	USEPA, 1971
Helicopter	87 dB(A) @ 150 ft.	EG&G, 1974
Tensioner	80 dB(A) @ 50 ft.	USEPA, 1971

Source: WESTEC Services, Inc., 1979.

access roads. Increased rates of sediment transport from such disturbed areas could contribute to downstream siltation. However, the impact would be insignificant because of the ephemeral nature of local watercourses, existing heavy sediment loadings, and the absence of high-quality permanent bodies of water downstream from the proposed corridor.

Since it is the policy of SDG&E to refrain from the use of herbicides and other forms of chemical weed and brush control within transmission line rights-of-way, there should be no impact on the quality of local surface waters from this source.

The proposed project should have no impact on the quality, quantity, or utilization of ground water in the area.

The transmission line will cross the floodplain of the Otay River; due to the width of the Otay Valley at this point, it may be necessary to locate a tower in the floodway. While storms that can result in flooding do not reach the San Diego area every year, there is a potential for flooding severe enough to cause tower washout during the operating life of the project. If a tower is constructed in the floodplain, tower construction will incorporate design features necessary to effectively protect against washout or flood damage, and to comply with Executive Order 11988.

5. Topography

The ground surface and topography will be modified in preparing tower foundations and access roadways. The degree of impact will be variable. Many tower foundations may require no surface modification, while other sites, particularly in the foothills of the San Ysidro Mountains to the south, may require some grading work.

6. Geologic Hazards

Ground accelerations from maximum expected earthquakes on the potentially active Rose Canyon and La Nacion faults could cause line breakage from differential tower swaying or possible tower failure. However, the maximum (8.5 Richter) expected earthquakes from other Southern California area faults would not have the potential to create such impacts. Other seismically-induced effects include ground failure due to landslides on oversteepened slopes or liquefaction in unconsolidated sediments. Potential impacts are the same as for ground shaking, that is, tower failure and line breakage.

7. Mineral Resources

The transmission line will be sited to avoid interference with sand and gravel extraction operations in the Otay River floodplain. Thus, no impacts on mineral resources are expected.

8. Soils

During construction of the proposed transmission line, clearing and grading for access roads and tower sites will result in exposing soils to increased erosion hazard. Construction on slopes of 15 percent or greater could lead to erosion impacts unless mitigated effectively.

9. Vegetation

Clearing for new access roads, construction staging areas, and transmission line tower sites will result in some loss of vegetation cover. The vegetation cover types impacted will be Coastal Sage Scrub and Cultivated/Previously Disturbed (refer to Figure 3-3). A total of approximately 15 acres of vegetation are expected to be disturbed by construction.

The proposed right-of-way alignment passes to the west of the Riparian Woodland habitat in the Otay Valley and no impacts to this habitat are expected from construction along the proposed alignment. An alternative alignment to the east passing across the riparian woodland is not expected to have a significant impact on this habitat.

The three areas of identified Vernal Pool habitat (refer to Figure 3-3) within the corridor are avoided by the proposed right-of-way alignment. Access roads and construction staging areas can be sited to protect vernal pools and their drainage basins. With careful planning (and implementation of mitigation measures), there should be no impacts to these important natural features and the rare and endangered plant species restricted to them. Alternative alignment segment B-6 (refer to Figure 4-1), or other alignments, offer no significant advantages in avoiding impacts to vernal pools.

The proposed right-of-way alignment spans O'Neal Canyon in a place where there are a number of unusual plant species, including Tecate Cypress. However, it should not be necessary to site tower structures or access roads in habitat that supports these high interest plants. No impacts to this natural area are expected and the alternative alignment segments B-6 and B-7 (refer to Figure 4-1) seem to provide no advantage in avoiding impacts to vegetation in O'Neal Canyon.

Although plant species currently being considered by the U.S. Fish and Wildlife Service for possible endangered status are found in the proposed alignment, impacts should be minimal. The Economic Regulatory Administration will consult with the U.S. Fish and Wildlife Service as required under Section 7 of the Endangered Species Act of 1973 for determination of possible impacts. As indicated above, species associated with vernal pools can be protected by siting all towers, access roads and staging areas to avoid this habitat. In areas where concentrations of rare and endangered species have been identified, significant impacts can be avoided by a careful botanical survey of proposed facilities sites.

10. Wildlife

The proposed project will have no impacts on aquatic habitats nor on the fish of Lower Otay Reservoir.

The proposed transmission line conductors and towers could pose a potential threat to waterbirds approaching or leaving Lower Otay Reservoir. Mortality or injury could result from collisions with these structures. In the absence of data on the flight paths or flight elevations usually followed by these birds, it is impossible to determine the potential for adverse effects more specifically.

Wildlife species that utilize the Coastal Sage Scrub and Cultivated/ Previously Disturbed vegetation types (refer to Figure 3-3) will suffer slight loss of habitat and there may be minor reductions in numbers of some of the smaller, more sedentary species. There will be no impacts on wildlife of the Riparian Woodland habitat. No state or federally-listed rare or endangered wildlife species will be adversely affected by the proposed project.

Because of the important raptor usage of habitats within the proposed corridor, possible effects of the project on these species are of concern. Although there will be minor losses of foraging habitat, the tower structures will provide resting and vantage points for raptors and may even be utilized as nest sites. Although electrocution is a significant source of mortality in large raptors such as golden eagles (Aquila chrysaetos), this is a significant problem only with low voltage local distribution lines (Ellis, et al., 1978). The wide spacing of conductors on transmission lines of 230 kV virtually eliminates the possibility of even the largest raptors contacting two wires simultaneously. Thus, no significant adverse impacts on either resident or over-wintering raptor populations are expected.

11. Land Use

(a) General Plan Growth Management Policy and Urbanization.

The City of San Diego has plans to annex the portion of Otay Mesa south of the Otay River floodplain. The proposed transmission line should not conflict with such an annexation.

(b) Current Land Uses

(1) Agriculture

The proposed route crosses 3.8 miles of potentially productive agricultural land (refer to Fiture 4-7) and would require about 17 tower sites. These tower sites would disturb approximately 1000 square feet each or a total of 0.4 of an acre. Other disturbance from access roads, staging areas and pulling sites (sites used to set up cable reel trucks and line-pulling equipment) would disturb a maximum of five acres. Actual

disturbances are expected to be less than this because of the relatively flat topography and also because the route passes along fence lines and section lines and parallels the Second San Diego Aqueduct where there are existing access roads. Therefore, a maximum of 5.4 acres of potentially productive agricultural land could be impacted by construction of the transmission line along the proposed route.

Construction disturbances within staging areas and pulling sites would only temporarily disrupt agricultural activities. Subsequent to construction, no restrictions are placed on agricultural use of the right-of-way. Only tower footings and access roads will be constantly maintained, and these will result in the permanent loss of less than 4 acres of agricultural lands.

The transmission line represents an obstacle to crop dusting and towers are an obstacle to tractors and farm equipment used during cultivating and harvesting operations. Towers are also an obstacle when traveling sprinklers are used. Currently no traveling sprinklers are used in this area.

Alternative Routes P1, R1, B6, and B7 (refer to Figure 4-1) all impact a similar amount of agricultural land as the comparable segments of the proposed route (refer to Figure 3-6). Alternative Route G1 crosses about one-half mile more of agricultural land than the comparable segment of the proposed route. Route W1 crosses about 1.8 miles less agricultural land than the comparable segment of the proposed route. However, Route W1 does not run along fence lines nor the second San Diego Aqueduct right-of-way and would therefore have a greater impact to agricultural uses. Neither Route O1 nor the comparable segment of the proposed route crosses agricultural land.

(2) Other Uses and Public Services

The transmission line will not directly affect the operations of the quarry, the Otay Filtration Plant, the BLM land, the proposed prison, or the proposed second international border crossing. The transmission line will have a limited visual impact upon some locations of the Lower Otay Reservoir Park. This visual impact is limited to a portion of the campground area where about a one mile segment of the line will be visible beyond the filtration plant in the Otay Valley a half mile away. Portions of the line may be visible from other high vantage points in the park.

There will be no impact on any public service or facility resulting from the transmission line.

(c) Air Navigation Considerations

(1) Brown Field Air Operations

The study corridor is outside the unobstructed area shown on Figure 2-3. Therefore it will have no impacts on the current flight operations. Brown Field has been considered as a possible site for the relocated San

Diego International Airport (see Section III, K., 6). But according to the FAA (Binzak, 1980), selection of the Brown Field site would be unlikely because of air traffic associated with the Tijuana International Airport and the height of the surrounding terrain. It is conceivable that the proposed transmission line would represent an additional constraint to the relocation of the International Airport at Brown Field. However, the existing constraints appear to be far more significant.

(2) U.S. Navy SEAL Team Parachute Drop Zone and Helicopter Maneuver Areas.

The Navy Sea Air and Land (SEAL) Teams may not drop within 2 km of high tension wires (Decker, 1980). The proposed route of the transmission line will not impinge on this air space.

(3) U.S. Border Patrol and Customs Service Air Surveillance Operations

The location of the proposed transmission corridor could have an adverse impact on Border Patrol operations in the area. The San Diego County-based Border Patrol makes routine low-level night flights over the area from Otay Mountain west, as well as daytime flights from the Imperial County border west to the ocean. They believe the proposed location of the transmission corridor presents a safety hazard to their flight surveillance activities (Boleman, 1980). There are mitigation measures that can be taken to substantially reduce this adverse impact. These mitigations are described subsequently under, "B. Possible Mitigation Measures".

The Customs Service also has frequent flights in the area, but as their flights are conducted at higher altitudes, the proposed transmission line would have no impact on their operation in San Diego County.

12. Visual Effects

Construction of the transmission line within the proposed corridor will visually alter the landscape. Along the northern sector of the corridor, north of Proctor Valley Road, the line would pass over a rounded grassy ridge (refer to Plate 4). Extending south from this grassy ridge to about one and a half to two miles south of Otay Lakes Road, the 120 to 130 ft tall transmission towers would be visible to motorists traveling along Proctor Valley Road, Otay Lakes Road and occupants of the residential development along Telegraph Canyon Road, located one to one and a half miles to the west. The segment of transmission line between a point about one and a half miles north of Otay Valley to Otay Valley would not be visible from most public vantage points. The segment of the transmission line that crosses Otay Valley would be visible from some parts of Lower Otay County Park. For example, from some parts of the camping grounds the line would be visible about one half mile beyond the filtration plant. Depending upon where the towers are placed and how long the conductor span is across the Valley, one, two or three or more towers may be visible from the park.

On the south side of Otay Valley, the transmission line will either pass along the edge of Otay Mesa or across the foot of the San Ysidro Mountains.

Under present conditions, public access to this area is only from Otay Mesa Road, and the only residents in this area are at the Kuebler Ranch located within the corridor about two miles north of international border. The visual change resulting from the transmission line south of Otay Valley will immediately affect only a limited number of people since access is limited and there are few residents in the area. However, the 125-136 ft tall towers will be visible against the San Ysidro Mountains from as far west as the Brown Field area. The proposed route will locate the towers at the toe of, or very low on the slopes of the San Ysidro Mountains and the horizon line will not be broken by towers except at vantage points relatively close to the line. An example of steel lattice towers against a mountain is shown on Plate 10. The towers shown on plate 10 support a 138 kV line that passes across the western side of Mother Miguel Mountain.

The transmisson line does not impact any designated local, state, or national scenic landmarks, but it will visually change the landscape that it passes over and add another man-made intrusion in the area such as roadways, Lower Otay County Park Campground, the filtration plant, and gravel quarry operation.

13. Socioeconomics

The transmission line will not have a significant effect upon growth or demography as explained subsequently in Section IV., G. Growth Inducing Impact. The project would not have a significant economic impact. The greatest economic impact will be energy production savings realized by SDG&E as described in Section I, Purpose and Need.

14. Cultural Resources

The project could potentially adversely affect cultural resources. There are 27 reported archaeological sites within the proposed corridor as well as a potential for ethnic, historic, and paleontological resources. Three of the archaeological sites are in the immediate vicinity of the proposed route alignment and another several archaeological sites are located near the route. Approximately 15 acres are expected to be disturbed by construction of towers, staging areas, conductor pulling sites, and access roads. These disturbances could potentially impact archaeological, ethnic or paleontological resources.

The alternative routes illustrated on Fig. 4-1 have approximately equal potential for impacting cultural resources except for Alternative Routes R-1 and P-1. Alternative Route P-1 would have a higher potential impact than Route R-1 because it traverses a greater distance (about 2000 ft) across a large archaeological site in which topography dictates tower placement.

Impact to cultural resources can be avoided or reduced by mitigation measures described in Section IV, B., 2. These mitigations essentially consist of conducting a 100% survey by a qualified archaeologist and paleontologist of all areas that will be disturbed and contacting Native Americans for determination of ethnic resources. The significance of

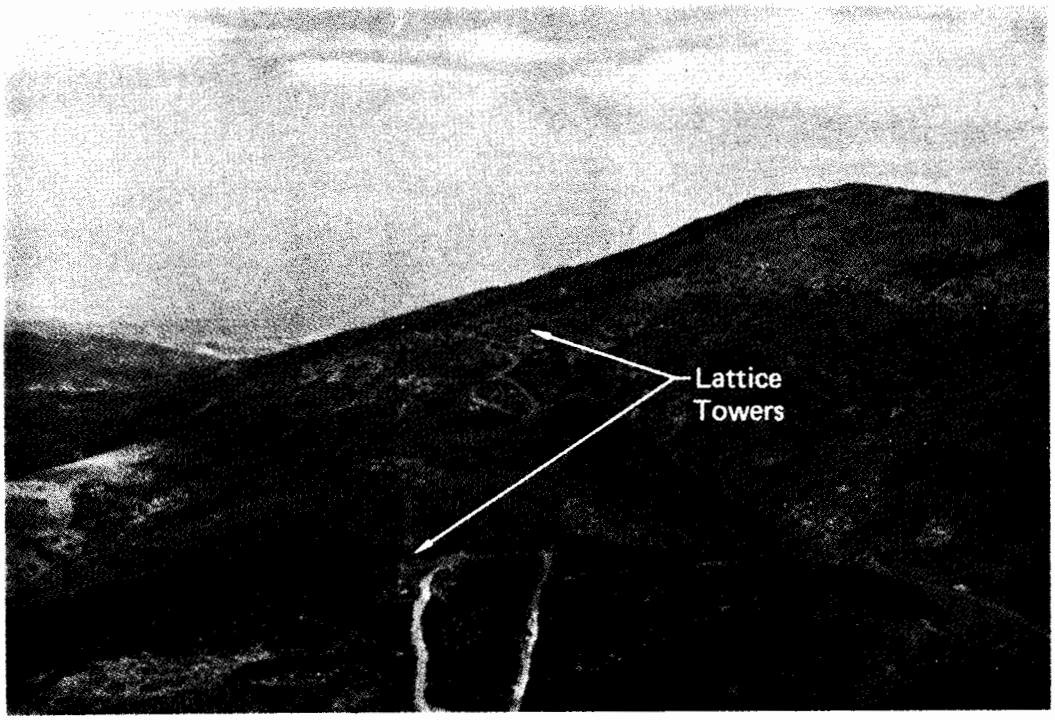

Plate 10

Photo taken toward the northwest (north of the proposed project) showing an existing 138 kV transmission line crossing the western side of Mother Miquel Mountain.

cultural resources that cannot be avoided must be determined and acceptable recovery programs instituted.

B. POSSIBLE MITIGATION MEASURES

1. Technical Factors

(a) Undergrounding

Undergrounding the transmission line would mitigate visual impacts of the overhead line as well as eliminating an obstacle to the U.S. Border Patrol aircraft surveillance. Undergrounding the transmission line would require placement of two high-pressure oil-filled (HPOF) steel pipes in a common 4-foot wide, 4½-foot deep trench centered within a 36-foot wide right-of-way (PG&E, 1979). Each steel pipe would enclose three 230 kV single-conductor cables. Approximately 23 manholes, twenty feet long, eight feet wide and seven feet deep spread 2300 feet apart would be required. Upon completion of pipe and manhole construction, the cables would be pulled into the pipe sections between manholes. Cable ends would be spliced in each manhole and housed in a welded steel casing. After cable splicing, the steel pipes would be filled with oil and hydraulically connected to oil pressurizing equipment and reservoirs to maintain an oil pressure of 200 pounds per square inch (PSI) in the pipe. Above ground porcelain housing would be required at each end of the route. Loss of heat from energized cables would cause thermal expansion and contraction of the insulating oil. In order to maintain constant pressure, special pumps, storage reservoirs, and other equipment would be required. This equipment would be housed in structures at each end of the transmission line. The structures would be approximately 9 feet tall, 11 feet wide, and 50 feet long. Undergrounding the transmission line would reduce visual impact and hazards to Border Patrol aircraft surveys, but it would also generate other impacts. The ground disturbance would be significantly greater, since there would be about five acres excavated in trenching for the line. In addition, excavation for manholes would be required. This excavation is in addition to access roads that will be required for either underground or overhead line. The required excavation would impact archaeological resources and possibly other cultural resources. The underground line would have to be placed relatively deep or in a concrete structure where it crosses the Otay River. The gravel extraction operation in Otay Valley would be restricted within the right-of-way. Similarly, all agricultural activity involving cultivation of the soil would be restricted within the right-of-way. There is also a possibility the pressurized oil system could develop leaks, which could pose a potential ground water contamination problem.

The undergrounding would require substantially more materials, energy, and manpower than the proposed overhead line.

(b) Alternative Structure Design and Color

The visual impacts and aviation hazards from the transmisson line can be mitigated by tower design and color. There are two alternate tower designs to the proposed steel lattice towers, a steel pole structure, and H- frame wooden pole structures. A steel pole would require a 120-foot right-of-way, the same as the proposed lattice towers. Steel pole towers would also be similar in height. The span between the steel pole towers would be the same as the proposed lattice towers and therefore a similar number would be required, about 45. Construction impacts would be similar for both steel pole and lattice towers. Visually the towers are significantly different. The steel towers can generally be seen at greater distances because of their single column mass. Lattice towers are less massive and more diffuse, but have angles that contrast with a natural scenic background. The question of which tower design is more visually desirable is a subjective matter that varies with an individual's perspective.

Wooden H-frame towers would be 80 to 90 feet tall and spaced an average of about 800 feet apart. One set of H-frame towers could carry a single circuit and would require a 110 foot wide right-of-way. Two sets of H-frame towers would be required to carry a double circuit comparable to the proposed steel lattice towers. A 185 foot wide right-of-way would be required for two sets of H-frame towers. The construction impacts for either one or two sets of wooden H-frame towers would be significantly greater than the proposed lattice tower since about 20 more towers would be required by the shorter span between towers. Constructing 20 additional towers would cause a roughly 50% increase in ground disturbance from access roads. Impacts to agriculture should not change significantly from the proposed steel lattice tower even though there would be additional H-frame towers since the tower "foot print" would be smaller. The visual impact of wooden H-frame towers tends to be less than steel lattice because they are shorter and the color blends into a natural scenic background more easily. However, there would be a greater visual impact from the 20 more wooden towers required for a single circuit or 85 more required for a double circuit comparable to what the steel lattice tower would support.

Either the steel lattice or steel pole towers can be painted or colored an earth tone such as green or brown. Depending upon which color is selected, the towers would blend into the background during the spring (if green) and contrast during the fall and summer or blend into the background during the summer and fall (if brown) and contrast during the spring. In either case use of the neutral earthtone color will reduce the visual impact.

A reduced visual impact will increase the safety hazard to Border Patrol aircraft that survey the area close to the ground. Increasing the visibility of the towers by painting them white or white and red diagonal striped would increase tower visibility and reduce safety hazard to aviation. Similarly, bright colored orange or red balls on the line would reduce aviation safety hazard and increase the visual impact.

2. Construction Methods

(a) Right-of-Way Clearing

Very little clearing of vegetation in the right-of-way will be required for the proposed project, since few trees and shrubs of any significant height occur along the alignment. Hand clearing by crews with power saws will be used where necessary to fell and limb trees to provide adequate electrical clearances. This method will result in less impact than alternative techniques with motorized equipment. Any right-of-way clearance that will disturb the ground surface should be preceded by mitigation measures for biological, cultural, and paleontological resources described below.

(b) Preparation of Access Roads, Tower Sites, and Work Areas

Bulldozers will be used to clear and grade sites for access roads, towers, and work areas. Vegetation will be removed and some grading and excavation will often be required. This ground disturbance could result in destruction of surface resources such as rare and endangered plants, vernal pools, and archaeological, ethnic, or historic sites. The location of proposed construction sites should be carefully surveyed and marked as a first step in preventing impacts of this kind.

Certain habitats within and adjacent to the transmission line corridor support plant and animal species that are either listed as endangered by the U.S. Fish & Wildlife Service or are under current review for possible listing in the near future. In the former category is the southern bald eagle, which winters in small numbers at Sweetwater and Lower Otay Reservoirs. Two vernal pool plant species, the Loma Alta pogogyne and the San Diego coyote thistle, are under status review and may be listed before the end of 1980. Under Section 7 of the Endangered Species Act of 1973, the Economic Regulatory Administration will initiate consultation with U.S. Fish and Wildlife Service to determine if permitting the proposed project is likely to jeopardize the continued existence of these species or result in adverse modification of their habitats.

Following such consultation, mitigation measures (if needed) may be implemented to ensure compliance with the Endangered Species Act. Protection of the plant species can be accomplished most effectively by locating and avoiding all populations that are at risk of disturbance by construction activities. A qualified botanist could be retained to examine any proposed construction sites for the presence of rare and endangered plants and vernal pool habitat. The examination should be carried out at the most appropriate season, when these species can be readily identified. If such resources are found, proposed facilities should be re-located to avoid adverse impacts.

A 100% surface reconnaissance of the right-of-way should be conducted by a qualified professional archaeologist. Any sites that are found should be recorded and their eligibility for the National Register of Historic places

determined. Significant archaeological sites (historic or prehistoric) should be avoided if at all possible or if not possible, impacts to them should be mitigated by a recovery and curation program or other mitigation procedures approved by the California State Historic Preservation Office. Native Americans knowledgable of the project area should be contacted to determine if any ethnic resources would be impacted by the project. A paleontological survey should also be conducted in conjunction with the archaeological reconnaissance. In addition, the location of geodetic survey monuments should be determined at this time. If construction of the proposed transmission line would affect any monuments, then the National Ocean Survey of the U.S. National Oceanic and Atmospheric Administration should be notified at least 90 days prior to construction. Relocation of affected monuments will be coordinated with the Survey.

The potential for increased soil erosion along access roads, at tower sites, and in other areas where surface disturbance occurs can be reduced by a number of construction practices. Existing roads will be used for access wherever feasible. Road width will be kept to the minimum required to accommodate the euqipment that will actually use the road. Estimated access road widths will vary from 10 to 25 feet. The maximum road grade will be approximately 10 percent. The grade may be increased to eliminate steep side hill cuts and numerous switchbacks. In the event the grade is increased to 15 percent, the length of the road should not extend more than 500 feet. Cuts will be made only where necessary to reduce slopes and grades to acceptable levels. Clearing of vegetation will be minimized and blading will be used only as necessary to provide a road sufficiently clear of brush, trees, and rock to allow the movement of construction and maintenance vehicles. Areas suitable for revegetation will be reseeded with natural grasses and shrubs. Dust control will be carried out by sprinkling with water and compaction where necessary. Roads will be designed to cross streams and washes as nearly as possible at right angles. No culverts will be used where streams are crossed at gradient and no soil will be pushed into streambeds. Any culverts installed will be of adequate size to accommodate projected runoff. Ditches will be constructed where necessary to dispose of accumulated water by routing it into established stream channels or under the road by means of a culvert.

(c) Construction-Worker Camp Site

Since the project area is in close proximity to San Diego, there will be no need to establish a construction camp. Workers will be expected to commute to the work sites each day. No mitigation measures will be required.

(d) Helicopter Use

Helicopters may be used in some locations to string a pulling rope during conductor installation. Use of helicopters to move tower parts to installation sites and to assemble and erect towers could be a mitigation measure to avoid construction of access roads in rough terrain. However, it is probably unnecessary because existing roads are along much of the proposed alignment and new access road construction will be relatively simple where needed.

(e) Tower Construction in Floodplain

The transmission line will cross the Otay River at a place where the 100-year floodplain is about 1000 feet wide. Because the applicant proposes to construct one tower within the floodplain, the Department of Engery must prepare an assessment of the potential impacts of the structure on the floodplain in accordance with 10 CFR part 1022. A copy of the floodplain assessment for the proposed transmission line placement and appropriate alternatives is included in Appendix C.

(f) Construction Noise

Since potential noise impacts from transmission line construction will be insignificant at the nearest sensitive receptor, no mitigating measures will be necessary to protect existing land uses.

3. Operation and Maintenance

(a) Right-of-Way Maintenance and Access

The only right-of-way maintenance that SDG&E proposes is for access roads, the remainder of the right-of-way will not be maintained or disturbed. Gates will be provided where necessary to prevent unauthorized use of maintenance roads.

(b) Operation, Maintenance and Electrical Effects

Disruption of radio and television signals can result from a gap in loose hardware. The line should be properly maintained to avoid radio and television interference.

Radio and television reception in the outer areas of San Diego is often marginal and is particularly bad in isolated valleys. For this reason, many people subscribe to cable-reception services. This effectively solves interference problems with 230 kV lines. For those people not on cable service, SDG&E will review complaints on a case-by-case basis for application of a number of mitigation measures that are available.

(c) Aviation Safety and Land Use Conflicts

The U.S. Border Patrol considers the proposed location of the transmission lines and towers a safety hazard to their night flights. This hazard can be mitigated by putting lights on the towers for nightime visibility. Transmission towers and lines are also a hazard to daylight air patrolling. SDG&E and the Border Patrol have agreed to a series of mitigation measures that include the installation of lights on towers near the border as well as the placement of aerial markers on selected towers. A copy of the agreement is included in Appendix B.

The proximity of the proposed transmission crossing to the Lower Otay Reservoir Park could result in visual impact. This impact can be mitigated in some areas by planting trees to screen the view and maintain a natural park setting.

(d) Fire-Fighting Plan

SDG&E will prepare a fire fighting plan for the transmission line right-of-way in accordance with CPUC General Order 95.

(e) Earthquake Safety

The transmission line will be designed to the seismic safety criteria of CPUC General Order 95.

C. SIGNIFICANT ENVIRONMENTAL EFFECTS THAT CANNOT BE AVOIDED IF PROJECT IS IMPLEMENTED

1. U.S. Border Patrol

The presence of transmisson lines and towers will present an additional obstacle for the U.S. Border Patrol to avoid during their low-level aerial surveillance, if the project is implemented. Partial mitigation of this problem is possible. The transmisson line would also impact Border Patrol electronic surveillance devices.

The effects of a 230 kV transmission line on Border Patrol ground-based electronic surveillance devices can be mitigated to a level acceptable to the Border Patrol.

2. Vernal Pools

Construction of towers and access roads could potentially impact rare and endangered plant species and the unique vernal pool habitat.

The issue of vernal pool habitat disturbance, or destruction, is currently under consideration by the City and County of San Diego, in cooperation with the Army Corps of Engineers, the California Department of Fish and Game and the U.S. Fish and Wildlife Service. A comprehensive plan for vernal pool preservation is under development, but in the interim the U.S. Army Corps of Engineers requires a Corps Construction permit before a project may proceed that will disturb, degrade or eliminate vernal pool habitat. The County has recently enacted an interim vernal pools protection ordinance. Disturbance of vernal pool habitat and rare or endangered plants can be avoided by mitigation measures.

3. Cultural Resources

Construction of the proposed transmission line could potentially impact cultural resources. A total of 27 archaeological sites have been located within the corridor area. Some of these sites may be eligible for the National Register of Historic Places, while others have little cultural or scientific value. A complete survey of the line route is necessary to determine the full extent of archaeological resources, and their significance and eligibility for the National Register of Historic Places.

4. Visual Effects

Construction of the transmission line would introduce another man-made intrusion further altering the visual character of the landscape.

D. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

Resources that would be committed to this project include manpower, materials, and energy. The major portion of these resource commitments would be during the tower site preparation and assembly, the conductor installation, and ground wire installation. The commitment of materials would not be absolutely irreversible, as in most cases, the materials would be recyclable. The land used would be relatively minor, and in most cases it could be returned to its original condition.

E. ENERGY REQUIREMENTS AND CONSERVATION POTENTIAL

The energy required for this project is included in fabricating the towers, wire, insulators, and other hardware. In addition, energy will be required to clear and grade access roads, pads, staging areas, and to dig footings. Additional energy will be required to deliver the materials to the sites and to construct the towers and string the lines.

When operational the project will reduce use of oil and gas consumption at SDG&E power plants and utilize some geothermal energy from the Cerro Prieto plants in Mexico that is currently not being utilized.

F. POSSIBLE CONFLICTS BETWEEN PROPOSED ACTION AND OBJECTIVES OF FEDERAL, STATE, REGIONAL, AND LOCAL LAND USE PLANS, POLICIES, AND CONTROLS

There are no known conflicts between the project and any governmental policy, plan, regulation, or control, with the exception of federal, state, and local environmental regulations and policies of the Border Patrol (U.S. Department of Justice) regarding apprehension of illegal aliens.

Applicable environmental regulations have the objective of preserving unique habitats and significant cultural resources. However, other governmental policies affecting electric utilities' responsibility to serve expected demands, stewardship of resources, and conservation of energy mandate they undertake projects with the potential to save energy. The project will create the possibility that unique habitats and cultural

resources will be disturbed. However, measures are being implemented that will adequately mitigate these expected effects.

The Border Patrol has stated that the impacts on their operations can be mitigated to their satisfaction.

G. GROWTH INDUCING IMPACT OF THE PROPOSED ACTION

Project design, materials fabrication, and construction will be done by companies and residents now in the area and will not foster growth.

The applicant's proposed interconnection will not increase SDG&E's resources and therefore no additional power will be available to accommodate growth. The interconnection will provide for increased reliability and economic energy exchanges. Purchase of power from Mexico will not occur until a purchase agreement is executed by SDG&E and CFE.

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Big Pine, Calif. 93513

Art Welmas, Chairman
Cabazon General Council
820640 Miles Ave, Suite 1-A
Indio, Calif. 92201

Gilbert Costa, Spokesman
Cahuilla General Council
P.O. Box 144
Temecula, Calif. 92390

Valacia Thacker, Chairman
Campo General Council
P.O. Box 1094
Boulevard, Calif. 92205

Tony J. Pinto, Chairman
Cuyapaipe General Council
P.O. Box 471
Alpine, Calif. 92001

Vernon Miller, Chairman
Fort Indepen. General Council
P.O. Box 67
Independence, Calif. 93526

Gilbert Paipa, Spokesman
Inaja-Cosmit G. C.
P.O. Box 242
Warner Springs, Calif. 92086

Fred Nelson
La Jolla General Council
Star Route, Box 158
Valley Center, Calif. 92082

Marie LaChappa, Chairman
La Posta General Council
P. O. Box 400
Santee, Calif. 92071

Neddeen Naylor, Chairman
Lone Pine Tribal Council
1101 South Main Street
Lone Pine, Calif. 93545

Banning Taylor, Spokesman
Los Coyotes General Council
P.O. Box 249
Warner Springs, Calif. 92086

Frances Shaw, Chairman
Manzanita General Council
P.O. Box 488
Desert Center, Calif. 92236

Jack Hamilton, Chairman
Mesa Grande Star Route
Santa Ysabel, Calif 92070

Thomas Lyons, Spokesman
Morongo, General Council
11555 Potrero Road
Banning, Calif 92220

King Freeman, Chairman
Pala General Council
P.O. Box 43
Pala, Calif. 92059

Samuel J. Powvall
Pauma General Council
P.O. Box 86
Pauma Valley, Calif. 92061

Vincent Ibanez,
Pechang Tribal Council
P.O. Box 181
Temecula, Calif. 92390

Edward T. Arviso, Chairman
Rincon Business Committee
P.O. Box 68
Valley, Center, Calif. 92082

Henry Duro, Chairman
San Manuel General Council
Route 2, North Victoria
Highland, Calif. 92346

Nova Financial Corp.
c/o Union Oil Co.
P.O. Box 7600
Los Angeles, Calif. 90054

The Guyson Co., Ltd.,
1159 Sixth Avenue
San Diego, Calif. 92101

San Diego Gas & Electric Co.
P.O. Box 1831
San Diego, Calif 92112

Scott, Billy R. & Angeline T.
240 Ash Street
Chula Vista, Calif. 92010

United Enterprises, Inc.
1007 Fifth Avenue
San Diego, Calif. 92101

Western Salt Co.
P.O. Box 149
San Diego, Calif. 92112

City of San Diego
c/o Property Department
City Administration Bldg.
San Diego, Calif. 92101

Otay Municipal Water Dist.
10595 Jamacha Blvd.
Spring Valley, Calif. 92078

Kenyon, Hubert & Dorothy
525 Aldwych Road
El Cajon, Calif. 92020

Richard H. Brown,
Office of Environmental Qual.
HUD
Washington, D.C. 20410

Mr. Daniel Hunt
National Science Foundation
Washington, D.C. 20550

Betty Jenkis
EPA, Region IX
215 Fremont Street
San Francisco, Calif. 94105

William W. Lyons
Deputy Assistant Secretary
U.S. Department of Interior
Washington, D.C. 20240

Honorable James T. McIntyre
Office of Management & Budget
Room 252, OEOB
Washington, D.C. 20503

League of Women Voters of
Livermore
Post Office Box 702
Livermore, Calif. 94550

National Office
Sierra Club
530 Bush Street
San Francisco, Calif. 94108

Milton Levenson, EPRI
P.O. Box 10412
3412 Hillview Ave.
Palo Alto, Calif 94303

Paul R. Shoop
1125 15th Street N.W.
Washington, D.C. 20005

Susan Steckler
Room 1015
1107 9th Street
Sacramento, Calif. 95814

Rebecca W. Hamer, EPA
Mail Code A-104
Room 537 West Tower
Washington, D.C. 20460

Emory Hall
Bonneville Pwr. Admin.
P.O. Box 3621, MS E10
Portland, Oregon 97208

Honorable James Abourezk
Committee on Indian Affairs
United States Senate
Washington, D.C. 20510

Honorable Frank Church
United States Senate
Washington, D.C, 20510

Honorable Alan Cranston
United States Senate
Room 452 Russel Ofc. Bldg.
Washington, D.C. 20510

Honorable John D. Dingell
U.S. House of Rep.
Washington, D.C. 20515

Honorable Clifford Hansen
United States Senate
3203 Dirksen Senate Ofc. Bldg.
Washington, D.C. 20510

Honorable John Hemphill
U.S. House of Representatives
Rayburn House Ofc. Bldg.
Washington, D.C. 20515

Honorable Bob Stump
House of Representatives
211 Cannon House Bldg.
Washington, D.C. 20515

Ms. Elinor Schwartz
600 Pennsylvania Ave.
Suite 210
Washington, D.C. 20003

Mr. Ed Hasty
18th & C Sts., N.W.
Room 5651
Washington, D.C. 20240

County of San Diego
1600 Pacific Highway
San Diego, Calif. 92101

Title Insurance & Trust Co.
220 A Street
San Diego, Calif. 92101

Mr. & Mrs. Muhl
449 Pine Needless Drive
Del Mar, Calif. 92014

Moore Kenneth L.
P.O. Box 92
Saugus, Calif. 91350

Dorothy V. Robinson
1139 N. Shattuck, No. C.
Orange, Calif. 92667

Hirano, George
235 Shelly Avenue
Campbell, Calif. 95008

Roll, Carl P. & Jean
P.O. Box 879
Chula Vista, Calif. 92012

Fong, Gorman A & Ora D.
5117 Reminton Street
San Diego, Calif. 92115

Denrich Press
1701 Vesta Street
San Diego, Calif. 92113

N. Joseph Simons
5582 Baja Drive
San Diego, Calif. 92115

California Public Interest
Research Group
3000 "" Street
San Diego, Calif. 92102

San Diego Energy Coalition
7333A Draper Avenue
La Jolla, Calif. 92037

Sierra Club
House of Hospitality
Balba Park
San Diego, Calif. 92103

Honorable Edmund G. Brown, Jr.
Governor
State Capitol Bldg.
Sacramento, Calif. 95814

Dale Pontius
State House
Phoenix, Arizona 85007

SECTION V. COMMENTS ON THE DRAFT EIS/EIR AND RESPONSES

In this section the letters of comment on the Draft EIR/EIS, 230 kV International Transmission Line San Diego County, California to Tijuana, Mexico are reproduced in full. The DOE and CPUC staff responses are located after each letter of comment.

Letters of comment were received from:

Federal Agencies

United States Department of the Interior (BLM)
United States Environmental Protection Agency
United States Department of Commerce
National Rural Electric Cooperative Association
Tennessee Valley Authority
Department of Health and Human Services
Federal Energy Regulatory Commission
United States Department of the Interior
Advisory Council on Historic Preservation
United States Department of Education
United States Department of the Army
Naval Space Surveillance System
United States Department of Housing and Urban Development*

State Agencies

California Department of Water Resources
California Department of Transportation

Local Agencies

County of San Diego, Department of Planning and Land Use
City of Chula Vista

Interested Parties

Western Salt Company
United Enterprises, Inc.
Billy R. Scott
A. T. Scott
San Diego Gas and Electric Company
Public Hearing Comments

*Comment received late, and it has been addressed at the end of the responses

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Riverside District Office
1695 Spruce Street
Riverside, California 92507

IN REPLY REFER TO
A-59172
1792 (Mexican
Interconnecti
(C-060.21)

MAY 22 1980

Bill Yuen Lee, Project Manager
Environmental Impact Branch
California Public Utilities Commission
350 McAllister Street, Room 1210 FP
San Francisco, CA 94102

ENVIRONMENTAL
IMPACT BRANCH
MAY 28 1980
A-59172

Dear Mr. Lee:

We have reviewed the Draft Environmental Impact Statement for the proposed 230Kv transmission line to be constructed, operated, and maintained by San Diego Gas & Electric Company between San Diego County and Tijuana Substation, Tijuana, Mexico.

The Bureau of Land Management appears to have a small amount of land within the applicant's proposed route. No major impacts were identified on this land.

We feel the Draft Environmental Impact Statement is adequate in describing and analyzing the project, the environmental, and the expected impacts.

We consider the proponents proposed route to be preferred over the alternative which would pass through Chula Vista and San Diego. As you have pointed out in this statement we would probably have to reject a proposal to erect a major transmission line in a Wilderness Study Area.

Sincerely yours,

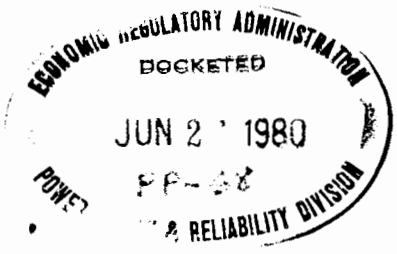
Acting
Gerald E. Hillier
District Manager

United States Department of the Interior, Bureau of Land Management

May 22, 1980

No response necessary

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
215 Fremont Street
San Francisco, Ca. 94105



Project #D-DOE-K08006-CA

James M. Brown, Jr.
Department of Energy
Economic Regulatory Administration
2000 'M' Street, N.W., Room 4110
Washington D.C. 20461

23 JUN 1980

Dear Mr. Brown:

The Environmental Protection Agency (EPA) has received and reviewed the Draft Environmental Impact Statement (DEIS) titled 230 KV INTERNATIONAL TRANSMISSION LINE, SAN DIEGO COUNTY TO TIJUANA, MEXICO.

The EPA's comments on the DEIS have been classified as Category LO-2. Definitions of the categories are provided by the enclosure. The classification and the date of the EPA's comments will be published in the Federal Register in accordance with our responsibility to inform the public of our views on proposed Federal Actions under Section 309 of the Clean Air Act. Our procedure is to categorize our comments on both the environmental consequences of the proposed action and the adequacy of the environmental statement.

The EPA appreciates the opportunity to comment on this DEIS and requests three copies of the Final Environmental Impact Statement when available.

If you have any questions regarding our comments, please contact Susan Sakaki, EIS Coordinator, at (415)556-7858.

Sincerely yours,

Jake Mackenzie, Director
Surveillance and Analysis Division

Enclosure

EIS CATEGORY CODES

Environmental Impact of the Action

LO—Lack of Objections

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

ER—Environmental Reservations

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

EU—Environmentally Unsatisfactory

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

Adequacy of the Impact Statement

Category 1—Adequate

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

Category 2—Insufficient Information

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

Category 3—Inadequate

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

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

Comments

EPA-1

The DEIS adequately addresses the potential impacts of the proposed project on the environment. However, EPA is particularly concerned with those potential impacts that project construction may have on vernal pool habitat and associated endangered plant species.

EPA Regulations (40 CFR 230.5), pursuant to Section 404(b) of the Clean Water Act of 1977, state that the availability of alternate sites that are less damaging to the environment must be considered. The critical habitat of an endangered species must not be jeopardized and fill in wetlands will not be permitted unless the activity associated with the fill is water-dependent. Therefore, EPA could not agree to the issuance of a Section 404 permit for filling of vernal pool habitat unless the project is designed in such a manner as to be in conformance with the regulations cited above. The Final Environmental Impact Statement should include alternatives which would adequately address these requirements.

Response to the comment of the United States Environmental Protection Agency, Region IX

June 23, 1980

EPA--1

Section IV.A.9. and Section IV.B.2b. The Draft EIS/EIR states that vernal pool habitat within the corridor can be avoided by the proposed right-of-way alignment. Furthermore, the relevant alternatives offer no significant advantages over the proposed alignments (Figures 3-3 and 4-1). No critical habitat has been proposed for the two vernal pool plant species currently under status review, but if the proposed project is implemented with proper mitigation, no damage to vernal pool habitat will occur.

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SURVEY
Rockville, Md. 20852

OA/C52x6:JLR

TO: PP/EC - Joyce M. Wood

FROM: OA/C5 - Robert B. Rollins

SUBJECT: DEIS #8006.20 - 230 KV International Transmission Line, San Diego County, California to Tijuana, Mexico, San Diego Gas & Electric Company

The subject statement has been reviewed within the areas of the National Ocean Survey's (NOS) responsibility and expertise, and in terms of the impact of the proposed action on NOS activities and projects.

USDC-1 Geodetic control survey monuments may be located in the proposed project area. If there is any planned activity which will disturb or destroy these monuments, NOS requires not less than 90 days' notification in advance of such activity in order to plan for their relocation. NOS recommends that funding for this project includes the cost of any relocation required for NOS monuments.

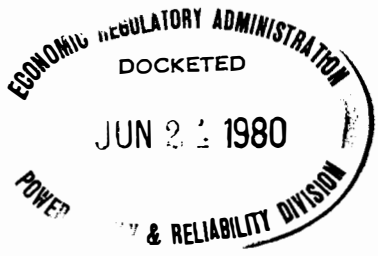
United States Department of Commerce, National Ocean Survey

July 21, 1980

USDC--1

Section IV.B.2b. The text has been revised to address the possible relocation of survey monuments.

JUN 2 0 1980



Mr. Richard E. Weiner, Director
Department of Energy
Office of Utility Systems
Room 4110, 2000 M Street, NW
Washington, D.C. 20461

Dear Mr. Weiner:

This constitutes TVA's comments on the draft environmental impact statement entitled, "230kV International Transmission Line-San Diego Gas and Electric Company-DOE/EIS-0067," as requested in your June 11, 1980, transmittal letter. Following our review of the proposed action, as described, we have determined that TVA program will not be significantly impacted.

In the future, please address all correspondence to:

Dr. Mohamed T. El-Ashry
Director of Environmental Quality
Tennessee Valley Authority
Norris, Tennessee 37828

We appreciate the opportunity to review this draft statement.

Sincerely,

Mohamed T. El-Ashry, Ph.D.
Director of Environmental
Quality

Response to the comment of Tennessee Valley Authority

June 20, 1980

No response necessary

June 23, 1980

Department of Energy
Office of Utility Systems
Room 4110, 2000 M Street, NW
Washington, D.C. 20461

Gentlemen:

We have reviewed the Draft Environmental Impact Statement for the 230 KV International Transmission Line, San Diego County, California, to Tijuana, Mexico. We are responding on behalf of the Public Health Service.

We reviewed this draft statement for possible adverse health effects and we have no comments to offer. We believe that the impacts of the proposed action and its alternatives have been adequately addressed.

Thank you for the opportunity of reviewing this statement. We would appreciate receiving a copy of the final document when it is issued.

Sincerely yours,

Frank S. Lisella, Ph.D.
Chief, Environmental Affairs Group
Environmental Health Services Division
Bureau of State Services

Response to the comment of the Department of Health and Human Services, Public Health Service

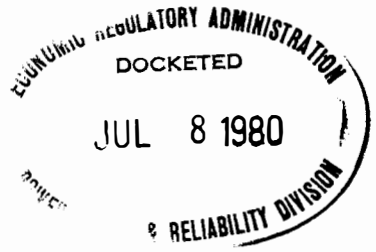
June 23, 1980

No response necessary

FEDERAL ENERGY REGULATORY COMMISSION
WASHINGTON 20426

IN REPLY REFER TO:

July 3, 1980



Mr. Jerry L. Pfeffer
Assistant Administrator
Office of Utility Systems
Economic Regulatory Administration
U. S. Department of Energy
Washington, D. C. 20585

Dear Mr. Pfeffer:

I am replying to your request of June 11, 1980 to Mr. Charles B. Curtis, Chairman of the Federal Energy Regulatory Commission for comments on the Draft Environmental Impact Statement for the 230 Kv International Interconnection in San Diego, California. This Draft EIS has been reviewed by appropriate FERC staff components upon whose evaluation this response is based.

The staff concentrates its review of other agencies' environmental impact statements basically on those areas of the electric power, natural gas, and oil pipeline industries for which the Commission has jurisdiction by law, or where staff has special expertise in evaluating environmental impacts involved with the proposed action. It does not appear that there would be any significant impacts in these areas of concern nor serious conflicts with this agency's responsibilities should this action be undertaken.

Thank you for the opportunity to review this statement.

Sincerely,

Jack M. Heinemann
Advisor on Environmental
Quality

Response to comments of the Federal Energy Regulatory Commission

July 3, 1980

No response necessary

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

July 8, 1980

Mr. James M. Brown, Jr.
Economic Regulating Commission
2000 M Street, N.W. 4110
Washington, D.C. 20461

Re: Review of Draft Environmental Impact Statement for 230 KV International Transmission Line, San Diego County, California to Tijuana, Mexico (ER 80/517)

Dear Mr. Brown:

The Department of the Interior has reviewed the subject Draft Environmental Impact Statement (DEIS) and provides the following comments:

GENERAL COMMENTS

You have addressed well the impacts of this project upon fish and wildlife resources. We strongly support the measures identified to preserve rare plant and vernal pool habitats, namely consultation with the Fish and Wildlife Service (FWS) and employment of a qualified botanist to examine areas scheduled to be disturbed for the presence of rare species. We also support the concepts of minimal vegetation clearing in the right-of-way, using existing access roads whenever possible, minimizing the width of access roads, and limiting the grade of access roads to ten percent. Several other practices as described below could be accomplished to further reduce project impacts.

SPECIFIC COMMENTS

USDI-1 The Mineral Resources section on page IV-10 states "the transmission line will be sited so as not to interfere with sand and gravel extraction operations..." Does this apply only to current operations, or are sand and gravel deposits that might be operated in the future also to be avoided?

USDI-2 A search of our Mineral Industry Location System (MILS) data reveals four prospects in or near the corridors about 1 to 5 miles from the border. We have very little data on these except that one was prospected for limestone. Were possible impacts by the transmission line on these prospects considered?

USDI-3 Page IV-11, Soils. We recommend that the statement include more specific information on mitigating measures to minimize soil erosion at construction areas and tower sites cleared of vegetation.

USDI-4 Page IV-17, Undergrounding. We suggest that the discussion of the undergrounding alternative include an assessment of the possibility of ground-water impacts from accidental leakage of oil from the underground system.

Pages IV - 17,18 - Possible Mitigating Measures, Alternative Structure Design and Color.

It is stated on page IV-17 of the DEIS that due to the absence of data on the flight paths or flight elevation of birds near the Lower Otay Reservoir, it is impossible to determine the potential for birds striking the transmission line or towers. This potential impact cannot be ignored. Prior to construction, a study should be performed by a qualified wildlife biologist at the time of year when a maximum number of birds are present, to determine the potential for bird strikes in the area of Lower Otay Reservoir. Using the data collected in this study, design modifications may be made to minimize bird strikes. Once construction is completed, a follow-up study should be conducted to document the success or failure of the design in preventing bird strikes.

USDI-5 The FWS has published a report entitled Impacts of Transmission Lines on Birds in Flight (FWS/OBS-78/48). It contains suggested measures to reduce transmission line strikes, as well as the effects of lines in causing avian mortality. One serious problem is the apparent inability of some birds to detect the presence of thinner wires such as static wires and guy wires. A possible solution to this problem is to eliminate the static wire in areas where lightning seldom occurs. This measure should be considered for the proposed Miguel-Tijuana transmission line. If it is impossible to eliminate the static wires, then it should be marked with permanent highly visible flags or strips to make the wire more visible to birds.

Page IV - 10,20 - Possible Mitigating Measures, Preparation of Access Roads, Tower Sites, and Work Areas.

USDI-6 To prevent erosion, areas cleared of vegetation during project construction, but not required to be maintained as unvegetated, should be reseeded with native grasses and shrubs found in the area. Also, access to transmission line access roads should be strictly limited to prevent disturbance of native plant communities by off-road vehicle users. Control may be achieved by signing and placing gates at points where the transmission line access road intersects public roads.

SUMMARY

Through careful planning and construction, this project could avoid adverse effects to fish and wildlife resources through bird strikes, destruction of rare plants and vernal pool habitat, and erosion. Implementation of the mitigating discussed in the DEIS, and the additional measures provided in these comments should signicificantly reduce potential adverse impacts.

Thank you for the opportunity to comment on this document. If you have any questions, please contact my office directly.

Sincerely,

Patricia S. Port

Patricia Sanderson Port
Regional Environmental Officer

cc:
Director, OEPR (w/cy incoming)
Director, HCRS
Director, FWS
Director, NPS
Director, GS
Director, BM
Director, BLM
Commissioner, WPRS
Commissioner, BIA
Regional Directors

Response to comments of the United States Department of the Interior, Office of the Secretary

July 8, 1980

USDI--1

Section IV.A.7. The proposed transmission line will not interfere with current sand and gravel operations in the Otay River floodplain. The line should have a minimum impact on future operations.

USDI--2

Section IV.A.7. The prospects that have been identified are probably deposits of bentonite, a clay formed from the decomposition of volcanic ash. Bentonite has been mined in areas near the Otay Valley, to the west of the proposed western corridor. The transmission line would not affect the mining of those deposits.

USDI--3

Section IV.A.8. Measures to protect against soil erosion are addressed in subsection IV.B. entitled, "Possible Mitigation Measures."

USDI--4

Section IV.B.1a. The text has been revised to cover the possibility of ground water contamination from oil leakage.

USDI--5

The Lower Otay Reservoir is not heavily used by large numbers of birds and the transmission line is not located in a flight way. Although one static wire will run between tower steeps, there will be no guy wires, and avian mortality is expected to be insignificant. Thus, it should not be necessary to conduct detailed studies of the flight paths and flight elevations.

USDI--6

Section IV.B.2b. and 3a. The text has been altered to cover reseeding and controlled access.

Advisory Council On Historic Preservation

1522 K Street, NW
Washington, DC 20005

Reply to:

Lake Plaza South, Suite 616
44 Union Boulevard
Lakewood, CO 80228

June 16, 1980

Mr. Richard E. Weiner
Director, Division of Power Supply & Reliability
Economic Regulatory Administration
Department of Energy
Washington, D.C. 20585

Attn: James M. Brown, Jr.
Office of Utility Systems - Room 4110

Docket No. PP-68. DES comments

Dear Mr. Weiner:

Thank you for your request of May 21, 1980, for comments on the draft environmental statement (DES) for the proposed 230 KV International Interconnection, San Diego, California to Tijuana, Mexico. Pursuant to Section 102(2)(C) of the National Environmental Policy Act of 1969 and the Council's regulations, "Protection of Historic and Cultural Properties" (36 CFR Part 800), we have determined that your DES appears procedurally adequate.

However, we note the presence of numerous archaeological sites within the project area and the intent to provide for a 100 percent survey of the proposed right-of-way. The Council staff recommend avoidance of all cultural resources, if possible, as the preferential course of action in designing the transmission line right-of-way. However, if avoidance of the resources is not completely possible, National Register determinations of eligibility should be sought for those sites which will be affected by the project. Plans for mitigating the adversity of the project's effect against such sites should then be developed and provided to the Council for its review and comment, in accordance with the Council's regulations, "Protection of Historic and Cultural Properties (36 CFR Part 800).

Docket No. PP-68, DIS comments

Thank you for the opportunity to comment. We look forward to working with your office in this matter.

Sincerely,

Louis S. Wall
Chief, Western Division of
Project Review

Enclosure

Response to comment of the Advisory Council on Historic Preservation

June 16, 1980

No response necessary

NRECA NATIONAL RURAL ELECTRIC COOPERATIVE ASSOCIATION
1800 Massachusetts Avenue, N.W.
Washington, D.C. 20036/202-857-9500

May 23, 1980

Mr. Richard E. Weiner, Director
Division of Power Supply and Reliability
Economic Regulatory Administration
Department of Energy
Washington, D.C. 20461

Dear Mr. Weiner:

The National Rural Electric Cooperative Association appreciates the opportunity to comment on the Department of Energy's Draft Environmental Impact Statement (DOE/EIS-0067) on a 230-kV international connection between San Diego County, California and Tijuana, Mexico.

While the subject interconnection may have some environmental effects, the reliability improvement in my judgment is much more important.

Sincerely,

Joseph S. Ives
Environmental Counsel

JSI/ajl

Response to comments of the National Rural Electric Cooperative Association

May 23, 1980

No response necessary

GC J Brown
7/15/80

OFFICE OF THE SECRETARY OF EDUCATION
ASSISTANT SECRETARY FOR MANAGEMENT
400 MARYLAND AVENUE, S.W. WASHINGTON, D.C. 20202

JUL 10 1980

Mr. Richard Weiner
Director
Division of Power Supply
and Reliability
Economic Regulatory Administration
Department of Energy
Washington, DC 20461

Dear Mr. Weiner:

Secretary Hufstedler has asked me to reply to your June 11 letter with enclosed Department of Energy draft Environmental Impact Statement, DOE/EIS - 0067.

After having received the draft for impacts that would be of concern to us, I can say that the Department of Education has no comments to offer regarding this project.

Thank you for bringing this matter to our attention.

Sincerely,

John Gabusi
Assistant Secretary
for Management

Response to comment of the U.S. Department of Education, Office of the Secretary of Education

July 10, 1980

No response necessary

DEPARTMENT OF THE ARMY
LOS ANGELES DISTRICT, CORPS OF ENGINEERS
P. O. BOX 2711
LOS ANGELES, CALIFORNIA 90053

SPLED-E

16 July 1980
Docket No: PP-68

Department of Energy
Office of Utility Systems
Room 4110, 2000 M Street, NW.
Washington, D.C. 20461

Dear Sirs:

This is in response to your request for review and comments on the Draft Environmental Impact Statement (DEIS) for the "230 KV International Transmission Line, San Diego County, California to Tijuana, Mexico."

The proposed plan does not conflict with existing or authorized plans of the Corps of Engineers.

DA-1 Since it is necessary to locate a transmission tower in the floodplain, precautions should be taken against the tower being damaged or washed out by a flood. On page IV-20, Section IV B.2.e. describes the measures that will be taken to protect the tower from damage. We suggest that the design criteria for these measures, e.g., 100-year water surface elevation, water velocities, debris load, etc., be carefully coordinated with the San Diego County Flood Control District, San Diego, California.

Thank you for the opportunity to review and comment on this DEIS.

Sincerely,

for Matthew Rabetich

NORMAN ARNO
Chief, Engineering Division

Response to comment of the U.S. Department of the Army

July 16, 1980

DA--1

Section IV.B.2e. The design and construction of the tower proposed for the floodplain is being coordinated with the San Diego County Flood Control District. An assessment of the potential floodplain impact of the proposed tower and alternatives is found in Appendix C.

cc: D. Layton

REP

BYE

NAVAL SPACE SURVEILLANCE SYSTEM
DAHLGREN, VIRGINIA 22448

In reply refer to
TV10:GWO:ajc
3120
JUL 3[illegible] 1980

Mr. Bill Yuen Lee, Project Manager
Environmental Impact Branch
California Public Utilities Commission
350 McAllister Street, Room 1210 FP
San Francisco, California 94102

ENVIRONMENTAL IMPACT BRANCH
AUG 01 1980
A-59172

Dear Mr. Lee:

This Command has reviewed the Draft Environmental Impact Statement for SCH 79051403, 230 KV Transmission Line Interconnection, and agrees with the assessment that it will have no effect on our Brown Field Receiver Station.

Sincerely,

H. D. SALISBURY
Commander, U.S. Navy
Commanding Officer

Copy to:
DOE, Mr. J. M. Brown, Jr.

Response to comment of the Naval Space Surveillance System

July 29, 1980

No response necessary

A-5917

State of California

Memorandum

ENVIRONMENTAL IMPACT BRANCH
JUN 2 1980
A-59172

The Resources Agency

KJK
BYL

To : Mr. K. J. Kindblad, Chief
Environmental Engineer
California Public Utilities Commission
350 McAllister Street, Room 1210 FP
San Francisco, CA 94102
Attention: Bell Yuen Lee

Date : MAY 29 1980

File No.:

Subject: 230 kV Transmission Line Interconnection - San Diego County to Tijuana, Mexico. SCH No. 79051403 CPUC A-59172

From : **Department of Water Resources**
Los Angeles, CA 90055

As requested in your letter of May 13, 1980, we have reviewed the Draft Environmental Impact Statement 230 kV International Transmission Line San Diego County, California to Tijuana, Mexico, San Diego Gas and Electric Company, dated May 1980 and have no comment to offer on this project.

Thank you for the opportunity to review this document.

C B Arnold

Jack J. Coe, Chief
Southern District
8-640-4107

Response to comment of the California Department of Water Resources

May 29, 1980

No response necessary

A-59172

State of California — Business and Transportation Agency

Memorandum

To : Mr. Bill Yuen Lee, Project Manager
Environmental Impact Branch
California Public Utilities Commission
350 Mc Allister Street, Room 1210 FP
San Francisco, CA 94102

Date: June 3, 1980

File : Clearinghouse

ENVIRONMENTAL IMPACT BRANCH
JUN 6 1980
A-59172

From : **DEPARTMENT OF TRANSPORTATION**
Division of Aeronautics

Subject: Draft EIS for (SCH 79051403) 230kV Transmission Line Interconnection from the Miguel Substation in San Diego County, to the U.S./Mexican Border near Tijuana, Mexico.

San Diego Gas and Electric Company (SDG&E) has applied to construct, maintain, and operate a 230kV transmission line from the Miguel Substation in San Diego County to interconnect with a Mexican line at the United States/Mexican border (a distance of some 10 miles). From the border it continues another 3 miles to the Tijuana Substation, at Tijuana, Mexico. This project will provide for the exchange of electricity between SDG&E's transmission system and the Mexican system in northern Baja, California, and will improve reliability of both systems. This line, across a United States international border, requires a Presidential Permit, and a Certificate of Public Convenience and Necessity from the California Public Utilities Commission. The environmental documentation was prepared to meet the requirements of both the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA).

Our review focused on those areas germane to our statutory responsibilities, i.e., noise impact on the project from airport operations; safety of residents of the project environs and of air navigation; encroachment of incompatible land uses on airports with subsequent public pressure to curtail operations or close the airports; and the impact of the project on the surface transportation network serving airports in the area.

NOISE: We see no noise impact on the project from airport operations, and the noise associated with the actual project itself should be negligible.

SAFETY: This issue is somewhat more complex. We do not envision any impact on normal air traffic which is conducted in conformity with the Federal Aviation Regulations. We do, however, agree that the transmission line and towers could threaten safety for crop duster and Border Patrol Aircraft Operations. The DEIS comments on this and offers measures to mitigate such an impact on safety. We urge that the support towers be

painted and/or lighted to enhance visual conspicuousness. Since the Border Patrol conducts low-level flight operations, we urge that those spans within the area subject to Border Patrol flights be marked. The usual method of such marking is to suspend plastic spheres (red or international orange) on a messenger cable which is allowed to assume the same catenary curve as that assumed by the actual conductors. The spheres are 55 inches in diameter. The messenger cable eliminates any stress on the actual conductors. Where any span exceeds 1/4 mile in length, or where towers will attain heights of 200 feet or more above the terrain, such marking and lighting should be mandatory.

ENCROACHMENT: We envision no impact from encroachment on airports. Brown Field is indicated as more than 2 miles from the transmission corridor.

Neither do we expect any project impact on the surface transportation complex.

The DEIS has, from our point of view, adequately considered the environmental impacts associated with the project. There would be no involvement of State Aeronautics funds, and we would not have discretionary approval authority over the project. The DEIS is, thus, adequate. We request the opportunity to review any further documentation on this project.

G. A. MILLER
Acting Chief

Burd Miller
Environmental Planner

Response to comments of the California Department of Transportation

June 3, 1980

No response necessary

A-59172
RYL

Department of Planning & Land Use

County of San Diego
Environmental Analysis Division
9150 Chesapeake Drive, Room 136
San Diego, California 92123
Telephone: (714) 565-5757

ENVIRONMENTAL IMPACT BRANCH

JUN 23 1980
A-59172

June 17, 1980

California Public Utilities Commission
California State Building
San Francisco, CA 94102

Attention: Mr. Bill Yuen Lee

Subject: File No. A-59172, 230 KV Transmission Line Interconnection - San Diego County to Tijuana, Mexico; EAD Log #80-19-36

Dear Mr. Lee,

The County of San Diego has completed its review of the draft Environmental Impact Report (EIR) to the subject transmission line proposal. That review was conducted as a responsible agency in accordance with the requirements of the California Environmental Quality Act (CEQA) because this jurisdiction expects to have some subsequent right of approval over the project.

CSD-1 Based upon our review we find that the draft EIR is adequate for our needs. However, we would like the privilege of reviewing additional information (biology and archeology surveys, etc.) as it becomes available.

Thank you for the opportunity to comment on this document. If you have any questions on this matter please call Mr. R. Rodgers at (714) 565-5749.

Respectfully,

Kathy Lehtola

KATHLEEN A. LEHTOLA, Coordinator
Environmental Analysis Division

KAL:RR:jr

RECD
PUBLIC UTILITIES COMM.
JUN 23 10 57 AM '80

Response to the comment of the County of San Diego

June 17, 1980

CSD--1

Information derived from additional studies and surveys related to the transmission line will be made available to all interested parties.

DEPARTMENT OF PLANNING

City of Chula Vista
CALIFORNIA

June 24, 1980

Department of Energy
Office of Utility Systems
Room 4110
2000 M Street N.W.
Washington, D.C. 20461

Docket #: PP-68
Comments on Draft Environmental Impact Statement

With great interest, the Environmental Review Section of the Planning Department has reviewed the joint EIR/EIS on the proposed joint Transmission line Interconnection for SDG&E and SFE-BCN systems.

We do have several comments which include those of the Planning & Environmental Review Division of the Engineering Department, they are as follows:

CCV-1 { 1. In discussing the alternative projects, it was noted that there was a potential for paleontological resources within the boundary of the various alternatives (II-8). However in describing the survey activities (II-14), no mention was made on such surveys even on a preliminary basis.

CCV-2 { 2. Page III-7, in the discussion regarding geological hazards, no discussion involving the suspected Otay Valley Fault was included. This feature is located within the Otay Valley and runs generally in a east-west direction. Although little is known about the extension of this feature it may very well extend thru the proposed corridor.

CCV-3 { 3. Page III-7, the section regarding mineral resources contains no acknowledgement of the Bentonite mining which has been carried out in the south bay area.

276 Fourth Avenue, Chula Vista, CA 92010 (714) 575-5101

CCV-4 4. Page III-9, the section on vegetation does not adequately acknowledge the relationship between the plants which have their northern limit in this area in association with the vegetation which has its southern limitation at the same point. This is a unique ecological niche which should be noted.

CCV-5 5. Table III-6, it would be helpful if the final EIR/EIS included the common name of those species which were of some importance.

CCV-6 6. Page III-24, General Plan and Zoning Designations. This section of the EIR/EIS discusses the existing County sub-regional planning land use element and county zoning. It also discusses the City of San Diego's preparation of the specific plan and intention to annex areas in the Otay Mesa East area. There is however, no discussion of the planning effort that the City of Chula Vista has manifested in the eastern portion of their sphere of influence thru which the western corridor passes.

Additionally, a major developer is currently in the process of developing a land use plan for approximately 3000 acres thru which the proposed western corridor passes. These items should be of major consideration in the specific planning for the transmission line.

CCV-7 7. The plates illustrating the proposed route of the transmission line should identify features along the route in greater detail. For instance, Plate 5, I believe, should identify the depression in the lower left hand corner as Salt Creek.

CCV-8 8. Page IV-12, this page references the City of Chula Vista's growth management plan. The City of Chula Vista has no adopted growth management plan or policies and in fact, the draft of these growth management policies have been referred back to staff by the City Council.

CCV- 9 9. During construction and on a long term basis regarding maintenance roads, there will be a major problem regarding erosion and siltation. (See Plate 10) It has been the City of Chula Vista's experience that these maintenance roads are often used by off-road vehicles which results in acceleration of these problems. There is however, no substantial discussion of how the applicant nor the Public Utilities Commssion or Department of Energy plans to mitigate these effects.

CCV-10 10. Page IV-23, paragraph F states that there is no known conflicts between the project and any governmental policy, plan, etc. As has been previously noted, there is no discusison of the City of Chula Vista's plans which involve the proposed corridor. Before such an analysis is conducted and proper

communications established, such a statement is inappropriate.

CCV-11 11. Page IV-23, paragraph G, one of the concerns in discussing growth inducing effects is the question regarding the removal of barriers to growth. This section does not deal with such questions as; would this connection be utilized for the transmission of additional power purchased from Mexico? This concept is illuded to in several sections in the EIR/EIS, however there is no discussion at this point in the document where it would be most appropriate.

CCV-12 12. Realizing that aesthetics is a subjective matter, we do disagree with the analysis that the proposed lattice towers would be less obtrusive than a single steel pole structure.

We respectfully request that greater consideration be given to this alternative.

If you have any further questions regarding this matter, please contact me at (714) 575-5104.

Sincerely,

Douglas D. Reid
Environmental Review Coordinator

DDR:kca

cc: City Engineer, John Lippitt

Response to comments of the City of Chula Vista

June 24, 1980

CCV--1

Section IV.B.2b. Paleontological surveys will be conducted at proposed construction sites. The text has been modified to include reference to this survey work.

CCV--2

Section III.F. The text has been revised to address the suspected fault.

CCV--3

Section III.G. The text has been rewritten so that it now covers bentonite mining.

CCV--4

Section III.I.1. Comment noted.

CCV--5

Section III.I.3. The common names of important plant species appear in the text.

CCV--6

Section III.K.3. The text has been changed to include a discussion of Chula Vista's planning efforts related to the western corridor. The transmission line assessment did not cover private development plans that have not been officially submitted for adoption. However, a developer has suggested an alternative route for the transmission line that would minimize impacts to a planned development. The suggested alternative route is addressed later in this section.

CCV--7

Section III.L. Additional features have been identified on the plates.

CCV--8

Section IV.A.11. The reference to the City of Chula Vista's growth management plan has been deleted from the text.

CCV--9

Section IV.B.2. and 3. Several relevant methods of mitigation are discussed in these two subsections. To minimize access to maintenance roads by off-road vehicles, the use of locked gates has been added as a mitigation measure.

CCV--10

Section IV.F. The proposed transmission line corridor does not lie within the jurisdiction of the City of Chula Vista. However, the corridor is within an area that is addressed by various elements of the city's general plan (e.g., open space and conservation). The proposed transmission line does not appear to conflict with the present plans of the city.

CCV-11

Section IV.G. The assessment of the transmission line was restricted to the purposes set forth in SDG&E's application to the California Public Utilities Commission for a Certificate of Public Convenience and Necessity. The stated purposes are to provide for economic exchanges of electricity between Mexico and the United States and to improve the reliability of both of the connected transmission systems. There have been no agreements between SDG&E and the Mexican utility to transfer surplus power from Mexico to the United States.

CCV--12

Section IV. Comment is noted.

western salt company

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San Diego, California 92112
(714) 298-8821

That Salty Salt

Los Angeles Office & Warehouse
2476 Hunter Street
Los Angeles, California 90021
(213) 627-8619

Mailing Address
P.O. Box 149
San Diego, California 92112

June 25, 1980

Public Utilities Commission
California State Building
San Francisco, Ca. 94102

Re: San Diego Gas & Electric Company Application No. 59172

Honorable Commissioners:

WSC-1 Western Salt Company is a property owner that will be substantially impacted by the applicant's proposed 230 KV International Transmission Line. The suggested route outlined in the Western corridor area, addressed in the "Draft Environmental Impact Statement" (DEIS) prepared for the project, presents serious fragmentation constraints to future planning of the property. In past years this property has essentially been utilized in dry-farming pursuits pending timely development efforts. As a result, the property contains few, if any, serious resource impediments to a project of this nature, which undoubtedly has favored its selection as a major portion of the proposed route. However, Western Salt has entered into an agreement with Cadillac Fairview Homes West to plan and develop a 3200 acre planned community on its property. Studies of the proposed transmission facility have allowed no consideration of the negative consequences of the route to this ongoing community planning.

Western Salt is convinced that the Eastern corridor outlined in the DEIS is eminently more suitable for a project of this nature than the proposed corridor for a variety of reasons including the following:

WSC-2
1. Substantial segments of land in the corridor are government controlled rather than privately owned.
2. Less harmful impacts on land use could be anticipated if the Bureau of Land Management would grant appropriate exemption to Wilderness Study Area restrictions.
3. Similar mitigation procedures can be applied to reduce impacts on other affected resources.
4. Possible higher construction expenditures could be partially or wholly offset by reduced land acquisition costs.

western salt company

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Public Utilities Commission
San Francisco, Ca. 94102

It is Western Salt's opinion that the DEIS has insufficiently addressed the adequacy of a route through the Eastern corridor for this proposed project.

WSC-3 Should the legal constraints to adequate consideration of an Eastern corridor route prove insurmountable, however, then the disposition of any proposed alignment through the Western corridor is of critical concern to the development of a major planned community on the property. As a consequence, Western Salt and Cadillac Fairview Homes West have exerted intensive effort to project and propose to San Diego Gas & Electric an alternate alignment for a segment of the transmission line that traverses the property. The attached letter dated June 3, 1980 from the Project Director, Cadillac Fairview Homes West, addressing the specific considerations of the alternate alignment is hereby submitted as an alternative acceptable to the property owner in lieu of the route outlined in the DEIS. Evaluation analysis by the San Diego Gas & Electric to this proposal has proven acceptable in terms of economic and environmental concerns, as evidenced by the attached letter dated June 18, 1980 from the Manager, Engineering Land Department, San Diego Gas & Electric.

Western Salt urges that the Public Utilities Commission adopt this alternate alignment to mitigate the negative effect of this proposed project on the future use and development of its property.

Western Salt intends to make oral statement relative to this matter at the public hearing scheduled June 27, 1980.

Thank you for your consideration.

Respectfully,

Gerald M. Boyle
Vice President

GMB:ep

western salt company

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CC: Freda Abbott, Senior Counsel, CPUC
Bill Y. Lee, Senior Utilities Engineer, CPUC
Manning W. Puette, Attorney, San Diego Gas & Electric
Bill R. Scott
Mrs. A. T. Scott
Robert L. Santos ,CFHW
Michael C. Spata,Attorney, United Enterprises Inc.
John J. Doran, Administrative Law Judge,CPUC
Mary J. Wood, Manager, Engineering Land Dept. San Diego Gas & Electric

Response to comments of Western Salt Company

June 25, 1980

WSC--1

The environmental analysis of the western corridor could not consider potential impacts on community planning by Cadillac Fairview Homes West because no plans have been formally submitted or approved for such development. In this circumstance, the only potential impacts that can be assessed are those relating to present land uses.

WSC--2

The environmental suitability of the eastern corridor has been addressed in the DEIS (page II-5). Only existing land use constraints can be dealt with in any environmental analysis at the present time. Specific comments are discussed below:

1. Land ownership per se is not a factor in the evaluation of potential impacts of alternatives.

2. Exemption from Wilderness Study Area interim management rules is extremely unlikely; in any event, it is not clear that less harmful land use impacts would be sustained on the eastern corridor.

3. It is not clear that feasible mitigation measures would reduce impacts on other resources in the eastern corridor to acceptable levels.

4. This is not an appropriate consideration for an environmental analysis.

WSC--3

An analysis of the potential environmental impacts of this alternate alignment, designated X-1 on Fig. WSC-1, has been prepared and is presented as follows:

1. Electrical Effects
   While the X-1 alternative alignment is closer to existing residential areas than the proposed route, it is still at such a distance that there would be no increased radio and TV interference. For the same reason, no increased impact from transmission line electrostatic or electromagnetic fields is expected.

2. Air Quality
   Alternative route X-1 would be equivalent to the proposed route in regard to air quality impact.

3. Noise
Although the X-1 alternative is closer to residential noise receptors than the proposed alignment, it is still over one-half mile from the nearest residential area. As a result, no adverse impacts from construction or operational noise are expected.

4. Hydrology and Water Quality
Alternative route X-1 would be equivalent to the proposed route in regard to impacts on hydrology and water quality.

5. Geologic Hazards/Mineral Resources/Soils
Alternative route X-1 would not differ significantly from the proposed route in respect to geologic hazards or to impacts on mineral resources and soils.

6. Vegetation
Both the proposed route and the alternative X-1 would cross the Coastal Sage Scrub habitat north of Proctor Valley Road. The routes have about the same potential for impacting certain populations of rare or declining plant species that occur here, including the Otay tarplant (Hemizonia conjugens) which is listed as endangered by the California Department of Fish & Game.

7. Wildlife
Alternative route X-1 would be equivalent to the proposed route in regard to impacts on wildlife.

8. Land Use
There is no significant difference in the amount of agricultural land impacted by alternative route X-1 as compared with the proposed route. No conflicts are expected between the proposed waste water disposal project and the construction and operation of the proposed transmission line. Neither the proposed nor the X-1 alternative route offers any particular advantage in respect to this proposed land use.

9. Visual Effects
The X-1 alternative route would be approximately one half mile closer to existing residential areas than would the proposed route. For this reason the X-1 route would have a slightly greater impact.

10. Alternative route X-1 poses the potential for impact to at least one extensive archaeological site (CA-SDi-7197). This appears to be the same site as alternative routes P-1 and R-1 would impact. The proposed route avoids this archaeological site.

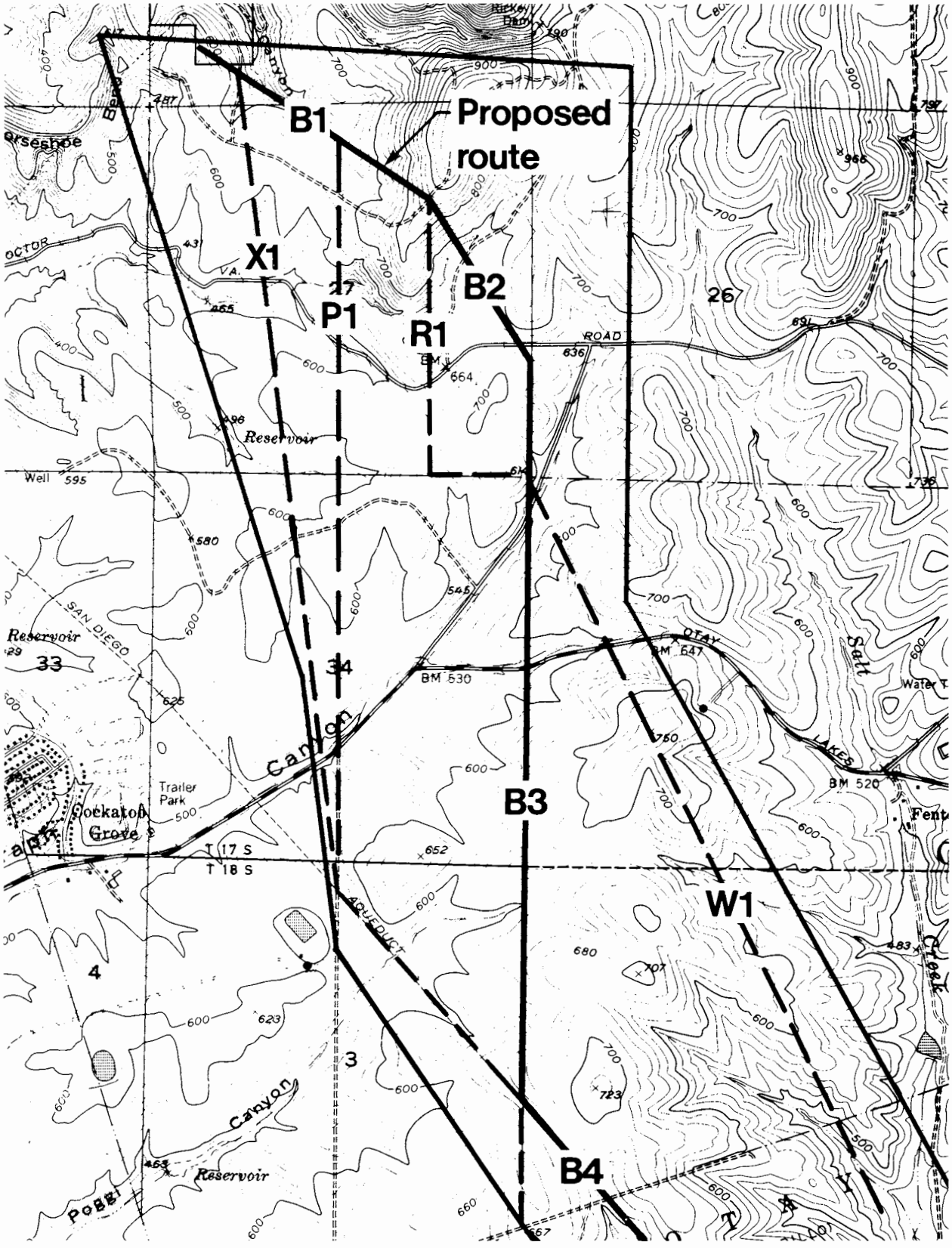


Figure WSC-1. Proposed route (segments B-1, B-2, B-3 and B-4) and alternate routes (segments P-1, R-1 and W-1) are as shown on Figure 4-1. Route X-1 is proposed by the Western Salt Company.

COMMENTS

UNITED ENTERPRISES, INC.

DRAFT ENVIRONMENTAL IMPACT STATEMENT

230 KV INTERNATIONAL TRANSMISSION LINE

SAN DIEGO COUNTY, CALIFORNIA TO TIJUANA, MEXICO

SAN DIEGO GAS & ELECTRIC COMPANY

MAY 1980

Submitted by: UNITED ENTERPRISES, INC.

Prepared by: Michael Christopher Spata
Attorney at Law

Date Prepared: June 20, 1980

INTRODUCTION

In view of the fact that the proposed 230 KV Transmission Line project will create a substantial impact on the environment, thereby warranting compliance with federal and state environmental laws, and in view of the fact that the location of the proposed project will substantially affect property owned by United Enterprises, Inc., (hereinafter "United Enterprises"), the following Comments are submitted for review and response by the appropriate parties connected with this project.

1. ELECTROSTATIC EFFECTS. (IV-5)

UE-1

The Draft Environmental Impact Statement, (hereinafter Draft "EIS") indicates that, "It is theoretically possible for gasoline vapors to ignite due to voltage induced on a well-insulated vehicle beneath EHV transmission lines. There have been no confirmed cases of fuel ignition resulting from refueling a vehicle under such a transmission line." In view of the potential dangers emanating from refueling in the area of the tranmission line, San Diego Gas & Electric Company, (hereinafter "SDG&E") should undertake both of the following recommendations: (a) conduct a study to determine whether in fact explosions can occur arising out of refueling vehicles near the transmission line, and (b) post appropriate warning signs sufficiently observable by and informative to the public, and post such warning signs at a distance sufficiently out of the range where possible explosions can occur.

2. ELECTROMAGNETIC EFFECTS. (IV-5)

UE-2

As stated in the Draft EIS, "The proposed transmission line will parallel the Second San Diego Aqueduct along part of its route... When the final alignment for the transmission line has

been selected, the San Diego County Water Authority, (hereinafter "SDCWA") will carry out studies to determine the likelihood of corrosion on this pipeline (Ogden, 1980)." Since the "preferred alignment" proposed by SDG&E parallels the Second San Diego Aqueduct, it should be noted that the Aqueduct traverses property owned by United Enterprises. Consequently, it is urged that SDG&E see to it that such studies are undertaken by SDCWA in the interests of eliminating or mitigating damage to one of San Diego County's major water transmission pipelines.

UE-2

Additionally, SDG&E maintains a gas pipeline as an appurtenance to the Second San Diego Aqueduct. This gas pipeline is located on property owned by United Enterprises. The Draft EIS did not engage in any discussion of this fact. Hence, it is socially desirable and necessary that SDG&E provide input concerning the adverse effects on the appurtenant gas pipeline potentially caused by the operation of the transmission power line.

3. ELECTROMAGNETIC FIELD EFFECT ON BIOLOGICAL SYSTEM. (IV-5,6)

The Draft EIS unfolds that:

> "Although these electric and magnetic fields are of quite low intensity, there has been controversy in recent years over the possible biological effects of long-term exposure. Much of this interest can be attributed to a Soviet study of effects on workers in high voltage switchyards (Korobkova, et al., 1972). These investigators reported that the workers exhibited a variety of nonspecific symptoms indicating disturbance in cardiovascular and central nervous system function. There have been numerous attempts by U.S. and European scientists to substantiate these findings. Recent reviews of the literature in this field have concluded that the bulk of the evidence indicates no significant biological hazards to humans or animals from the low-level electromagnetic fields adjacent to transmission lines (Bridges, 1975; EPRI, 1979). If additional studies should demonstrate potentially harmful

UE-3

effects from long-term exposure to transmission line electromagnetic fields, it would be possible to require an appropriate building setback for any future residential development."

Because of the potential harm which may be suffered and endured by human and animal organisms, it is recommended that SDG&E provide more meaningful data regarding whether the proposed project will cause serious injury to the biological environment.

4. BROWN FIELD OPERATIONS.

UE-4

In connection with Brown Field Operations, the Draft EIS did "not" address the effect of the proposed project on the Federal Aviation Administrations's VORTAC which is presently under construction. The VORTAC is a very high frequency air navigational facility which is located on property owned by United Enterprises, and which is reasonably close to the location of SDG&E's preferred alignment. SDG&E should provide an analysis of the impact of its proposed project on the VORTAC facility.

5. BLM CONSTRAINTS. (II-5)

UE-5

The Draft EIS appears to take the position that a primary impediment to the pursuit of locating the project within the "Eastern Corridor" is that the Bureau of Land Management (hereinafter "BLM") prohibits any interference with its Wilderness Study Area. No attempt has been made to delineate any statutory, regulatory or decisional basis for BLM's prohibitory posture. In the absence of such legal foundation, SDG&E should endeavor to determine whether the project can be located within the "Eastern Corridor".

Moreover, assuming legal constraints are sufficiently available to thwart SDG&E's efforts to locate the project within the "Eastern Corridor", efforts should be made to determine whether

SDG&E can be granted an exemption to locate the project within the Wilderness Study Area, or whether detachment proceedings can be instituted to remove any impacted property from the Wilderness Study Area.

UE-5

Such efforts should be undertaken by SDG&E because the location of the project within the "Eastern Corridor" will cause the least harmful effects upon the agricultural, grazing and likely developable areas on the property owned by United Enterprises.

6. EFFECT OF PROJECT ON AGRICULTURAL & RANCHING OPERATIONS.

The location of the proposed project will take a substantial quantity of prime agricultural and cattle grazing land out of productive use. Presently, local land use planning elements, and regulations adopted pursuant thereto, encourage the advancement of agricultural and ranching operations within the Otay Subregional planning area. Unless the location of the project within the "Eastern Corridor" is approved, increased pressures will be exerted on the landowner to develop the property because of the interference of the preferred alignment with agricultural and ranching uses of the land.

UE-6

7. PROTECTIVE MEASURES FOR GRAZING CATTLE.

United Enterprises engages in the use of cattle grazing. The location of many towers throughout the property will cause a hazard to grazing cattle. In light of this potential hazard, steps should be taken by SDG&E to erect fences or cattle guards in and around the towers and the access roads leading thereto.

UE-7

CONCLUSION

Based upon the foregoing discussion, it is respectfully requested that the appropriate parties meaningfully address and

respond to the Comments to the Draft EIS submitted by United Enterprises. In doing so, not only will the interest of the affected landowner be served, but the public interest will be served, since the present project will substantially affect the environment.

Dated: June 20, 1980.

Respectfully submitted,

Michael Christopher Spata
Attorney at Law for
United Enterprises, Inc.

QUALIFICATIONS OF PREPARER OF COMMENTS

Michael Christopher Spata, Attorney at Law

Education:	B.A., Government J.D., Law Certificate in Executive Education, Federal Executive Institute
Experience:	Approximately three years of experience in land use, environmental, condemnation, and real estate matters.

CERTIFICATE OF SERVICE

I hereby certify that I have this day served a true copy of the Comments of United Enterprises, Inc. to Draft Environmental Impact Statement 230 KV International Transmission Line San Diego County, California to Tijuana, Mexico San Diego Gas & Electric Company on all parties in this proceeding by mailing a copy thereof to each such party or to his attorney of record.

M. W. Puette, Attorney
San Diego Gas & Electric Company
P. O. Box 1831
San Diego, CA 92112

J. M. Burns, Manager
Licensing and Environmental
San Diego Gas & Electric Company
P. O. Box 1831
San Diego, CA 92112

G. M. Boyle, Vice President
Western Salt Company
702 West Washington Street
San Diego, CA 92112

A. T. Scott, Property Owner
Bendix Forest Products Corp.
P. O. Box M
National City, CA 92050

J. M. Brown
U.S. Department of Energy
Economic Regulatory Administration
System Reliability & Emergency Response
Washington, DC 20461
Attn: M. A. Sheehan

B. R. Scott, Property Owner
240 Ash Street
Chula Vista, CA 92010

J. B. Ruch, State Director
U. S. Dept. of the Interior
Bureau of Land Management
Federal Office Building
2800 Cottage Way
Sacramento, CA 95825

L. McCoy
WESTEC Services, Inc.
3211 Fifth Avenue
San Diego, CA 92103

Victoria Roberts
Acting Executive Secretary
Native American Heritage Commission
1400 Tenth Street
Sacramento, CA 95814

Patricia Duro, Manager
Native American Heritage Commission
P. O. Box 648
Valley Center, CA 92802

Commission Staff

F. E. Abbott, Staff Counsel
B. Y. Lee, Project Manager

Dated June 20, 1980, at San Diego, California.

Jeanne S. Githens

Response to the comments of United Enterprises, Inc.

June 20, 1980

UE--1

Section IV.A.1f. It is noted that SDG&E has received a copy of this comment. Since there have been no confirmed cases of fuel ignition caused by the operation of transmission lines, the recommendations presented in this comment are unwarranted. Moreover, the actual danger is related to the refueling of vehicles, and this practice will not be carried out in the vicinity of the transmission line after it is operational.

UE--2

Section IV.A.1f. SDG&E has received a copy of this comment. The county water agency has indicated that it is conducting corrosion studies of the aqueduct. It should be stressed that the aqueduct is constructed of reinforced concrete and corrosion induced by the transmission line would probably be negligible, if it occurs at all.

The text has been revised to address the gas pipeline.

UE--3

Section IV.A.1f. It is noted that SDG&E has received this comment. The recommendation that more meaningful data be provided is unrealistic at this time because of the absence of studies that conclusively prove that the electromagnetic field of a 230 kV transmission line would cause negative biological effects. However, if future studies indicate adverse effects, appropriate mitigation measures can be taken.

UE--4

Section IV.A.1c(5). A new section has been added in the text to address this comment.

UE--5

Section II.E.2a. The Wilderness Study Area (WSA) shown in Fig. 2-2 is indeed the primary constraint to the eastern corridor. Under Section 603 of the Federal Land Policy and Mangement Act (Public Law 94-579) a WSA must be managed in a way that does not impair its suitability "for preservation as wilderness." In testimony before the California Public Utilities Commission (1980) B. Ottenfeld of the Bureau of Land Management confirmed that the operation of a transmission line in the eastern corridor would impair the suitability of the WSA. The transmission line could only be built in such

an area if it was temporary in nature and the affected land restored so that impacts are "substantially unnoticeable" (USDI, 1979). Since the transmission line is not a temporary installation, it cannot be exempted. Furthermore, it would be difficult, if not impossible, to restore the affected lands even if the transmission line was temporary.

UE--6

Section IV.A.11b (1). The proposed transmission line alignment in the western corridor would disturb a maximum of five acres of agricultural lands out of the several thousand acres of such lands in the region.

UE--7

The presence of towers will not affect the grazing of cattle.

JUNE 27, 1980

TO: PUBLIC UTILITIES COMMISSION HEARING ATTENDENTS ON THE PROPOSED TRANSMISSION LINE FROM THE SAN MIGUEL SUBSTATION TO MEXICO.

FROM: B.R. SCOTT - PROPERTY OWNER

THE FOLLOWING ARE MY QUESTIONS ABOUT THE HIGH VOLTAGE TRANSMISSION LINES TO MEXICO.....

BRS-1 1. WHAT IS THE SIZE OF THE MAGNETIC FIELD SURROUNDING HIGH VOLTAGE TRANSMISSION LINES OF 138 KV?5.

BRS-2 2. WHAT EFFECT DOES THESE MAGNETIC FIELDS HAVE ON ANIMALS AND HUMANS?

BRS-3 3. WHAT EFFECT WILL THESE HIGH VOLTAGE LINES AND UNSIGHTLY TOWERS HAVE ON PROPERTY VALUE?

BRS-4 4. HOW IS COMPENSATION TO BE MADE FOR PORPERTY DEVALUATION BY THE PRESENCE OF THE HIGH VOLTAGE LINES?

BRS-5 5. WHAT PRECAUTIONS ARE BEING TAKEN TO PREVENT READY ACCESS TO THE TOWERS BY YOUNGER CHILDREN?

BRS-6 6. I HAVE BEEN TOLD THE PROPOSED ROUTE AND CORRIDOR OTH THE HIGH VOLTAGE LINE WILL NOT EFFECT MY PROPERTY- WHAT DOES THE TERM PROPOSED MEAN? HAS AN ACTUAL ROUTE BEEN SELECTED? IF SO, WHERE EXACTLY WILL IT BE LOCATED? AND WHAT IMPACT WILL THIS ACTUAL LOCATION HAVE ON MY PROPERTY AND WILL PRIVATE HOMES BE PERMITTED ON MY PROPERTY?

IT IS NOT MY INTENTION TO CREATE PROBLEMS FOR SAN DIEGO GAS & ELECTRIC OR ANY ONE ELSE CONCERNED, HOWEVER, THE PRECISELY STATED QUESTIONS MUST BE SATISFACTORILY ANSWERED. ANY PROPERTY DEVALUATION DUE TO CLOSENESS OF THE LINE AND ACCOMPANYING TOWERS MUST BE BROUGHT TO A SATISFACTORY AGREEMENT TO THE SAN DIEGO GAS COMPANY AND THE PRIVATE PROPERTY OWNERS.

THANK YOU FOR YOUR COOPERATION.

BILLY R. SCOTT
PROPERTY OWNER

Responses to the comments of B. R. Scott

June 27, 1980

BRS--1

The maximum magnetic field strength for 500 kV transmission lines is discussed in Section IV.A.1f. As noted there, many household appliances create stronger magnetic fields and, of course, maximum field strength for a 230 kV line would be less.

BRS--2

A summary of the results of recent studies is given in Section IV.A.1f(3).

BRS--3

It is beyond the scope of an environmental impact assessment to speculate concerning future effects on land values.

BRS--4

Beyond the scope of an environmental impact analysis.

BRS--5

The towers will be constructed in such a way as to make it impossible for young children to climb them and thereby reach the high voltage conductors.

BRS--6

At the present time, San Diego Gas & Electric Company has applied for permits to construct, maintain, and operate a 230 kV transmission line and has indicated a preferred corridor and a preferred right-of-way alignment within that corridor. These are mapped and described in the Draft EIS. No permit decision has been made as yet by the relevant state and federal regulatory agencies concerning the actual transmission line route. The general environmental impacts of the proposed transmission line have been described in the Draft EIS/EIR; it is beyond the scope of this environmental assessment to speculate concerning future actions of local planning agencies.

JUNE 27, 1980

TO: PUBLIC UTILITIES COMMISSION AND CONCERNED PARTIES ON THE PROPOSED TRANSMISSION LINE FROM THE SAN MIGUEL SUBSTATION TO MEXICO.

FROM: A.T. SCOTT - PROPERTY OWNER

AFTER MONTHS OF RECEIVING LETTERS FROM VARIOUS COMPANIES AND THE PUBLIC UTILITIES COMMISSION, I FEEL I MUST STATE MY POSITION AS LANDOWNER ADJACENT TO THE PROPOSED TRANSMISSION LINE FROM THE SAN MIGUEL SUBSTATION TO MEXICO.

ATS-1 1. THIS PROPERTY WAS PURCHASED YEARS AGO WITH THE PURPOSE OF DIVIDING FOR PRIVATE HOMES FOR MYSELF, HUSBAND, AND 6 CHILDREN.

ATS-2 2. I AM EXTREMELY FEARFUL THAT THESE TRANSMISSION LINES AND TOWERS WOULD BE SO CLOSE AS TO CAUSE PROPERTY DEVALUATION AND REFUSAL TO GET PERMIT FROM THE COUNTY TO BUILD SUCH PRIVATE HOMES.

ATS-3 3. THE SAFETY FACTOR OF CLOSE PROXIMATY TO THE LINES WOULD BE EFFECTED UNLESS PROTECTION WAS PROVIDED FOR SUCH AS FENCING OR TREES IN A VOLUME BETWEEN THE LINES AND THE PROPERTY OF PRIVATE OWNERS.

ATS-4 4. HEALTH FACTORS SUCH AS WILL BE EFFECTED ON HUMANS OR ANIMALS HAVE TO BE CONSIDERED A HIGH PRIORITY.

ATS-5 5. AS MY RIGHT AS PROPERTY OWNER, I FEEL I WANT TO LIVE ON MY LAND WITHOUT SAFETY HAZARDS AND HEALTH HAZARDS FOR MYSELF AND FAMILY.

THANK YOU,

A.T. SCOTT
PROPERTY OWNER

Responses to the comments of A. T. Scott

June 27, 1980

ATS--1

Comment noted

ATS--2

It is beyond the scope of this environmental analysis to speculate concerning future effects on land values or concerning future actions of local planning agencies.

ATS--3

It is not clear what safety hazards are of concern here; however, transmission lines must be designed, constructed, and operated according to rigid specifications designed to protect the public safety.

ATS--4

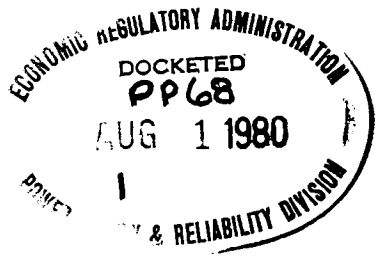
Comment noted. A discussion of the question of possible biological effects of long-term exposure to very low-level electromagnetic fields is given in Section IV.A.1f(3).

ATS--5

Comment noted

San Diego Gas & Electric

July 30, 1980 FILE NO. PMC 300



Mr. James M. Brown, Jr.
Chief, System Reliability &
Emergency Response Branch
Economic Regulatory Administration
U. S. Department of Energy
2000 M Street, Room 4010
Washington, DC 20461

Dear Jim:

MIGUEL TO TIJUANA 230KV INTERCONNECTION PROJECT

At the CPUC's June 26 and 27, 1980, Miguel to Tijuana Project hearings held in San Diego, an alternate transmission line alignment was proposed by Western Salt Company. A major landowner in the project area, Western Salt has recently determined that an alternate route through their property will have lesser impact on their planned 3,200 acre development than the impact of the preferred alignment addressed by the CPUC and DOE/ERA in the Draft Environmental Impact Statement (DEIS).

SDG&E-1

In early June, 1980, Western Salt contacted SDG&E to propose the alternative alignment (designated X_1). Using the same methodology to evaluate this new alignment as was used for the original alignments, SDG&E determined that X_1 was environmentally, as well as economically, acceptable. (Attached is a letter summarizing SDG&E's conclusions.) From an environmental impact standpoint, X_1 closely resembles P_1, one of the alternatives originally considered by SDG&E and found acceptable. From an economic standpoint, X_1 is preferable, costing approximately $84,000 less to construct than our preferred alignment. That reduction is a 15% savings for construction of the X_1 segment versus the preferred alignment.

At the June 27, 1980, hearing, endorsement of the X_1 alignment was presented by Western Salt, United Enterprises, another larger local landowner, as well as SDG&E. To the extent that the new alignment is environmentally and economically acceptable, it is SDG&E's judgment that landowner preference should be given considerable weight in the final determination.

SDG&E-2

One of the issues that continually arose during SDG&E's evaluation was X_1's visual impact on existing development. Admittedly, X_1 is closer to two housing areas and a trailer park than SDG&E's preferred alignment. For that reason, Westec Services was contracted to conduct a visual impact study of both the preferred alignment as well as the X_1 alignment. Their conclusions are included as an attachment, and the final analysis

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is that the additional visual impact, due to closeness to development, is minimal. SDG&E hereby submits the Westec document as a comment to the DEIS.

SDG&E-3 While it is true that the X_1 alignment proposed by Western Salt Company comes late in the regulatory process, SDG&E finds the route acceptable and even desirable in some areas. For these reasons we urge both the CPUC and DOE to consider this alignment, and address it in the Final Environmental Impact Statement as an equally acceptable route to that alignment originally preferred.

Should you have any questions, please call.

Sincerely,

John M. Burns
Manager
Licensing & Environmental

JMB:RPM:mm
Attachments

cc: F. W. DeVore (w/1 attach)
R. W. Watkins " "
Freda Abbott - CPUC " "
J. J. Doran - CPUC " "
B. Y. Lee - CPUC " "
David Miller - Western Salt " "
Bob Van Slambrook - DOE " "

Response to the comment of San Diego Gas & Electric Co.

July 30, 1980

The visual analysis submitted with this July 30, 1980, letter is on file with DOE and CPUC and is included here by reference.

The environmental analysis of the X-1 line has been considered and is presented as a response to the written comments of Western Salt Company of June 25, 1980 (refer to previous comments and response WSC-3, p. V-46).

It is noted that the applicant, SDG&E, finds the X-1 route alternative acceptable.

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
AREA OFFICE
2500 WILSHIRE BOULEVARD, LOS ANGELES, CALIFORNIA 90057

REGION IX
450 Golden Gate Avenue
P.O. Box 36003
San Francisco, California 94102

August 6, 1980

IN REPLY REFER TO:
9.2SS

Mr. Richard E. Weiner
Department of Energy
Office of Utility Systems
Rm. 4110, 2000 M Street, NW
Washington, D.C. 20461

Dear Mr. Weiner,

Subject: PP68 - Comments on Draft Impact Statement

Thank you for the opportunity to reivew the "230 KV International Transmission Line" DOE/(D)EIS - 0067. Our comments are:

The document is concise and well written. The admirable brevity sometimes prevents the non-technical reader from fully understanding why a particular course was chosen. At the cost of a somewhat lengthier document we think that legibility would be improved by more detailed descriptions in the following areas:

HUD-1 --Sec. I. p.1 "Purpose and Need" mentions that an economic and reliability analysis was performed by the applicant, supposedly showing a 3-4 year payback period. Yet pI-4 "Technical Studies" shows that ERA studies regarding sufficiency and potential benefit will still be made. Will the ERA studies be the basis for economic justification of the project or provide only back up material for the applicants analysis? This analysis is not referenced in the text, no summary is given, and the reference list at the end of the DEIS does not show where supporting documentation may be obtained.

HUD-2 --Sec. I. p.4 mentions the possibility of future agreements to purchase electricity from the Mexican system, and pIV-23 states that some geothermal energy from the Cerro Prieto plants will be used. The increased reliability because of connection of the two systems and the potential increase in reserve margin (not quantified) point to a potential growth inducing impact. It is not clear how the DEIS arrives at the "no impact" conclusion.

HUD-3 --Sec. I. p.4 No reason is given for the reduction of firm transfers by 1989.

HUD-4 --Sec. II. p.1 Alternatives A "No Action" and B "Conservation" cannot realistically be compared to the proposed action when no quantities or estimates are presented as to efficiency increases, reduced generation or reduced demand. If it is not possible to obtain these numbers the DEIS could so state.

--Sec. IV "Environmental Consequences"

HUD-5 (a) The visual impacts caused by the proposed project are hard to visualize. The DEIS shows one picture of an existing tower; more visual aids would be helpful. E.g. transmission towers superimposed on plates of existing conditions; pictures or diagrams of alternative designs mentioned on p.IV-18, and of tree screening on p.IV-21.

The DEIS describes how the towers may stand out and/or be lit for safety, or recede for beauty but does not say which action is proposed.

HUD-6 (b) Safety aspects are not quite clear. What determines the right-of-way width? Is the R/W wide enough to prevent the electrostatic effects mentioned on p.IV-5? What are the accepted standards for minimum building setback from the R/W or from the towers themselves and do the standards allow for low-level hazards mentioned on p.IV-6? Will the towers be fenced? If the towers or lines get struck by lightning, high winds or stray airplanes, is fire a resulting possibility and if so, will the fire fighting plan be coordinated amongst the respective jurisdictions (pp.IV-21,III-29)?

HUD-7 (c) Mitigation measures for soils and vegetation do not state if graded areas will be left unpaved or reseeded with existing top soil or site specific native material (pp.IV-11, IV-20). No permanent dust control on access roads is described. Will there be some permanent increase, however slight, in dust levels for the surrounding area?

HUD-8 --Sec. IV p.17 Is it possible to give a cost estimate for the "Undergrounding" alternative?

Sincerely,

Ronald F. Halgren

John J. Tuite
Area Manager

for

Response to comments of the United States Department of Housing and Urban Development

August 6, 1980

HUD--1

Section I.C. The "Technical Studies" referred to in the draft EIS/EIR have been completed, and the results are presented in Section I.C. Studies conducted by the ERA show, among other things, that the proposed interconnection is likely to provide more than $20. million in savings for both utility systems over the years 1982-1990.

HUD--2

Section I.B. and Section IV. G. This comment is addressed in the response to comment 11 of the City of Chula Vista (CCV--11, p. V-42).

HUD--3

Section I.B. The reduction in firm transfers in 1989 reflects changes in the resource plan that are expected to occur when geothermal facilities are put into operation.

HUD--4

Section I. A and B. Even though it is difficult to compare the "no action" and "conservation of electricity" alternatives to the proposed project because of a lack of relevant data, they still represent plausible alternatives. And as such, they should be analyzed -- albeit in a qualitative fashion.

HUD--5

Section IV. A. 12. The EIS/EIR includes a number of photographs showing different views of the proposed transmission line route (see Section III). These views were selected to provide pertinent information on the visual resources of the area. Because of the inherent problems in accurately portraying and evaluating the visual changes from a transmission line, the analysis focused mainly on how the line would be visible from areas where people live or visit. Generally, the proposed line has been sited to minimize visual changes apparent to residents of the area. Some towers will be lighted for safety purposes (see Appendix B). As a consequence, the visual nature of the line will change. However, lights will only be put on towers near the border, and so the overall change is minor.

HUD--6

Section IV. A. 1. The right-of-way width is usually determined by technical characteristics of the transmission line such as the size of towers and the area needed to maintain them. The potential electromagnetic effects associated with the operation of the line will be insignificant, and therefore no adjustments have been made in the right-of-way width.

Buildings will not be constructed within the right-of-way. Furthermore, setback requirements for buildings are inappropriate because the available information supports the conclusion that the line's electromagnetic field will not cause any adverse health effects. The towers will not be fenced. The possibility of a fire caused by lightning is remote because the line will be properly grounded. Firefighting is already adressed in the EIS/EIR in Section IV. B. 3. (d).

HUD--7

Section IV. B. 2. (b) The text has been altered to cover the revegetation of disturbed areas. The relatively infrequent use of access roads will not significantly change ambient dust levels.

HUD--8

Section IV. B. 1. (a). Cost estimates are not relevant here because the purpose of this particular analysis is to examine the environmental consequences of the "undergrounding" alternative.

PUBLIC HEARING COMMENTS AND RESPONSES

The following comments are based upon the Reporter's Transcript of the June 27, 1980, California Public Utilities Commission Public hearing held in San Diego, California. The only comments made during the public hearing that were relevent to environmental concerns are presented below.

Comments by Michael C. Spata representing United Enterprises

1. "I would point out just as a matter of form that with respect to the draft environmental impact statement, in Part IV-5, paragraph f.(2) reference is made in that paragraph to the San Diego Water Agency. I would submit there is possibly an error in that reference and it should be the San Diego County Water Authority." (p.128)

2. "In addition, with respect to our comments, I would like to add that the Otay Municipal Water District as of this week has notified representatives of United Enterprises for the purpose of commenting upon the draft environmental impact report in connection with the proposed expansion of its waste water treatment disposal area for its reclamation project, that may encompass land presently owned by United Enterprises and possibly Western Salt Company.

   The draft environmental impact statement did not have an opportunity to include any review or analysis of that proposed project by the water district and at this time I would perhaps recommend that before the draft environmental statement is finalized, that they do embrace that proposal made by the water district." (pp.128-129)

Responses to comments of Michael C. Spata representing United Enterprises at the CPUC public hearing on June 27, 1980, in San Diego.

1. The text has been modified accordingly.

2. The Otay Municipal Water District (OMWD) is proposing the Jamacha Basin Wastewater Reclamation Project, Phase II Expansion. The proposed two alternative disposal areas each extends across the study corridor. If the OMWD implements the proposed Phase II Expansion, the transmission line would cross the treated water disposal area. The waste water distribution system that the OMWD is proposing would consist of underground lines with above ground extensions at 60 to 90 foot intervals. Above ground plastic piping would distribute the treated water onto the ground. If the water distribution system is located across the proposed transmission line

alignment, the tower footing design should allow for the increased ground water that would be present. The affected towers should also be treated to prevent any possible rust or corrosion. OMWD does not anticipate any incompatibility or conflict between their proposed waste water distribution system and the transmission line (Barber, 1980).

STATE OF CALIFORNIA—THE RESOURCES AGENCY

EDMUND G. BROWN JR., Governor

CALIFORNIA ENERGY COMMISSION
1111 HOWE AVENUE
SACRAMENTO, CALIFORNIA 95825

August 22, 1980

Department of Energy
Office of Utility Systems
Room 4110
2000 M Street, NW
Washington, D.C. 20461

DRAFT ENVIRONMENTAL IMPACT STATEMENT: SAN DIEGO GAS AND ELECTRIC COMPANY INTERNATIONAL TRANSMISSION LINE PROJECT

The CEC has reviewed the Draft EIS on the above project and finds it to be both thorough and authoritative. While we have no specific comments on the content of the document, we would like to take this opportunity to formally reiterate our support of the need for the project.

Our agency has, for some time, encouraged transmission line interconnections, such as the one proposed between the electric generation systems of the San Diego Gas and Electric Company and the Comision Federal de Electricidad. This mutually beneficial interconnection will facilitate a precedent-setting international power pooling arrangement involving exchange of capacity and energy between the two utilities. The benefits to California electricity supply from this project include improved system reliability, reduced oil usage and cost savings for the ratepayers. The extent of the latter benefit is underscored by the expectation that the capital cost of the project will be recovered in three to four years of operation in an interconnected mode. Geothermal power from the Cerro Prieto Project is one of the Mexican supply sources that the line will provide access to.

The CEC feels that this project is an excellent example of the type of innovative planning that will insure adequate future electricity supply for California, consistent with the state's economic and environmental objectives. We endorse this project and encourage its expeditious authorization.

Sincerely,

JOHN L. GEESMAN
Executive Director

cc: John Bryson, CPUC
Huey Johnson, Resources Agency

Response to comments of the California Energy Commission

August 22, 1980

No response necessary

APPENDIX A

Executive Order 12114: Environmental Effects Abroad of Major Federal Actions

Department of Energy
Washington, D.C. 20585

MEMORANDUM FOR: SECRETARIAL OFFICERS

FROM: GENERAL COUNSEL

ASSISTANT SECRETARY
FOR ENVIRONMENT

SUBJ: EXECUTIVE ORDER 12114: ENVIRONMENTAL EFFECTS ABROAD OF MAJOR FEDERAL ACTIONS

On January 5, 1979, the President issued Executive Order 12114 (the "Order") based on his independent constitutional authority which sets forth procedural and other steps to be taken by federal agencies to ensure appropriate review and consideration by them of environmental effects of major federal actions on the environment outside the U.S.

The Order for the first time establishes an Administration position as to whether and under what circumstances environmental review must be given to agency actions which have environmental impacts outside the U.S. and is intended, *inter alia*, to establish the exclusive means for furthering the purposes of the National Environmental Policy Act ("NEPA") in this area.

The Order makes clear that the Administration believes NEPA does not require the preparation of an environmental impact statement (EIS) unless a major federal action significantly affects the environment of the U.S. or the global commons (e.g., the oceans or Antarctica). In such circumstances, full compliance with NEPA's EIS requirements is required but the EIS need not analyze the effects of the action in foreign nations.

However, the Order requires that environmental review less rigorous than the preparation of an EIS be undertaken with respect to actions significantly affecting the environment of a foreign nation if: (1) that nation is not participating in the action with the U.S. and is not otherwise involved in the project (e.g., a U.S. financed dam in one country that cuts off water to another "innocent bystander" country), (2) the federal action provides a physical project which is prohibited or strictly regulated in the U.S. to protect against radioactive substances (e.g., U.S. exports of nuclear reactors), (3) the federal action provides a product or project whose principal products, emissions or effluents are prohibited or strictly regulated in the U.S. because their toxic

effects on the environment create a serious public health risk (the Export-Import Bank and the Council on Environmental Quality will prepare lists illustrating the latter category of covered actions) or (4) the federal action significantly affects natural or ecological resources of global importance designated for protection by the President, or, in the case of resources protected by international agreement, by the Secretary of State. In such cases the environmental review may take the form of a relevant bilateral or multilateral environmental study in which the U.S. participated either directly or indirectly through membership in the international organization which prepared the study, or absent such a study, may consist of a concise review of the environmental issues involved.

Federal actions which affect the environment of a foreign nation, but do not fall within the above categories, do not require an environmental review.

Moreover, a number of specified actions not significantly affecting the environment of the U.S. or the global commons are categorically exempt from the requirements of the Order. These include actions taken by the President; actions taken by or pursuant to the direction of the President or cabinet officer when the national security or interest is involved or when the action occurs in the course of an armed conflict; intelligence activities; export licenses, permits and approvals, and nuclear activities (e.g., exports of nuclear fuel) except actions that provide a foreign nation with a nuclear production or utilization facility, as defined by the Atomic Energy Act of 1954; as amended, (e.g., a reactor) or a nuclear waste management facility; actions in international conferences and organizations; and disaster and emergency related actions.

All agencies involved in actions covered by the Order must have procedures in effect to implement the Order prior to September 4, 1979. The procedures will establish agency practice with regard to the nature and contents of environmental review documents, timing of preparation, and notification to other federal agencies and affected nations of the availability of review documents. Other exemptions for particular actions, in addition to the categorical exemptions discussed above, may be provided for in the agency procedures when necessary to meet emergency circumstances, situations involving exceptional foreign policy and national security sensitivities and other special circumstances.

Further, agencies may include provisions in their procedures for appropriate modification of the contents, timing and availability of documents where necessary to enable the agency to (a) decide and act promptly; (b) avoid adverse impacts on foreign relations or infringement in fact or appearance of other nations' sovereign responsibilities; or (c) ensure

appropriate reflection of diplomatic, international commercial, competitive and export promotion factors, needs for government or commercial confidentiality, national security, difficulties in obtaining information and accomplishing a meaningful environmental review, and the federal agency's degree of involvement in the action.

The Offices of the General Counsel and the Assistant Secretary for Environment will, in consultation with other interested divisions, (1) prepare the procedures required by the Order and (2) coordinate DOE's input into the list of covered products or projects to be prepared by the Export-Import Bank and CEQ. In connection with the first task, DOE will coordinate with the Department of State which has been designated the lead agency, to develop unified procedures which provide for environmental review of nuclear exports covered by the Order (e.g., reactors) without impairing U.S. reliability as a nuclear supplier.

More specific guidance on the scope and applicability of this Order will be furnished by representatives of GC and EV at a meeting to be held in Room 8204, 20 Mass. Ave. building on Thursday, February 15, at 9:00 a.m. A copy of the Order and the accompanying White House fact sheet are attached.

Attachments:
Executive Order 12114
White House Fact Sheet

[3195-01-M]

Title 3
The President

Executive Order 12114 of January 4, 1979

Environmental Effects Abroad of Major Federal Actions

By virtue of the authority vested in me by the Constitution and the laws of the United States, and as President of the United States, in order to further environmental objectives consistent with the foreign policy and national security policy of the United States, it is ordered as follows:

Section 1.

1-1. *Purpose and Scope.* The purpose of this Executive Order is to enable responsible officials of Federal agencies having ultimate responsibility for authorizing and approving actions encompassed by this Order to be informed of pertinent environmental considerations and to take such considerations into account, with other pertinent considerations of national policy, in making decisions regarding such actions. While based on independent authority, this Order furthers the purpose of the National Environmental Policy Act and the Marine Protection Research and Sanctuaries Act and the Deepwater Port Act consistent with the foreign policy and national security policy of the United States, and represents the United States government's exclusive and complete determination of the procedural and other actions to be taken by Federal agencies to further the purpose of the National Environmental Policy Act, with respect to the environment outside the United States, its territories and possessions.

Sec. 2.

2-1. *Agency Procedures.* Every Federal agency taking major Federal actions encompassed hereby and not exempted herefrom having significant effects on the environment outside the geographical borders of the United States and its territories and possessions shall within eight months after the effective date of this Order have in effect procedures to implement this Order. Agencies shall consult with the Department of State and the Council on Environmental Quality concerning such procedures prior to placing them in effect.

2-2. *Information Exchange.* To assist in effectuating the foregoing purpose, the Department of State and the Council on Environmental Quality in collaboration with other interested Federal agencies and other nations shall conduct a program for exchange on a continuing basis of information concerning the environment. The objectives of this program shall be to provide information for use by decisionmakers, to heighten awareness of and interest in environmental concerns and, as appropriate, to facilitate environmental cooperation with foreign nations.

2-3. *Actions Included.* Agencies in their procedures under Section 2-1 shall establish procedures by which their officers having ultimate responsibility for authorizing and approving actions in one of the following categories encompassed by this Order, take into consideration in making decisions concerning such actions, a document described in Section 2-4(a):

(a) major Federal actions significantly affecting the environment of the global commons outside the jurisdiction of any nation (e.g., the oceans or Antarctica);

(b) major Federal actions significantly affecting the environment of a foreign nation not participating with the United States and not otherwise involved in the action;

(c) major Federal actions significantly affecting the environment of a foreign nation which provide to that nation:

(1) a product, or physical project producing a principal product or an emission or effluent, which is prohibited or strictly regulated by Federal law in the United States because its toxic effects on the environment create a serious public health risk; or

(2) a physical project which in the United States is prohibited or strictly regulated by Federal law to protect the environment against radioactive substances.

(d) major Federal actions outside the United States, its territories and possessions which significantly affect natural or ecological resources of global importance designated for protection under this subsection by the President, or, in the case of such a resource protected by international agreement binding on the United States, by the Secretary of State. Recommendations to the President under this subsection shall be accompanied by the views of the Council on Environmental Quality and the Secretary of State.

2–4. *Applicable Procedures.* (a) There are the following types of documents to be used in connection with actions described in Section 2–3:

(i) environmental impact statements (including generic, program and specific statements);

(ii) bilateral or multilateral environmental studies, relevant or related to the proposed action, by the United States and one more foreign nations, or by an international body or organization in which the United States is a member or participant; or

(iii) concise reviews of the environmental issues involved, including environmental assessments, summary environmental analyses or other appropriate documents.

(b) Agencies shall in their procedures provide for preparation of documents described in Section 2–4(a), with respect to actions described in Section 2–3, as follows:

(i) for effects described in Section 2–3(a), an environmental impact statement described in Section 2–4(a)(i);

(ii) for effects described in Section 2–3(b), a document described in Section 2–4(a)(ii) or (iii), as determined by the agency;

(iii) for effects described in Section 2–3(c), a document described in Section 2–4(a)(ii) or (iii), as determined by the agency;

(iv) for effects described in Section 2–3(d), a document described in Section 2–4(a)(i), (ii) or (iii), as determined by the agency.

Such procedures may provide that an agency need not prepare a new document when a document described in Section 2–4(a) already exists.

(c) Nothing in this Order shall serve to invalidate any existing regulations of any agency which have been adopted pursuant to court order or pursuant to judicial settlement of any case or to prevent any agency from providing in its procedures for measures in addition to those provided for herein to further the purpose of the National Environmental Policy Act and other environmental laws, including the Marine Protection Research and Sanctuaries Act and the Deepwater Port Act, consistent with the foreign and national security policies of the United States.

(d) Except as provided in Section 2–5(b), agencies taking action encompassed by this Order shall, as soon as feasible, inform other Federal agencies with

relevant expertise of the availability of environmental documents prepared under this Order.

Agencies in their procedures under Section 2-1 shall make appropriate provision for determining when an affected nation shall be informed in accordance with Section 3-2 of this Order of the availability of environmental documents prepared pursuant to those procedures.

In order to avoid duplication of resources, agencies in their procedures shall provide for appropriate utilization of the resources of other Federal agencies with relevant environmental jurisdiction or expertise.

2-5. *Exemptions and Considerations.* (a) Notwithstanding Section 2-3, the following actions are exempt from this Order:

(i) actions not having a significant effect on the environment outside the United States as determined by the agency;

(ii) actions taken by the President;

(iii) actions taken by or pursuant to the direction of the President or Cabinet officer when the national security or interest is involved or when the action occurs in the course of an armed conflict;

(iv) intelligence activities and arms transfers;

(v) export licenses or permits or export approvals, and actions relating to nuclear activities except actions providing to a foreign nation a nuclear production or utilization facility as defined in the Atomic Energy Act of 1954, as amended, or a nuclear waste management facility;

(vi) votes and other actions in international conferences and organizations;

(vii) disaster and emergency relief action.

(b) Agency procedures under Section 2-1 implementing Section 2-4 may provide for appropriate modifications in the contents, timing and availability of documents to other affected Federal agencies and affected nations, where necessary to:

(i) enable the agency to decide and act promptly as and when required;

(ii) avoid adverse impacts on foreign relations or infringement in fact or appearance of other nations' sovereign responsibilities, or

(iii) ensure appropriate reflection of:

(1) diplomatic factors;

(2) international commercial, competitive and export promotion factors;

(3) needs for governmental or commercial confidentiality;

(4) national security considerations;

(5) difficulties of obtaining information and agency ability to analyze meaningfully environmental effects of a proposed action; and

(6) the degree to which the agency is involved in or able to affect a decision to be made.

(c) Agency procedure under Section 2-1 may provide for categorical exclusions and for such exemptions in addition to those specified in subsection (a) of this Section as may be necessary to meet emergency circumstances, situations involving exceptional foreign policy and national security sensitivities and other such special circumstances. In utilizing such additional exemp-

APPENDIX B

Letter of Agreement Between the
U.S. Border Patrol and San Diego Gas
and Electric Company re: Transmission
Line Markers.

San Diego Gas & Electric

G. D. COTTON
VICE PRESIDENT - ENGINEERING

August 11, 1980

FILE NO. PMB 000
B781

U. S. Border Patrol
Attention: Mr. Bill Selzer
3752 Beyer Boulevard
San Ysidro, California 92073

Dear Mr. Selzer:

Re: Miguel-Tijuana 230-kV Transmission Line

San Diego Gas & Electric (SDG&E) is proposing to construct a 230-kV transmission line which will connect the electric power system of SDG&E and the Comision Federal de Electricidad (CFE). This transmission line will necessarily traverse an area in which the U.S. Border Patrol conducts both ground and aerial operations. Our representatives recently met to discuss reasonable methods of mitigating the potential impact to Border Patrol operations. Based on these discussions, SDG&E proposed to take the following actions wtih respect to the Miguel-Tijuana 230-kV transmission line:

1. All towers within a distance of 1½ miles north of the U.S.A./Mexico International Border will have red lights placed at the apex, all as indicated on drawing T.B-2053, dated 8/11/80.

2. Orange aerial markers will be placed on the ground wire strung between the towers for a distance of 1½ miles north of the U.S.A./Mexico International Border, also as indicated on drawing T.B-2053.

3. Orange aerial markers will be placed on the ground wire which span long canyons at locations specified on the attached drawing T.B -2053, dated 8/11/80, between Miguel Substation and the U.S.A./Mexico International Border.

We appreciate the cooperation received from the Border Patrol during our examination of impacts that the proposed transmission line will have on Border Patrol activities. If you concur that the items

listed above are appropriate measures to be taken in the design of the proposed transmission line, please so indicate by signing below and returning a copy to me.

Sincerely,

G. D. Cotton

Agreed to by: Donald M. Cameron, date 8-18-80
Donald M. Cameron
Chief Patrol Agent
Chula Vista, California

RWW/MRN/jlg
Attachment
cc: Don Cameron (U. S. Border Patrol, San Ysidro)
Frank Walker (International Boundary & Water Commission)
B. Y. Lee (California Public Utilities Commission)
Jim Brown (Department of Energy)
J. M. Burns
M. R. Niggli

SAN DIEGO GAS & ELECTRIC COMPANY
MIGUEL - TIJUANA
220 KV LINE
AIRCRAFT
MARKE
(DOMINGUES)
Buschalaugh
Lower Otay
Lower Otay
Campground Area
Lower Otay
Filtration Plant
SPILLWAY
DAM
BM 387
SPHERICAL
MARKERS
BM 320
FIREBREAK
O'Neal
Canyon
SAN BERNARDINO MERIDIAN
BROWN FIELD
BOMBING RANGE
Johnson
Canyon
Reservoir
BM 613
Rustler
Peak
BM 762
BM 823
Reservoir
SPHERICAL
MARKERS
T18S
T19S
6 CALIFORNIA
BAJA CALIFORNIA
R.1W.
R.1E.

APPENDIX C

Floodplain/Wetland Assessment

FLOODPLAIN/WETLAND ASSESSMENT

I. Project Description

The project involves construction of a 10 mile long 230-kV electric power transmission line through Southern San Diego County. This line will connect the San Diego Gas & Electric (SDG&E) grid with the Comision Federal de Electricidad grid in northern Mexico. The average span between towers is 1175 feet. The transmission route crosses the Otay River Valley about three and one half miles north of the international border. The transmission line will cross the Otay River Valley at a point where the 100-year flood hazard zone is approximatly 1000 feet wide as shown on Map C-1. The applicant is proposing to place one of the transmission towers in the 100-year flood hazard zone, an area of high hazard with the statistical potential of being flooded once during a 100 year period. The applicant proposes to construct a tower footing adequate to resist flood water damage. In addition, a wooden pole diversion structure would also be placed upstream to protect the tower legs from damage by water-borne debris. The only wetlands in the project area are vernal pools, which are temporary ponds that fill with water after the winter rains. Special habitats are associated with the vernal pools. The transmission line will avoid the pools to prevent potential impacts.

II. Floodplain/Wetlands Effects

The area of the Otay River Valley where SDG&E proposes to locate its transmission line is very sparsely vegetated, with large areas of rocky and sandy ground. Parts of the area are being disturbed by sand and gravel extraction. A few hundred feet to the east of the proposed transmission route, there is a riparian woodland with such trees as Willows (*Salix ssp.*), Western Sycamore (*Platanus racemosa*) and Fremont Cottonwood (*Populus fremontii*). There is no surface water in this section of the Otay River.

The applicant's proposed placement of a transmission tower in the floodplain would disturb approximately 1000 square feet of ground covered by the tower and diversion structures. A slightly larger area would be disturbed during tower assembly. Access to the tower site can be gained by existing jeep roads and gravel and sand truck hauling roads that traverse the area. Construction of the transmission tower in the floodplain should not significantly affect a riparian or wetland area. A 100-year flood should not appreciably damage the tower or jeopardize transmission of power.

The Otay River Valley is visible from the Lower Otay Camping area, located about one half mile east of the proposed transmission route. A transmission tower in the floodplain would be visible from parts of the camping ground. The wooden diversion structure may also be visible.

Construction of a tower in the Otay River floodplain would eliminate the necessity to relocate a 12-kV line in the Otay Valley that runs perpendicular to the proposed transmission route.

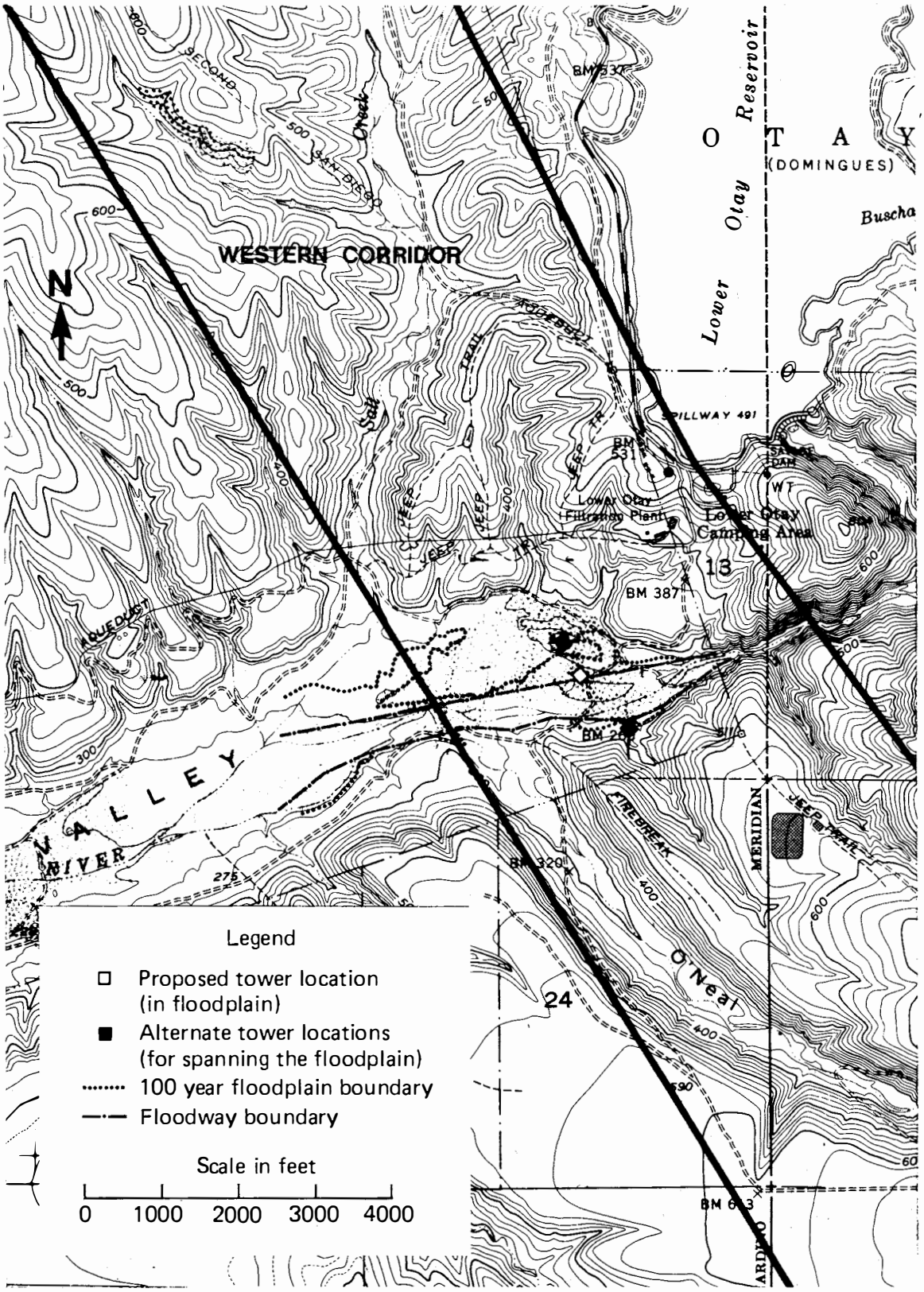
The transmission line will be sited so as to avoid vernal pools, and therefore adverse impacts to the only wetlands in the area will not occur.

III. Alternatives

The proposed placement of the transmission tower in the floodplain can be avoided by shifting the alignment of the route to the east or west where the floodplain is narrower or by construction of one additional tower along the existing alignment and spanning the floodplain. Shifting the alignment to the east or west may also require additional towers. If the alignment were shifted to the east a few hundred feet it would cross a rich riparian habitat. This is not expected to cause any direct adverse impacts. Shifting the alignment to the east will place it closer to Otay Camping ground and will have a potentially greater visual impact. Shifting the line to the west will generally reduce the visual impact.

Construction of one additional tower along the proposed alignment will allow the floodplain to be spanned and avoid the necessity to locate a tower in the floodplain. The visual impact of this alternative is slightly higher since one more tower will be visible from some locations of the Otay Camping Grounds. Also, an existing 12 kV power line that runs perpendicular to the proposed alignment, would have to be relocated or lowered if the floodplain were spanned. The cost of constructing one additional tower is estimated by the applicant to be $61,900. The applicant estimates a cost of $62,500 for construction of one tower in the floodplain, with a deeper and stronger foundation and a direct-embedded wooden pole barrier to divert water-borne debris from the tower legs.

In summary, the only substantial difference between the proposed one tower in the flood plain and the alternative of spanning the floodplain with two towers is a possible minor visual effect of two towers compared to one. Either approach is technically feasible, equivalent in cost and differs little in environmental effects.



Map C-1 San Diego Gas and Electric Company placement of towers in the Otay River flood plain.

* U.S. GOVERNMENT PRINTING OFFICE : 1980 - 341-777/234

United States
Department of Energy
Washington, D.C. 20585

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