APPLICATION OF

SEMPRA ENERGY RESOURCES

FOR A PRESIDENTIAL PERMIT

Submitted by:

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UNITED STATES OF AMERICA
BEFORE THE
DEPARTMENT OF ENERGY
OFFICE OF FOSSIL ENERGY

SEMPRA ENERGY RESOURCES **DOCKET NO.** PP-235

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I. INTRODUCTION

Pursuant to Executive Order (EO) No. 10485, as amended by EO 12038, and 10 CFR § 205.320 *et seq.* (2000), Sempra Energy Resources (SER) hereby applies for a Presidential Permit authorizing SER to construct, operate, and maintain an electric power transmission facility crossing the international border between the United States and Mexico. This proposed transmission facility will electrically interconnect Termoeléctrica de Mexicali (TDM), an independent power generation facility to be constructed in Mexicali, Mexico, with the Imperial Valley Substation, located in Imperial County, California, which is owned and operated by San Diego Gas & Electric (SDG&E).

SER is a California corporation engaged in the non-regulated generation and wholesale of electric power.

The proposed electric power transmission facility (transmission line or facility) will have a total length of approximately 9 miles. The facility will consist of a new double-circuit 230 kV transmission line extending about six miles south from the SDG&E Imperial Valley Substation (IV Substation) to the U.S.-Mexico international border. From the international border, the transmission line will extend another approximately three miles south to its interconnection point at TDM.

The portion of the transmission line located in the U.S. (approximately six miles) will be constructed, operated and maintained by Sempra Energy Resources (SER). The portion of the transmission line located in Mexico (approximately three miles) will be constructed, operated and maintained by Termoeléctrica de Mexicali, who is also constructing, operating and maintaining the power plant that will transfer energy to the U.S. on SER's proposed 230 kV transmission line. Exhibit A contains a routing map of the proposed facility, showing the transmission line initiating from TDM, crossing the international border into the U.S., and terminating at the SDG&E IV Substation.

The approximately six-mile U.S. portion of the proposed double-circuit transmission line will be constructed in accordance with all applicable U.S. provisions, standards, rules,

and regulations. These include those of the Federal Energy Regulatory Commission (FERC), Department of Energy (DOE), Bureau of Land Management (BLM), International Boundary and Water Commission (IBWC), California Independent System Operator (ISO), U.S. Army Corps of Engineers (USACE), and U.S. Fish & Wildlife Service (USFWS). The approximately three-mile portion of the proposed transmission line south of the international border will be constructed in accordance with Mexican provisions, standards, rules, and regulations. These include those of the Mexican Comisión Federal de Electricidad (CFE), Comisión Reguladora de Energia (CRE), and Instituto Nacional de Ecologia (INE).

The proposed transmission line routing parallels on the east an existing SDG&E-CFE 230 kV transmission line that runs from the SDG&E Imperial Valley Substation to the CFE La Rosita Substation in Mexico. The proposed transmission line would cross U.S.-Mexico international border at the coordinates long. 115°40'49" W and lat. 32°39'04" N (Exhibit B).

Termoeléctrica de Mexicali, a wholly owned subsidiary of Sempra Energy companies, is proposed to be a nominal 500 MW electric generating facility. TDM will utilize gas turbine technology in a combined cycle configuration, utilizing natural gas as fuel. Importantly, the facility will be equipped with the latest in air emissions control technology, including dry low-NO_x combustor technology and selective catalytic reduction (SCR) system for oxides of nitrogen emissions control, and catalytic oxidizers for carbon monoxide emissions control. TDM's proposed 500 MW generating facility will achieve air emission levels equal to those required in California. TDM has received a Mexican environmental permit (Manifesto de Impacto Ambiental D.O.O.DGOEIA-000032) for the proposed 500 MW generating facility, as well as for the linear transmission line facilities located in Mexico.

The proposed 230 kV transmission line will be used to export 100 percent of TDM's net generating capacity to the U.S. Power will be exported from the U.S. to TDM for purposes of initial start-up of TDM facilities (such as water treatment and cooling towers), for the purpose of providing "black start" capability to the power plant, and for purposes of providing ancillary equipment power when the facility's electrical generating equipment is not in operation (such as during weekend plant shutdowns). Power exports from the U.S. to TDM for "black start" and ancillary equipment operation during plant shutdown will occur routinely, with a maximum of 12 MW to be exported.

The proposed 230 kV double-circuit transmission line will be used to initially transmit a nominal 500 MW of power (approximately 700 MW maximum peak) into the U.S., with the potential for an ultimate nominal 1000 MW (with an approximate 1400 MW peak) of power using a possible future, second circuit of appropriately sized bundled conductors on the same 230 kV transmission structures (towers or monopoles) to accommodate possible future expansion capability, generated by TDM, to the existing SDG&E Imperial

Valley (IV) Substation. The proposed transmission line will be operable year round. The transfer of electricity on the proposed transmission line will reduce the region's dependence upon conventional oil-burning generation plants, and improve the region's ability to meet future electrical capacity and energy requirements. Some improvements to the Imperial Valley Substation may be necessary to accommodate the interconnection. These improvements would all be within the existing fenced boundaries of the substation and are expected to include such items as new transformers, bus works, switch gear, and "drop-off" structures.

The proposed route of SER's U.S. facilities, the approximately six-mile portion of the proposed transmission 230 kV line, is entirely within the U.S. Bureau of Land Management (BLM) property in the Yuha Basin of the Colorado Desert. The remainder of the double-circuit transmission line (approximately 3 miles) will be constructed in Mexico by TDM. SER has requested the use of a 120-foot-wide right-of-way for the 230 kV transmission line from the BLM, and on February 14, 2001, filed an "Application for Transportation and Utility Systems and Facilities on Federal Lands" (SF299) with the El Centro, California, office of the BLM. SER has also begun biological and cultural resource studies in support of an anticipated Environmental Assessment (EA) under the National Environmental Policy Act (NEPA). BLM has indicated that DOE would have lead agency status for NEPA purposes.

II. PRESIDENTIAL PERMIT APPLICATION

(a) INFORMATION REGARDING THE APPLICANT

(1) Applicant's Legal Name. The legal name of the applicant is Sempra Energy Resources.

(2) Partners. None.

(3) Correspondence. Alberto Abreu
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(4) Foreign Ownership. SER is not owned wholly or in part by a foreign government. SER currently owns no transmission lines. SER is not directly or indirectly assisted by a foreign government or instrumentality thereof in the construction or financing of the facilities within the U.S.

(5) Corporate Authority and Compliance with Laws. An opinion of counsel to the effect that the construction, connection, operation, and maintenance of the proposed 230 kV transmission line is within the Applicant's (SER's) corporate powers and that the Applicant has complied with all pertinent federal and state laws is attached as Exhibit C.

(b) INFORMATION REGARDING THE TRANSMISSION LINE TO BE COVERED BY THE PRESIDENTIAL PERMIT

(1)(i) General Technical Description

(A) Number of Circuits and Placement. SER proposes to construct an overhead transmission line using either lattice steel towers or steel monopoles extending approximately six miles south from the existing SDG&E Imperial Valley Substation to the U.S.-Mexican border, crossing the border at coordinates long. 115°40'49.03" W and lat. 32°39'03.81" N. The transmission line is planned to ultimately consist of two 230 kV circuits, one circuit on each side of a tower or pole.

(B) Operation Voltage and Frequency. The nominal operating voltage would be 230 kV, three-phase, at a frequency of 60 Hz. The maximum operating voltage would be 245 kV.

(C) Conductors. The type of conductor (wire) proposed is aluminum conductor steel reinforced (ACSR). An alternative, with the choice to be determined during detailed design, is to use aluminum conductor steel supported (ACSS), which is a new conductor type that may be able to carry more current. The actual conductor size will also be determined during detailed design of the transmission line; however, it is expected that it will not exceed three (3), bundled 1590 kcmils conductors per phase (kcmil = 1000 circular mils, where 1 circular mil = one thousandth of 1 square inch).

(ii) Additional Information Regarding Overhead Lines

(A) Wind/Ice Loading Design Parameters. The transmission line will be designed for an anticipated wind loading of 200 kilometers per hour (125 miles per hour). No ice loading parameters are necessary.

(B) Description of Typical Supporting Structures. Typical steel lattice towers are shown in Exhibits D1 (tangent structure) and D2 (deadend structure). Typical steel monopoles are shown in Exhibits D3 (tangent structure) and D4 (deadend structure). The towers or poles would be approximately 120 to 140 feet in height. The lowest arms of the towers or poles would be approximately 80 feet from the ground, and would support insulators that in turn support the 230 kV conductors. Conductors on the towers or poles would be supported from single or double insulators depending upon final tower

or pole design. The minimum ground clearance of the conductor is 30 feet. The lattice towers would be anchored to a concrete foundation approximately 3 to 6 feet in diameter at each of the four corners at the base of the tower. The towers would be approximately 30 by 30 square feet at the base, tapering to approximately 12 by 12 square feet at the top. Steel monopoles would be approximately 4 to 6 feet in diameter at the base, tapering to approximately 1 to 2 feet in diameter at the top. Steel monopoles would be anchored to a concrete foundation approximately 7 to 11 feet in diameter. It is anticipated that the future build-out of the transmission line would have the potential for an ultimate nominal 1000 MW (1400 MW maximum) of power using bundled conductors on the same two-circuit transmission structures. The initial number of circuits will be two plus two static wires at the top. The two optical ground static wires will include the initial installation of communications fiber for system protection and monitoring, with additional black fiber for future communications use.

(C) Structure Spacing. The supporting structures would be constructed along the center of a 120-foot-wide right-of-way approximately 900 to 1,100 feet apart. The right-of-way would be east of and adjacent to an existing 120-foot-wide SDG&E right-of-way for an existing 230 kV transmission line. The centerline of the new transmission line would be approximately 120 feet from the centerline of the existing transmission line. Spacing of the structures could vary within the nominal limits in order to avoid or minimize impacts to sensitive biological or cultural resources.

(D) Conductor Spacing. Vertical spacing between phases would be 16 feet 6 inches.

(E) Line to Ground and Conductor Side Clearances. The horizontal average distance between circuits for phase conductor spacing would be 35 feet conductor to conductor. Minimum clearance for phase conductor to ground spacing would be 30 feet, with a design margin of 3 to 5 feet.

(iii) Additional Information Regarding Underground and Underwater Lines

No underground or underwater lines are proposed.

(2) General Area and Detailed Border Area Maps

A general area map showing the overall facility is attached as Exhibit A. A detailed map of the facility on the international border showing the physical location, longitude, and latitude of the facility, and identifying the ownership of the facilities at or on each side of the border, is attached as Exhibit B.

(3) Bulk Power System Information

(i) Expected Power Transfer Capability. The maximum power transfer capability will be determined during detailed design but in general is limited by the maximum electric thermal capability for the double-circuit 230 kV line. It is estimated that the normal thermal capability for the line will be approximately 700 MVA at a 0.9 power factor, with an eventual maximum of 1400 MVA with the same power factor. The estimated short-time emergency thermal capability of the line will be approximately 750 MVA at a 0.90 power factor, with an eventual maximum of 1500 MVA at a 0.90 power factor.

(ii) System Power Flow Plots. Exhibit E, Plot 1 shows the 2003 Heavy Summer base case 230 kV transmission system flows without the addition of TDM. Plot 2 of the same exhibit shows the 2003 Heavy Summer base case 230 kV transmission system flows with TDM interconnected. SER will shortly supplement this application with additional flow studies for the 2003 Light Spring load conditions, as well as the 2008 Heavy Summer load conditions. Please note that there is no 2008 WSCC Light Spring base case available.

(iii) Interference Reduction Data. A 230 kV line normally does not present radio or television interference problems. The transmission line design will mitigate possible interference by providing corona rings on the insulators and corona free hardware.

(iv) Relay Protection. The transmission line will be connected from TDM to the existing SDG&E distribution network at the existing Imperial Valley Substation and therefore will comply with SDG&E Utility Practices for relay protection. The transmission line will not be interconnected with the Mexican grid.

(v) System Stability Analysis. This information will be provided by SER if requested by ERA after review of the system power flow plots.

(c) POTENTIAL ENVIRONMENTAL IMPACTS

(1) Assessment of Environmental Impacts. SER has begun an assessment of potential environmental impacts of the proposed facilities, including biological and cultural resource field surveys. Therefore, it should be noted that the environmental and cultural resource information provided herein may be updated once all of the surveys are complete and an Environmental Assessment is prepared. There are no wetlands or navigable waters in the proposed route, but there are existing desert washes regulated by the U.S. Army Corps of Engineers as non-wetland jurisdictional waters. The largest of these existing desert washes is the Pinto Wash, located in the northern portion of the proposed transmission line route. Two areas of 100-year floodplain, associated with the

Pinto Wash, are mapped on the Federal Emergency Management Administration (FEMA) Flood Insurance Rate Maps (FIRM). All property in the approximately six-mile U.S. portion of the proposed transmission line right-of-way is owned by the BLM and is in the Yuha Basin Area of Critical Environmental Concern (ACEC) in the California Desert Conservation Area. No Native American lands are present in the proposed route. No plant or animal species listed as threatened or endangered by the USFWS are known to be present in the proposed right-of-way. However, the Yuha Basin ACEC is designated by the BLM as crucial habitat for the flat-tailed horned lizard (*Phrynosoma mcalli*), which is listed as a sensitive species by the BLM. A number of prehistoric and possibly historic sites are known to be present in the area of the proposed transmission line route.

(2) Known Historic Places. A record search conducted for the project at the Southeastern Information Center revealed no sites within the proposed right-of-way that were listed on the National Register of Historic Places. However, the proposed route passes along and through the prehistoric shoreline of Lake Cahuilla. The prehistoric shoreline is the location of numerous recorded archaeological sites, especially in the area where the proposed transmission line alignment crosses Pinto Wash. Because any of these sites could potentially be eligible for the National Register, field surveys will be required to determine their status. SER's environmental consultant (RECON Environmental, Inc.) has applied to the BLM's El Centro office for permission to conduct field surveys to locate the recorded sites and survey for other possible sites. Areas of transmission line impact that could affect historic places include permanent footings for towers or monopoles, permanent access roads for maintenance, temporary construction work areas at each tower or pole site, and an estimated maximum of three wire stringing sites. Locations of these impact areas have not yet been determined, and since there is some flexibility in where individual tower or monopole structures are located, it is anticipated that any potential impacts can be minimized. Cultural resource field surveys will establish the location of all historic sites in the potential areas of impact, and to the extent feasible SER will attempt to locate work areas and areas of permanent impact so as to reduce or avoid resource impacts.

(3) Proposed Minimum Right-of-Way Width. SER has applied to BLM for a right-of-way 120 feet wide, which would be located east of and adjacent to the existing 120-foot-wide right-of-way for SDG&E's existing 230 kV transmission line. SER is also asking the BLM for practical routes of ingress and egress for construction and maintenance, and is requesting a Temporary Use Permit from the BLM for use of additional lands for construction, storage, and staging outside the right-of-way during construction of the transmission line. The locations of the existing right-of-way and the proposed new right-of-way are within utility corridor N as designated in the BLM's California Desert Conservation Area Plan. The proposed right-of-way width of 120 feet is wide enough so that, under extreme wind conditions, the transmission line conductor does not swing (blow out) past the edge of the right-of-way. To conform to standard

practices, the centerline of SER's proposed new 230 kV power line will be approximately 120 feet from the centerline of SDG&E's existing 230 kV line. However, the separation of the lines could vary slightly from this minimum distance if necessary, for instance, to avoid sensitive resources.

The towers or monopoles would be approximately 120 to 140 feet in height. The height of the lowest arm of the poles would be approximately 80 feet from the ground. The lattice towers will be anchored to a concrete foundation approximately 3 to 6 feet in diameter at each of the four corners at the base of the tower. The towers would be approximately 30 by 30 square feet at the base, tapering to approximately 12 by 12 square feet at the top. Steel monopoles would be approximately 4 to 6 feet in diameter at the base, tapering to approximately 1 to 2 feet in diameter at the top. Steel poles will be anchored to a concrete foundation approximately 7 to 11 feet in diameter.

Grading will be done around the tower and pole locations as necessary to accommodate construction and access, but due to the flat nature of the area, limited grading is expected. The amount of temporary land disturbance within BLM lands anticipated during construction is 150 by 200 feet (0.69 acre) at each tower or monopole site for a total of approximately 20.7 acres of temporary disturbance based on the construction of a total of 30 towers or monopoles. Permanent disturbance beneath the base of each tower site would be approximately 30 feet by 30 feet, or approximately 900 square feet. Permanent disturbance at the base of each steel monopole site would vary from approximately 22 square feet to 35 square feet, based on footing diameters of 7 feet and 11 feet, respectively.

It is anticipated that three (3) wire stringing sites will be needed for construction. The area of temporary land disturbance within BLM lands anticipated during wire stringing operations is approximately 120 feet by 250 feet (0.69 acre) at each stringing site, or 2.07 acres for the entire stringing operation. It is anticipated that most areas of temporary or permanent construction disturbance will be adjacent to the access roads. With the exception of permanent access roads required for ongoing operation and maintenance, all temporarily disturbed areas will be restored and/or revegetated as required following completion of construction.

Access roads will be needed to construct, operate and maintain the 230 kV transmission line. However, it may be possible to utilize and/or extend SDG&E's existing access roads since the proposed 230 kV transmission line will be installed parallel to the existing SDG&E 230 kV transmission line and will be built to standard engineering design practices.

A storage and staging area of approximately two acres will be needed during construction. The location of this storage area is yet to be determined. SER proposes to site the storage and staging area in an area where sensitive biological and cultural

resources will be least impacted, pending the results of biological and cultural resource surveys. SER is also exploring locating the storage and staging area in disturbed areas such as agricultural lands located to the east of the proposed right-of-way to avoid impacts to environmental resources. With some flexibility in the location of tower or monopole locations, wire stringing sites, and the staging and storage area, SER will attempt to avoid or reduce impacts to environmental resources as much as possible.

(4) Threatened or Endangered Wildlife or Plant Life. No species of plants or animals listed by the USFWS as threatened or endangered are known to exist in the proposed right-of-way, and none were identified in field surveys of the project area conducted by RECON for SER in September and October of 2000. During project construction, there is a potential for disturbance to the habitat of one sensitive animal species, the flat-tailed horned lizard (*Phrynosoma mcalli*), and two plant species, Wiggins's cholla (*Opuntia wigginsii*) and Thurber's pilostyles (*Pilostyles thurberi*). The flat-tailed horned lizard is designated a sensitive species by the BLM, is designated a species of special concern by the California Department of Fish and Game, and the Yuha Desert is considered a special management area for this species. Wiggins's cholla is listed by the California Native Plant Society (CNPS) as a List 3 species (plants for which additional information is needed). Thurber's pilostyles is a CNPS List 4 (species of limited distribution).

Single individuals of two other sensitive animal species were observed in the vicinity of the proposed right-of-way during the RECON biological surveys. A burrowing owl (*Speotyto cunicularia hypugaea*) was seen on the ground and a prairie falcon (*Falco mexicanus*) was observed perched on one of the SDG&E transmission poles. Both species are designated as sensitive species by the BLM and are listed as species of special concern by the California Department of Fish and Game.

To the extent feasible, the proposed project would construct those portions of the proposed 230 kV transmission line located in flat-tailed lizard habitat during the fall and winter months, the lizard's dormant period, in order to avoid any unnecessary impacts to the lizard. To minimize potential impacts to the flat-tailed horned lizard, the project will conform to the List of Standard Mitigation Measures for Flat-tailed Horned Lizard as provided in the Flat-tailed Horned Lizard Rangewide Management Strategy (1997). Construction measures will include, but not be limited to: (1) locating the towers in areas of poor habitat quality where available; (2) flagging the limits of construction; (3) planning construction during the lizard's dormant period; and (4) having a qualified biological monitor present during the length of construction to ensure that all feasible measures are taken to avoid direct impact to the lizard. With appropriate pre-construction flagging for avoidance and biological monitoring of construction, potential impacts to Wiggins's cholla, Thurber's pilostyles and the burrowing owl as a result of project construction may be minimized.

(d) ALTERNATIVES TO THE PROPOSED FACILITY

Practical alternatives to the proposed project that were considered include, upgrading the existing SDG&E 230 kV system, an alternative 230 kV transmission route to the east of the proposed route, and construction of a 230 kV underground transmission route.

(1) **Upgrading the Existing System.** The existing electric delivery system in the project area is a 230 kV overhead, electrical transmission line (Circuit TL 23050) which is owned and operated by SDG&E on the U.S. side of the international border, and by the Comisión Federal de Electricidad on the Mexican side. The existing 230 kV line is constructed with double-circuit structures, with only one circuit of conductors presently installed and only one remaining vacant position. The existing 230 kV line connects the Mexican CFE transmission network with the SDG&E transmission network, providing for the exchange of electrical power in either direction. The capacity of the existing 230 kV circuit is limited to its original design value. With the current energy crisis as a factor, SDG&E and CFE are presently considering using the existing vacant position for an additional 230 kV circuit. Even with such an upgrade to the existing line, the transfer capability of that line will be limited, so that no additional power could be transferred beyond the anticipated 816 MW that CFE intends to export. While using the vacant position for SER's proposed transmission line could reduce environmental impacts by eliminating impacts associated with construction of new towers or poles and the extension of access roads, that position will not be available for SER's use. Also, SER's use of the vacant position would not accommodate the import of power beyond that already intended by CFE, could not accommodate the proposed nominal 500 MW or the eventual 1000 MW of electrical energy imports from Termoeléctrica de Mexicali TDM, and would not provide the future expansion capability needed.

(2) **Alternative Transmission Route.** An alternative route further east of the proposed route, utilizing non-federal land as much as possible, would be approximately the same length as the proposed project, or likely longer. It would avoid most impacts to environmental resources on federal lands. However, this alternative route would be too far from the existing 230 kV transmission line to utilize current access roads for construction and maintenance. Therefore, it is probable that more new access roads would be required for an alternative route, and if not, the extension of spur roads from existing roads would also be longer and would also cross federal land. In addition, any feasible alternative route would lie to the east and would cross private land used for agriculture. Any easterly alternative route for the transmission line would displace agricultural lands under towers and/or around poles and create conflicts between aerial crop dusting and other agriculture practices. Easterly alternative routes would also not achieve the goal of providing for aggregating existing and proposed electric utility lines into a designated and mapped utility corridor (i.e., corridor N of the BLM Desert Plan).

(3) **Underground Transmission Line.** Underground transmission lines are normally reserved for dense urban areas where no reasonable overhead route is possible. This alternative would require increased labor and significant costs in both construction and maintenance. Underground construction requires trenching throughout the entire length of the line. This would result in a much larger area of environmental impacts during construction than an overhead transmission line and would afford less opportunity to avoid sensitive resources.

(e) VERIFICATION

This application has been verified under oath by an officer of the Applicant having knowledge of the matters set forth above. This verification is attached as Exhibit F.