D.10 Public Health and Safety

This section evaluates the potential hazards to public and worker health and safety associated with the Proposed PROJECT. Sections D.10.1 and D.10.2 describe the environmental setting/affected environment of the Proposed PROJECT related to environmental contamination, hazardous materials sites, and historical and current uses, as well as the regulatory framework applicable to the analysis of hazards and hazardous materials in the project study area. Section D.10.3 includes an analysis and discussion of environmental contamination, hazardous materials, and impacts/environmental effects to public and worker health and safety resulting from the Proposed PROJECT, as well as mitigation for these impacts. Sections D.10.4 through D.10.7 analyze project alternatives with regard to the subjects of environmental contamination and hazardous materials safety. Sections D.10.8 and D.10.9 address concerns related to electromagnetic fields (EMFs) and other field-related concerns. Section D.10.10 presents the mitigation monitoring program for all topics addressed in this section, Section D.10.11 addresses residual effects of the project, and Section D.10.12 provides references cited in this section.

Potential impacts related to airport hazards are discussed in Section D.9, Transportation and Traffic, and potential fire hazards are discussed in Section D.15, Fire and Fuels Management, of this Environmental Impact Report/Environmental Impact Study (EIR/EIS).

D.10.1 Environmental Setting/Affected Environment

Methodology and Assumptions

This section identifies known hazardous waste contamination sites within the East County (ECO) Substation, Tule Wind, and Energia Sierra Juarez U.S. Generator-Tie (ESJ Gen-Tie), as well as the Campo, Manzanita, and Jordan wind energy project areas. The Campo, Manzanita, and Jordan wind energy projects are being analyzed at a program level in this EIR/EIS as no site-specific survey data is available. Due to the close proximity of these wind energy projects to the ECO Substation, Tule Wind, and ESJ Gen-Tie projects, a similar public health and safety setting is assumed.

Potentially hazardous sites are identified in order to protect worker health and safety and to eliminate or minimize public exposure to hazardous materials during construction and waste handling activities. Contaminated soil may qualify as hazardous waste and thus require handling and disposal according to local, state, and federal regulations. Information about known hazardous material sites was collected from a review of the following documents:

- Phase I Environmental Site Assessment of San Diego Gas and Electric's Proposed East County Substation, Site B-2 (Tetra Tech EM, Inc. 2008a)

- Limited Phase I Environmental Site Assessment of San Diego Gas and Electric's East County Substation Project – 69 kV Transmission Line Corridor (Tetra Tech EM, Inc. 2008b)
- A hazardous materials record search (extending over 0.5 mile beyond the project boundary) with the County of San Diego Department of Environmental Health and with the State of California Water Resources Control Board GeoTracker for the Tule Wind Project (HDR 2010)
- Environmental Data Resources Inc. DataMap Area Study: Tule Project (EDR 2010)
- Phase I Environmental Site Assessment of 360 Acres of Vacant Land in Support of the Energia Sierra Juarez Project, Near Old Highway 80, Unincorporated San Diego County, California (AECOM 2009).

D.10.1.1 General Overview

The Proposed PROJECT traverses land utilized for a variety of uses, including open space recreation, general rural uses (e.g., large lot ranches, single-family homes, and small-scale agricultural operations), recreational, rural commercial, and limited industrial activities. Existing and past land use activities are potential indicators of hazardous material storage and use. Many current and former commercial, industrial, and military sites have soil or groundwater contamination by hazardous substances such as heavy metals and vehicle fuels. Additionally, military sites may have known or unknown unexploded ordnance in areas used for target practice and ordnance storage. Many industrial sites, historical and current, are known to have soil or groundwater contamination by hazardous substances. Other hazardous materials sources include leaking underground storage tanks (LUST) in commercial, rural, and agricultural areas; surface runoff from contaminated sites and agricultural fields treated with pesticides and herbicides; and migration of contaminated groundwater plumes from areas of past and current commercial or industrial use.

As part of various database and records searches performed for the Proposed PROJECT components, as summarized previously, a number of potentially contaminated soil or groundwater sites were identified within the study area. Many of the areas of concern in the area are LUST sites, primarily associated with gas/oil facilities, such as gasoline station and auto repair facilities. As a result, the soils and groundwater in the vicinity of these areas potentially contain varying amounts and types of petroleum hydrocarbons (e.g., gasoline and diesel) and fuel additives.

D.10.1.2 ECO Substation Project

With the exception of a 1.5-mile segment of the 138-kilovolt (kV) transmission line traversing Bureau of Land Management (BLM)-administered land, the entire proposed ECO Substation Project would be located on County of San Diego jurisdictional lands in the vicinity of the unincorporated communities of Jacumba and Boulevard. Existing land uses in the project area include a mixture of general rural uses (large lot ranches, single-family homes, and small-scale agricultural operations) and undeveloped rural land.

ECO 500/230/138 kV Substation

The location of the proposed ECO 500/230/138 kV substation is currently undeveloped and is surrounded by vacant land. Overhead power lines are located at the northern boundary of the project site.

According to the records search conducted as part of the Phase I Environmental Site Assessment (ESA) for the ECO Substation (Tetra Tech EM, Inc. 2008a), the proposed substation site is not listed on any federal, state, or local regulatory agency database. The records search included a review of 41 federal agency databases, 31 state and local databases, and 4 tribal records. In addition, adjacent properties within 2 miles of the subject property are not listed on any federal, state, and local regulatory agency databases indicating the presence of a recognized environmental condition. Also, a request for environmental records pertaining to the subject site and adjacent properties was submitted to several local regulatory agencies, including the County of San Diego (County) Department of Public Works, County of San Diego Department of Environmental Health (DEH), San Diego Air Pollution Control District, San Diego Fire Station Number 88 (Jacumba), San Diego Department of Toxic Substance Control (DTSC) field office, and San Diego Regional Water Quality Control Board (RWQCB). Although the Jacumba Fire Station (Station No. 88) was unresponsive to requests for information files, all other agencies were responsive. No environmental records for the subject property or adjacent properties were identified by these agencies (Tetra Tech EM, Inc. 2008a).

In addition to regulatory agency database review and a local records search, Tetra Tech EM, Inc., conducted site reconnaissance to better assess potential environmental conditions occurring at the subject property and adjacent properties. During site reconnaissance, conducted in March 2008, three locations with recognized environmental conditions were identified within the subject property and southeast of the subject property. Each of the locations was identified as an informal shooting range containing various sources of hazardous materials, including electronic waste, empty propane tanks, spent shotgun shells, and used clay pigeons (Tetra Tech EM, Inc. 2008a). An additional shooting range was observed southwest of the subject property at a distance of greater than 2 miles (Tetra Tech EM, Inc. 2008a). Spent

ammunition from shooting ranges can pose a threat to the environment and to human health. In addition to other chemicals of concern (including arsenic, copper, nickel, and zinc) that are common at shooting range sites, lead is also a potential threat as spent ammunition oxidizes. Incidental ingestion or inhalation of lead materials during ground-disturbing activities represents a potential exposure scenario during construction of the ECO Substation yards (Tetra Tech EM, Inc. 2008a). Additional investigation was recommended by Tetra Tech EM, Inc., in order to identify the extent of contamination associated with the spent ammunition and waste found at the three shooting ranges. No underground storage tanks (USTs) or aboveground storage tanks were identified during the site visits.

Southwest Powerlink Loop-In

The Southwest Powerlink (SWPL) Loop-In would connect the ECO Substation 500 kV bus to the existing Southwest Powerlink transmission line, located approximately 300 feet north of the proposed ECO Substation yards. The SWPL Loop-In would traverse undeveloped land located immediately east of the proposed ECO Substation 500 kV bus. Although a Phase I ESA was not specifically prepared for the proposed SWPL Loop-In, the Phase I ESA prepared for the ECO Substation yards concluded that properties within a 2-mile radius of the ECO Substation yards (which include the SWPL Loop-In location) are not identified on any federal, state, or local regulatory agency databases. Three shooting ranges were identified in the Phase I ESA and are located within the vicinity of the SWPL Loop-In location. The Phase I ESA recommended additional investigation of the shooting ranges to identify the extent of possible contamination.

138 kV Transmission Line

The proposed 13.3-mile, 138 kV transmission line primarily traverses undeveloped land between the proposed ECO Substation and the proposed Boulevard Substation Rebuild site.

According to the records search conducted as part of the Limited Phase I ESA for the 138 kV transmission line corridor (Tetra Tech EM, Inc. 2008b), 26 properties and 72 orphan sites (sites that were not listed with addresses) are located within 2 miles of the transmission line corridor. The records search included a review of 37 federal agency databases, 19 state and local databases, and 4 tribal records (Tetra Tech EM, Inc. 2008b). It should be noted that 14 of the 72 orphan sites were previously identified as one of the properties listed in regulatory agency databases. Additionally, based on distance and/or regulatory status, Tetra Tech EM, Inc., concluded that the remaining 58 orphan sites do not pose a risk to the proposed 138 kV transmission line corridor (Tetra Tech EM, Inc. 2008b). The Phase I ESA concluded that due to several factors (including regulatory status, distance, elevation, current authorized land use, and finding of recent site assessments), all 26 properties listed in the regulatory databases have little potential to impact the transmission line corridor. The 26 listed properties and their associated

risk are identified in the Limited Phase I ESA (Tetra Tech EM, Inc. 2008b). In addition, the Limited Phase I ESA concluded that there was no evidence of known or existing recognized environmental conditions in connection with the transmission line corridor.

The Limited Phase I ESA also identified several data gaps associated with both listed and non-listed properties occurring in the transmission line corridor. Data gaps are instances in which information is not available to accurately assess the potential for contamination emanating from a site. Several data gaps were identified for listed properties, including the Jacumba Burnsites 1 and 2, Jacumba Texaco Gas Station, and the California Department of Transportation (Caltrans) Boulevard Facility. In addition, site reconnaissance conducted in April 2008 identified six properties not listed on any regulatory agency database but thought to potentially contain contamination (Tetra Tech EM, Inc. 2008b). These properties included an automotive maintenance yard, a large debris pile, agricultural operations and a large fertilizer tank, an equipment storage yard, a scrap-metal junkyard, and a solid waste disposal facility. The debris pile has since been removed from the site, and the agricultural fields are part of a certified organic farm (SDG&E 2009). In some instances, unlisted properties contained visible aboveground storage tanks, debris piles, and automotive wastes.

Boulevard Substation Rebuild

The Boulevard Substation Rebuild site would be located adjacent to the existing Boulevard Substation located at the southern end of Ozz Road in the unincorporated community of Boulevard. The Phase I ESA conducted for the 138 kV transmission line included surrounding properties within a 2-mile radius. Since the 138 kV transmission line would end at the Boulevard Substation Rebuild site, the results of the Phase I ESA are also applicable to properties within a 2-mile radius of the rebuild site.

Schools

No schools are located within 0.25 mile of any ECO Substation Project components. The schools closest to project components are Clover Flat Elementary, located approximately 1.25 miles west of the Boulevard Substation site; and Jacumba Elementary, located approximately 0.9 mile south of milepost (MP) 4.0 and approximately 5,000 feet south of the proposed 138 kV transmission line right-of-way (ROW) near Jacumba. Project area schools are discussed in Section D.4, Land Use, and Section D.14, Public Services and Utilities.

Airports and Airstrips

Empire Ranch, a private nonregistered airstrip, is located approximately 300 feet west of the nearest 138 kV distribution replacement pole, WD-10, and approximately 400 feet west of a proposed fly yard located near MP 12. The County has no permit history for the airstrip, and

therefore, it is an illegal land use. In addition, the Jacumba Airport is located approximately 1 mile south of the proposed 138 kV transmission lie near MP 2.5. As discussed in Section D.9, Transportation and Traffic, components of the ECO Substation project would be located in the Jacumba Airport Influence Area (Review Area 2) and would be subject to review by the Airport Land Use Commission. Empire Ranch, Jacumba Airport, and the Jacumba Airport Land Use Commission are further discussed in Section D.9, Transportation and Traffic.

Emergency/Evacuation Plans

The County Multi-Jurisdictional Hazard Mitigation Plan is implemented by the County of San Diego Office of Emergency Services. The Multi-Jurisdictional Hazard Mitigation Plan is a countywide plan that identifies risks posed by natural and manmade disasters and discusses ways to minimize potential damage occurring as a result of these disasters. The comprehensive plan is intended to serve many purposes, including enhancing public understanding and awareness of potential hazardous situations, creating a decision tool for managing hazards, promoting compliance with state and federal program requirements, enhancing local policies for hazard mitigation capability, providing interjurisdictional coordination, and achieving regulatory compliance (County of San Diego 2004). The plan is currently being updated.

The Office of Emergency Services also implements the Operational Area Emergency Plan Evacuation Annex. The Operational Area Emergency Plan Evacuation Annex outlines strategies, procedures, recommendations, and organizational structures that can be used to implement a coordinated evacuation effort in the San Diego Operational Area. The Evacuation Annex also provides estimates regarding the number of individuals within each jurisdiction of the Operational Area that may potentially be impacted by specific hazards and would need to be evacuated, the number of residents that would require shelter and transportation assistance in the event of a hazard, and the estimated number of pets that may need to be accommodated in an evacuation effort (County of San Diego 2007). In addition, the Evacuation Annex also details specific transportation routes within the County.

D.10.1.3 Tule Wind Project

The proposed Tule Wind Project site is located in the eastern area of unincorporated San Diego County. Agricultural lands and recreational areas represent the primary land uses occurring in the project area. The project vicinity is largely vacant or developed with low-density residential homes and ranches, recreational and rural uses, with access roads running through and adjacent to the project site. Existing operational wind turbines are located south of the proposed Tule Wind Project site on the Campo Indian Reservation.

A governmental Environmental Data Resources (EDR) database records search was conducted for the project construction area. In addition, a hazardous materials records search was conducted with the County and the State of California Water Resources Control Board GeoTracker database within a 0.5-mile radius of the project boundary. The following sites were identified:

- Assessor Parcel Number (APN) 611-110-01-00, McCain Valley Adult Conservation Camp, located at 2550 McCain Valley Road, is identified as containing a LUST, with a potentially affected aquifer. The County DEH has confirmed the site contains a LUST. The site is currently in open status. Although the amount of dissolved methyl tertiary butyl ether (MTBE) detected in the groundwater has decreased, levels remain higher than the cleanup level established for this site; therefore, monitoring continues.
- A historical site identified as the U.S. Navy La Posta Test Facility was previously located on La Posta Road and identified as a small quantity generator for hazardous wastes. This site is currently occupied by the La Posta Tribe and is registered with the Integrated Compliance Information System, with no findings identified. No other sites were identified as hazardous within the project boundary.
- The Caltrans/Boulevard maintenance facility located at 40945 Old Highway 80 is identified with a LUST and is monitored semiannually for a potential affected aquifer. This site is located in the proposed ECO Substation 138 kV transmission line corridor adjacent to the ROW on Old Highway 80.
- The Mountain Top Market location had the potential for affected soil with a closed case status.
- Rough Acres Ranch is located north of Interstate 8 (I-8) adjacent to McCain Valley Road and near the entrance to the McCain Valley National Cooperative Land and Wildlife Management Area.
- The historical site of the Boulevard Transfer Station is located at 41097 Old Highway 80. This site was identified as a large and small hazardous waste generator. The facility is listed as a defunct site with a closed status as of September 1996.

Schools

No schools are located within 0.25 mile of the various Tule Wind Project components. The school closest to the project, Clover Flat Elementary School, is located approximately 1.25 miles west of the proposed Tule Wind 138 kV transmission line interconnect to the rebuilt Boulevard Substation. Project area schools are discussed in greater detail in Section D.4, Land Use, and Section D.14, Public Services and Utilities.

Airports and Airstrips

The proposed 138 kV transmission line connecting the Tule Wind Project collector substation with the rebuilt Boulevard Substation is located approximately 0.20 mile east of a private airstrip on Rough Acres Ranch, which is identified as the former San Diego Chargers training camp. Located north of I-8 and west of McCain Valley Road, the unregistered private airstrip features an approximately 3,200-foot-long gravel runway and an adjacent hangar and residence. The airstrip is currently nonoperational and is an illegal land use. Based on communications with the present owner of Rough Acres Ranch, Hamann Properties, an agreement was made with San Diego Gas & Electric (SDG&E) for the termination of fixed-wing air rights; therefore, the airstrip would remain nonoperational.

The nearest active airport is the County-operated Jacumba Airport, located south of Old Highway 80, approximately 6.5 miles southeast of the project area, and more than 8 miles southeast of the closest Tule Wind Project turbine. According to the Jacumba Airport Land Use Compatibility Plan, the Tule Wind Project is not located within the Jacumba Airport Influence Area for noise compatibility, safety, over flight, or airspace protection; therefore, the project would not be subject to review by the Airport Land Use Commission (San Diego Airport Land Use Commission 2006).

Aerial photographs show that two additional airstrips are located within 10 miles of the northernmost limits of the Tule Wind Project boundary: Rancho Vallecito Airstrip and Agua Caliente Airstrip. Project area airports and airstrips and associated hazards are discussed in greater detail in Section D.9, Transportation and Traffic.

D.10.1.4 ESJ Gen-Tie Project

The proposed ESJ Gen-Tie Project is located entirely within southeastern San Diego County, approximately 4 miles east of Jacumba, and immediately south of the proposed ECO Substation 500 kV and 230/138 kV yards. All project components would traverse or be located on undeveloped rural land. Several unnamed dirt roads would be crossed by the gen-tie route.

According to the Phase I ESA prepared for the project, the subject site and surrounding properties are not listed on any federal, state, or local regulatory agency database (AECOM 2009). Although the subject property and surrounding properties were not listed on any regulatory agency's database, site reconnaissance conducted by AECOM, Inc., uncovered spent shotgun shells and bullet casings that can pose a potential threat of contamination to the project site. As spent ammunition oxidizes, exposure to lead can occur during ground-disturbing activities such as grading. Inhalation of dust/soil particles may be a potential pathway of exposure during grading activities. However, according to the U.S. Environmental Protection

Agency (EPA), due to the small size of typical firing ranges, potential risks to human and ecological receptors are generally low (EPA 2003). Based on a site visit, review of government databases and historical records, and interviews with selected individuals, no recognized environmental conditions were identified on the ESJ Gen-Tie Project site or on surrounding properties (AECOM 2009).

Schools

No schools are located within 4 miles of the ESJ Gen-Tie Project site. The nearest school, Jacumba Elementary, is located approximately 4.5 miles west of where the proposed ESJ gen-tie interconnects to the proposed ECO Substation. Project area schools are discussed in detail in Section D.14, Public Services and Utilities.

Airports and Airstrips

The nearest airport, the Jacumba Airport, is located approximately 2.5 miles west of where the ESJ gen-tie interconnects to the proposed ECO Substation. Project area airports and airstrips are discussed in greater detail in Section D.9, Transportation and Traffic.

D.10.2 Applicable Regulations, Plans, and Standards

This section discusses federal, state, and regional environmental regulations, plans, and standards applicable to the Proposed PROJECT, as well as the Campo, Manzanita, and Jordan wind energy projects. In addition to the federal regulations identified, the Campo and Manzanita wind energy projects may be subject to the Bureau of Indian Affairs' (BIA's) policies and regulations and tribe-specific policies and plans.

Hazardous materials and wastes are identified and defined by federal and state regulations for the purpose of protecting public health and the environment. Hazardous materials have certain chemical, physical, or infectious properties that cause them to be considered hazardous. Hazardous wastes are defined in the Code of Federal Regulations (CFR) Title 40, Part 20, and in the California Code of Regulations (CCR), Title 22, Div. 4.5, Chapter 11, Article 1, Section 66261 (22 CCR 66261), which provides the following definition:

> A hazardous material is a substance or combination of substances which, because of its quantity, concentration, or physical, chemical or infectious characteristics, may either (1) cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or (2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported or disposed of or otherwise managed.

In the impact analysis of this EIR/EIS, soil that is excavated from a site containing hazardous materials is considered hazardous waste if it exceeds CCR Title 22 criteria, or on federal/BLM lands, if it exceeded criteria defined in the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) or other applicable federal regulations. Some common soil contaminants and their corresponding hazardous waste levels are listed as follows:

- Lead and lead compounds: soluble threshold limit concentration (STLC3) value = 5.0 milligram/liter (mg/l) and total threshold limit concentration (TTLC3) value = 1,000 milligrams/kilogram (mg/kg)
- Copper and copper compounds: STLC value = 25.0 mg/l and TTLC value = 2,500 mg/kg
- Dichlorodiphenyltrichloroethane (DDT), dichlorodiphenyldichloroethylene (DDE), and dichlorodiphenyldichloroethane (DDD): STLC value = 0.1 mg/l and TTLC value = 1.0 mg/kg
- Petroleum hydrocarbons, including gasoline, diesel, and motor oil – greater than 1,000 mg/kg
- Benzene, toluene, ethylbenzene, and xylene (BTEX) and MTBE: 10 mg/kg.

If excavated materials from a site are found to be hazardous, then remediation (cleanup and safe removal/disposal) is required. Even if soils or groundwater at a contaminated site do not have the characteristics required to be defined as hazardous wastes, remediation of the site may be required by regulatory agencies with jurisdictional authority. Cleanup requirements are determined on a case-by-case basis by the agency taking jurisdiction.

D.10.2.1 Federal Regulations

U.S. Environmental Protection Agency

The EPA defines hazardous waste as waste that is dangerous or potentially harmful to public health or the environment. Wastes that the EPA has determined to be hazardous are known as "listed wastes" and are organized into three categories: F-List (nonspecific source wastes from common manufacturing and industrial processes), K-List (source-specific waste from specific industries such as petroleum refining and pesticide manufacturing), and P-List and U-List (discarded commercial chemical products in an unused form) (EPA 2008). Wastes included on the F-List can be found in the regulations established in 40 CFR Part 261.31, K-List wastes are discussed in 40 CFR Part 261.32, and P- and U-List wastes are discussed in 40 CFR Part 261.33. An additional category of waste, characteristic wastes, includes wastes that exhibit ignitability, corrosivity, reactivity, or toxicity.

The Federal Toxic Substances Control Act (1976; 15 U.S.C. 2601–2671) and the Resource Conservation and Recovery Act of 1976 (RCRA, 42 U.S.C. 6901 et seq.) established a program administered by the EPA for the regulation of the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA was amended in 1984 by the Hazardous and Solid Waste Act, which affirmed and extended the "cradle to grave" system of regulating hazardous wastes.

CERCLA (42 U.S.C. 9601 et seq.), also commonly known as Superfund, was enacted by Congress on December 11, 1980. CERCLA authorized broad federal authority to respond directly to releases or threatened releases of hazardous substances that could endanger public health or the environment. CERCLA established requirements concerning closed and abandoned hazardous waste sites, provided for liability of persons responsible for the release of hazardous waste at these sites, and established a trust fund to provide for cleanup when no responsible party could be identified. The law authorizes two types of responses: short-term removals requiring prompt response and long-term remedial response actions that permanently and significantly reduce serious on-site dangers. CERCLA also enabled the revision of the National Contingency Plan (NCP) (42 U.S.C. 9605). The NCP provided guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, or contaminants. The NCP also established the National Priorities List, which is a list of contaminated sites warranting further investigation by the EPA. CERCLA was amended by the Superfund Amendments and Reauthorization Act (SARA) on October 17, 1986.

Under SARA Title III, a nationwide emergency planning and response program was established that imposed reporting requirements for businesses that store, handle, or produce significant quantities of hazardous or acutely toxic substances, as defined under federal laws. SARA Title III required each state to implement a comprehensive system to inform federal authorities, local agencies, and the public when a significant quantity of hazardous, acutely toxic substances are stored or handled at a facility. In addition, SARA provided new enforcement and settlement tools, increased the focus on human health problems posed by hazardous waste sites, and stressed the importance of permanent remedies and innovative treatment technologies in cleaning up hazardous waste sites.

Provisions within the Clean Water Act and the Clean Air Act address accidental releases of hazardous materials to surface waters and the atmosphere.

Clean Water Act

The EPA's Oil Pollution Prevention Rule was published under the authority of the Clean Water Act and is outlined in 40 CFR 112. Facilities subject to the rule must prepare and implement a plan to prevent any discharges of oil into or upon navigable waters of the United States or

adjoining shorelines. The plan is called a Spill Prevention Control and Countermeasures (SPCC) Plan and is generally intended to minimize the potential for spills into navigable waters of the U.S. as opposed to response and clean-up after a spill occurs.

All non-transportation related facilities that have an aggregate aboveground storage capacity greater than 1,320 gallons or a completely buried storage capacity greater than 42,000 gallons, and have a reasonable expectation of discharge into or upon navigable waters of the U.S., are required to prepare an SPCC Plan. SPCC plan requirements are discussed in 40 CFR 112, Oil Pollution Prevention. As part of the Clean Water Act, the EPA oversees and enforces the Oil Pollution Prevention regulations contained in 40 CFR 112.

Clean Air Act

Under the authority of Section 112(r) of the Clean Air Act, the Chemical Accident Prevention Provisions require facilities that produce, handle, process, distribute, or store more than a "threshold quantity" of any extremely hazardous toxic and flammable substance listed at 40 CFR Part 68.130 to develop and implement a Risk Management Program, prepare a risk management plan, and submit the risk management plan to EPA. Although a federal program, the Risk Management Program is intended to reduce hazards at the local level. The program is applicable to companies of all sizes that use certain flammable and toxic substances. The Risk Management Program is intended to help local fire, police, and emergency response personnel (first responders) in the event of an accidental spill or exposure event. The Risk Management Program is contained within the Clean Air Act (42 U.S.C. 7401 et seq.).

Executive Order 13045 – Protection of Children from Environmental Health and Safety Risks

Executive Order 13045 was issued by President William J. Clinton in 1997 and applies to rules under Executive Order 12866 concerning an environmental health or safety risk that the EPA has reason to believe may disproportionately affect children. Environmental health and safety risks to children refer to risks that are attributable to products or substances that a child is likely to come into contact with or ingest (i.e., air, food, water, soil, certain products). Under this order, the EPA must evaluate the effects of a planned regulation on children and why the regulation is preferable to other feasible alternatives.

Occupational Safety and Health Administration (OSHA)

OSHA's mission is to ensure the safety and health of America's workers by setting and enforcing standards; providing training, outreach, and education; establishing partnerships; and encouraging continual improvement in workplace safety and health. OSHA standards are listed in 29 CFR Part 1910.

The OHSA Process Safety Management of Highly Hazardous Chemicals (29 CFR Part 110.119) is intended to prevent or minimize the consequences of a catastrophic release of toxic, reactive, flammable, or explosive highly hazardous chemicals by regulating their use, storage, manufacturing, and handling. The standard intends to accomplish its goal by requiring a comprehensive management program integrating technologies, procedures, and management practices.

Bureau of Land Management Hazard Management and Resource Restoration Manual

The Hazard Management and Resources Restoration Manual establishes policy for BLM hazardous materials management and compliance with the applicable statutes and safety guidelines. The objectives of the BLM hazardous material management and resource restoration plan (BLM 2009) are as follows:

1. Protect public health and safety and environmental resources by minimizing environmental contamination and hazards on public land and BLM owned or operated facilities
2. Comply with federal and state hazardous materials management laws and regulations and laws and regulations dealing with other hazards
3. Maintain the health of ecosystems through assessment, cleanup, correction, and restoration of contaminated sites or other hazards
4. Manage hazards and hazardous materials related risks, costs, and liabilities
5. Integrate environmental protection and compliance with all environmental statutes into all BLM activities.

Bureau of Land Management Eastern San Diego County Resource Management Plan and Record of Decision, Public Health and Safety Section

The Eastern San Diego County Resource Management Plan and Record of Decision, Public Health and Safety Section, identifies goals, objectives, and management actions associated with abandoned mines, the following of which are applicable to the proposed Tule Wind Project (BLM 2008):

Abandoned Mines (ABM)

ABM-01: Reduce or eliminate the risk to members of the public associated with abandoned mines.

ABM-02: Implement fencing, gating, signage, and/or closure of abandoned mine openings.

ABM-03: Consider using abandoned mines for wildlife habitat.

ABM-04: Proposed activities (e.g., surface-disturbing activities) will not be approved, until compliance with Section 106 of the National Historic Preservation Act (NHPA) has been completed and documented, including where applicable, consultation with the State Historic Preservation Office (SHPO) and federally recognized tribes.

Uniform Building Code and Uniform Fire Code

The Uniform Building Code and Uniform Fire Code contain building standards and federal fire protection codes. The Uniform Building Code addresses proper building materials, spacing, and siting in order to minimize the potential for damage from fires. The Uniform Fire Code addresses applicable water pressure, fire hydrants, automatic fire sprinkler systems, fire alarm systems, explosion hazards, safety measures, and additional building-specific information.

Federal Aviation Regulation Part 77 – Objects Affecting Navigable Airspace

Federal Regulation 14 CFR 77 establishes standards and notification requirements for objects affecting navigable airspace and allows the Federal Aviation Administration (FAA) to identify potential aeronautical hazards in advance, thus preventing or minimizing the adverse impacts to the safe and efficient use of navigable airspace.

Under Federal Aviation Regulation Part 77 (14 CFR 77.23), a structure is an obstruction to air navigation if its height is more than:

- 500 feet above ground level at the site of the object, or
- 200 feet above ground level or above the established airport elevation, whichever is higher, within 3 nautical miles of the established reference point of any airport, excluding heliports, with its longest runway more than 3,200 feet in actual length. That height increases in proportion of 100 feet for each additional nautical mile from the airport reference point, up to a maximum of 500 feet.

Any entity proposing to construct an object that exceeds 200 feet in ground level and that might affect navigable airspace must notify the FAA. The FAA is required to consult with the military before it can issue a determination.

In addition, under Federal Aviation Regulation Part 77 (14 CFR 77.13), each person proposing any of the following kinds of construction or alteration must notify the FAA:

- Construction or alteration of more than 200 feet in height above the ground level at its site;
- Construction or alteration of greater height than an imaginary surface extending outward and upward at one of the following slopes:

- 100 to 1 for a horizontal distance of 20,000 feet from the nearest point of the nearest runway of any public or military airport with at least one runway more than 3,200 feet in length (excluding heliports).
- 50 to 1 for a horizontal distance of 10,000 feet from the nearest point of the nearest runway of any public or military airport with its longest runway no more than 3,200 feet in length (excluding heliports).
- 25 to 1 for a horizontal distance of 5,000 feet from the nearest point of the nearest landing and takeoff area of each public or military heliport.

The National Defense Authorization Act for Fiscal Year 2006

The National Defense Authorization Act 2006 (Public Law 1109-163) requires the Department of Defense (DOD) to study and report on the effects of wind projects on military readiness. Language within the act includes a discussion of the potential for windmill farms and their effect on military readiness including their potential for impacts to military radar installations within proximity to such installations.

D.10.2.2 State Laws and Regulations

California Environmental Protection Agency (Cal/EPA)

Created in 1981, the Cal/EPA effectively centralized California's environmental authority, consolidating under one agency the Air Resources Board, State Water Resources Control Board, Integrated Waste Management Board, DTSC, Office of Environmental Health Hazard Assessment, and Department of Pesticide Regulation. In order to create a cabinet-level advocate for the protection of human health and the environment and to ensure the coordinated deployment of state resources, the previously listed agencies were placed within the Cal/EPA "umbrella." The mission of Cal/EPA is to restore, protect, and enhance the environment, to ensure public health, environmental quality, and economic vitality. The Department of Pesticide Regulation, DTSC, Integrated Waste Management Board (now the Department of Resources Recycling and Recovery), and State Water Resources Quality Control Board regulate hazardous materials and hazardous waste that have the potential to cause soil, water, and groundwater contamination. The missions of the previously listed state agencies are provided as follows:

- **Department of Pesticide Regulation.** The Department of Pesticide Regulation is tasked with regulating all aspects of pesticide sales and use to protect the public health and the environment. The department's mission is to evaluate and mitigate impacts of pesticide use, maintain the safety of the pesticide workplace, ensure product effectiveness, and encourage the development and use of reduced risk pest control practices while recognizing the need for pest management in a healthy economy.

- **Department of Toxic Substances Control.** The mission of the DTSC is to restore, protect, and enhance the environment and to ensure public health, environmental quality, and economic vitality by regulating hazardous waste, conducting and overseeing cleanups, and developing and promoting pollution prevention.
- **Department of Resources Recycling and Recovery.** The Department of Resources Recycling and Recovery consists of two program divisions: Waste Management and Recycling. The mission of the Waste Management and Recycling program divisions is to protect the public health and safety of the environment through waste prevention, waste diversion, and safe waste processing and disposal.
- **State Water Resources Quality Control Board**. The mission of the State Water Resources Quality Control Board is to preserve and enhance the quality of California's water resources and to ensure the proper allocation and efficient use of the state's water resources for the benefit of present and future generations.

Department of Toxic Substance Control

Under the authority of the federal RCRA and the California Health and Safety Code, the DTSC is the primary agency responsible for regulating hazardous waste in the State of California. In addition, DTSC is also tasked with contamination cleanups at existing sites.

Hazardous Waste Control Law

Cal/EPA administers the California Hazardous Waste Control Law (HWCL) to regulate hazardous wastes. While the HWCL is generally more stringent than RCRA, until the EPA approves the California hazardous waste control program (which is charged with regulating the generation, treatment, storage and disposal of hazardous waste), both the state and federal laws apply in California. The HWCL lists 791 chemicals and approximately 300 common materials that may be hazardous; establishes criteria for identifying, packaging, and labeling hazardous wastes; prescribes management controls; establishes permit requirements for treatment, storage, disposal, and transportation; and identifies some wastes that cannot be disposed of in landfills.

According to CCR Title 22, substances having a characteristic of toxicity, ignitability, corrosivity, or reactivity are considered hazardous waste. Hazardous wastes are hazardous substances that no longer have a practical use, such as material that has been abandoned, discarded, spilled, or contaminated or is being stored prior to proper disposal.

Toxic substances may cause short-term or long-lasting health effects, ranging from temporary effects to permanent disability, or death. For example, toxic substances can cause eye or skin irritation, disorientation, headache, nausea, allergic reactions, acute poisoning, chronic illness, or other adverse health effects if human exposure exceeds certain levels (the level depends on the

substance involved). Carcinogens (substances known to cause cancer) are a special class of toxic substances. Examples of toxic substances include most heavy metals, pesticides, and benzene (a carcinogenic component of gasoline). Ignitable substances (e.g., gasoline, hexane, and natural gas) are hazardous because of their flammable properties. Corrosive substances (e.g., strong acids and bases such as sulfuric (battery) acid or lye) are chemically active and can damage other materials or cause severe burns upon contact. Reactive substances (e.g., explosives, pressurized canisters, and pure sodium metal, which react violently with water) may cause explosions or generate gases or fumes.

Other types of hazardous materials include radioactive and biohazard materials. Radioactive materials and wastes contain radioisotopes, which are atoms with unstable nuclei that emit ionizing radiation to increase their stability. Radioactive waste mixed with chemical hazardous waste is referred to as "mixed wastes." Biohazard materials and wastes include anything derived from living organisms. They may be contaminated with disease-causing agents, such as bacteria or viruses.

California Office of Emergency Services

The Office of Emergency Services establishes requirements for hazardous materials business and area plans required for facilities that use, handle, or store hazardous materials. The intent of the business and areas plans is to make information (including type and quantity of materials used, handled, or stored on site) available to first responders in the event of an accidental release of hazardous materials so that impacts to the health and safety of the public and the environment can be avoided or mitigated. Business and area plan regulations are covered in California Health and Safety Code, Chapter 6.95, Article 1 (Sections 25500–25520) and Article 2 (Sections 25531–25543.3).

CCR Title 19, Division 2, Chapter 4, Hazardous Material Release Reporting, Inventory and Response Programs, establishes minimum standards for area plans (Article 3) and business plans (Article 4). It should be noted that area plans are intended to be used by local jurisdictions while business plans are specific to individual facilities. Facilities are required to prepare a Hazardous Materials Business Plan (HMBP) if the facility uses, handles, or stores hazardous materials in quantities equal to or greater than 500 pounds of a solid substance, 55 gallons of a liquid substance, 200 cubic feet of gas, a hazardous compressed gas in any amount, or an extremely hazardous substance in threshold planning quantities (19 CCR 2729.1, Business Plan General Requirements).

California Occupational Safety and Health Administration

The California Occupational Safety and Health Administration (Cal/OSHA) is responsible for worker safety in the handling and use of chemicals in the work place. Cal/OSHA standards are

generally more stringent than federal regulations. Cal/OSHA requirements require employers to monitor worker exposure to listed hazardous substances and notify workers of exposure (8 CCR 337–340). The regulations specify requirements for employee training, availability of safety equipment, accident prevention programs, and hazardous substance exposure warnings.

California Human Health Screening Levels

The California Human Health Screening Levels (CHHSLs) are concentrations of 54 hazardous chemicals in soil or soil gas that Cal/EPA considers to be below thresholds of concern for risks to human health. Developed by the Office of Environmental Health Hazard Assessment on behalf of Cal/EPA, CHHSLs were first established in the Office of Environmental Health Hazard Assessment's report entitled "Human-Exposure-Based Screening Numbers Developed to Aid Estimation of Cleanup Costs for Contaminated Soil." The thresholds of concern used to develop the CHHSLs are an excess lifetime cancer risk of one-in-a-million (10^{-6}) and a hazard quotient of 1.0 for non-cancer health effects (Cal/EPA 2005). Information, including standard exposure assumptions and chemical toxicity values published by the EPA and Cal/EPA, was used to develop CHHSLs (Cal/EPA 2005).

California Health and Safety Code

In California, the handling and storage of hazardous materials is regulated by Chapter 6.95 of the California Health and Safety Code. Under Sections 25500–25520, Hazardous Materials Release Response and Inventory Program, facilities handling hazardous materials are required to prepare an HMBP. The business plan provides information to local emergency response agencies regarding the types and quantities of hazardous materials stored at a facility, and the plan provides detailed emergency planning and response procedures in the event of a hazardous materials release. In addition, business plans are required to provide information regarding training of appropriate employees and incident critique and follow-up. Pursuant to Chapter 6.95, Sections 25531–25543.3, of the California Health and Safety Code, facilities that store quantities of specific acutely hazardous materials above the thresholds set forth by California code are also required to prepare a risk management plan and California accidental release plan. The risk management plan and accidental release plan provide information about the potential impact zone of a worst-case release and require plans and programs designed to minimize the probability of a release and mitigate potential impacts.

Chapter 6.97 of the California Health and Safety Code establishes the requirements for USTs and discusses corrective actions, cleanup funds, liability, and the actions of UST responsible parties.

California Accidental Release Prevention Program

Similar to the federal Risk Management Program, the California Accidental Release Prevention Program includes additional state requirements as well as an additional list of regulated substances and thresholds. The regulations of the program are contained in 19 CCR, Chapter 4. The intent of California Accidental Release Prevention Program is to provide first responders with basic information necessary to prevent or mitigate damage to public health, safety, and the environment from the release or threatened release of hazardous materials.

D.10.2.3 Regional Policies, Plans, and Regulations

County of San Diego Hazardous Materials Management Division

The County DEH Hazardous Materials Management Division (HMMD) is responsible for regulating HMBPs and chemical inventory, hazardous waste permitting, USTs, and risk management plans. As stated previously, HMBPs contain basic information regarding the location, type, quantity, and health risks of hazardous materials stored, used, or disposed of in the state, and Chapter 6.95 of the Health and Safety Code establishes minimum statewide standards for HMBPs. These standards were previously discussed within the applicable state policies, plans, and regulations subsection.

The goal of HMMD is to protect human health and the environment by ensuring that hazardous materials, hazardous waste, medical waste, and USTs are properly managed. To accomplish this goal, the HMMD has several programs working with the regulated community and the public, which include the California Accidental Release Prevention Program, the Hazardous Incident Response Team, the Hazardous Materials Duty Desk, the Pollution Prevention Specialist, and the Underground Storage Tank Group.

County of San Diego Solid Waste Local Enforcement Agency

The County of San Diego Solid Waste Local Enforcement Agency is responsible for the proper operation and closure of solid waste facilities and disposal sites in the County. The agency is also responsible for the following actions:

- Providing solid waste inspection and permitting services to the individual jurisdictions within the County
- Conducting enforcement, inspection, and permitting for solid waste facilities, disposal, operations, and disposal sites
- Maintaining agency certification in good standing with the California Department of Resources, Recycling, and Recovery (formerly California Integrated Waste Management Board).

County of San Diego Site Assessment and Mitigation Program

The intent of the County's Site Assessment and Mitigation Program is to ensure the protection of public health, water resources, and the environment from contaminants by overseeing site assessments and cleanups conducted in accordance with the California Health and Safety Code and the California Code of Regulations. The County has prepared a Site Assessment and Mitigation Program manual that contains guidelines intended to assist those who work in the environmental and remediation fields. Section 2 of the Site Assessment and Mitigation Program manual discusses the County's Underground Storage Tank Program. According to the manual, permits are required for the installation, repair, and/or closure of all USTs, and the HMMD performs annual inspections of all regulated USTs (County of San Diego 2009). The County Code of Regulations (Title 6, Division 8, Chapter 10) gives the DEH the authority to inspect all regulated USTs in the County. Section 7 of the manual discusses the remedial phase of the environmental investigation and explores several options for mitigation.

County of San Diego General Plan – Safety Element

The County of San Diego General Plan Safety Element contains goals and policies with the intent to introduce safety considerations into the planning process in order to reduce the risk of injury, loss of life, and property damage due to hazards (County of San Diego 2008). The safety hazards presented in the Safety Element are related to fire, geology, and crime, and the primary focus of the policies established in the element is prevention.

County of San Diego General Plan – Public Facilities Element

According to the Public Facilities Element of the existing General Plan, hazardous materials incidents comprise a very small percentage of emergency responses occurring throughout the County. However, response to these incidents is initiated by highly trained personnel with specialized equipment, which together comprises the Hazardous Materials Incident Response Team. The Hazardous Materials Incident Response Team is a joint powers agreement between the County and all of the cities in the region and, in addition to emergency response the program, offers emergency training courses to interested fire agencies in the region (County of San Diego 2005).

County of San Diego Draft General Plan Update – Safety Element

The following goals and policies of the San Diego County Draft General Plan Update, Safety Element (County of San Diego 2010a), are associated with public health and safety and are applicable to the Proposed PROJECT:

- **Goal S-1: Public Safety.** Enhanced public safety and the protection of public and private property.

- **Policy S-3.5: Access Roads.** Require development to provide additional access roads when necessary to provide for safe access of emergency equipment and civilian evacuation concurrently.
- **Goal S-11: Controlled Hazardous Material Exposure.** Limited human and environmental exposure to hazardous materials that pose a threat to human lives or environmental resources.
- **Policy S-11.1: Land Use Location.** Require that land uses involving the storage, transfer, or processing of hazardous materials be located and designed to minimize risk and comply with all applicable hazardous materials regulations.
- **Policy S-11.2: Industrial Use Restrictions.** Restrict industrial uses that store, process, or transport significant amounts of hazardous material to areas designated as High Impact Industrial.
- **Policy S-11.3: Hazards-Sensitive Uses.** Require that land uses using hazardous materials be located and designed to ensure sensitive uses, such as schools, hospitals, day care centers, and residential neighborhoods, are protected. Similarly, avoid locating sensitive uses near established hazardous materials users or High Impact Industrial areas where incompatibilities would result.
- **Policy S-11.4: Contaminated Lands.** Require areas of known or suspected contamination to be assessed prior to reuse. The reuse shall be in a manner that is compatible with the nature of the contamination and subsequent remediation efforts.
- **Policy S-11.5: Development Adjacent to Agricultural Operations.** Require development adjacent to existing agricultural operations in Semi-Rural and Rural Lands to adequately buffer agricultural areas and ensure compliance with relevant safety codes where pesticides or other hazardous materials are used.
- **Policy S-15.3: Hazardous Obstructions within Airport Approach and Departure.** Restrict development of potentially hazardous obstructions or other hazards to flight located within airport approach and departure areas or known flight patterns and discourage uses that may impact airport operations or do not meet federal or state aviation standards.

Draft Boulevard Subregional Planning Area Community Plan

The potential hazards associated with industrial-scale wind energy turbines are discussed at length in the Draft Boulevard Subregional Planning Area Community Plan. The plan states that wind energy turbines "may cause many impacts that are of concern to the residents of Boulevard, including: incompatible bulk and scale; impairment of view sheds and deterioration of aesthetic resources; unreasonable threats to the health and safety of wildlife; and insufficient setbacks from public roadways, utility lines, guy wires, and adjacent properties" (County of San

Diego 2010b). Goals and policies related to wind turbine developments are contained within the Land Use Element of the Community Plan and are therefore included in Section D.4, Land Use, of this EIR/EIS.

Zoning Ordinance

The County has established minimum required setbacks, restriction of public access via fencing, and noise and height limits for large wind turbine systems. The applicable regulations of the Zoning Ordinance are discussed in Section D.4, Land Use.

D.10.3 Environmental Effects

D.10.3.1 Definition and Use of CEQA Significance Criteria/Indicators under NEPA

The significance of hazardous materials and public health/safety impacts depends on whether the project would increase the likelihood of human exposure to contaminants, hazardous materials, or hazardous waste. The environmental impact involving hazardous waste would be in the potential mobilization of contaminants through excavation and handling of contaminated soil, resulting in exposure of workers and the general public. Contamination can either exist at the project site prior to construction or be the result of releases associated with construction activities. In addition, hazardous materials present at the project site may increase the potential risk for exposure to toxic substances and hazardous waste.

Toxic substances have the potential to cause short- and long-term health effects, including eye or skin irritation, disorientation, headache, nausea, allergic reactions, acute poisoning, chronic illness, or other adverse health effects, if human exposure exceeds certain levels. Carcinogens are a special class of toxic substances known to cause cancer and include most heavy metals, pesticides, and benzene (a carcinogenic component of gasoline). Ignitable substances, such as gasoline, hexane, and natural gas are considered hazardous because they are flammable. Corrosive substances, including strong acids and bases such as sulfuric acid (battery) or lye, can damage other materials or cause severe burns upon contact. Reactive substances (e.g., explosives, pressurized canisters, pure sodium metal) may result in explosions or the release of gases or fumes.

Excavated soils would be classified as a hazardous waste if they exceed certain CCR Title 22 criteria. Contaminated soil exceeding regulatory limits for construction backfill would require on-site treatment or transport to an appropriate off-site processing or disposal facility capable of and permitted to handle the waste. Contaminated soil removed from the construction area must be transported according to applicable state and federal laws and regulations and be replaced by imported soil approved for backfill. Similar issues and measures apply to contaminated groundwater. Remediation of hazardous wastes found at a site is required if excavation of these

materials is performed. Even if soil or groundwater at a contaminated site does not qualify as hazardous waste, remediation of the site may be required by appropriate regulatory agencies.

Many of the sites listed in EDR database searches for the Proposed PROJECT components are not hazardous materials release sites, but rather facilities identified for use, storage, or disposal of hazardous materials. In determining whether a hazardous or contaminated site would have the potential to impact the project, listed sites were reviewed based on distance from the project, type of site, and regulatory status of the site. Distance from the project and physical barriers, such as roads and other facilities, limit the potential for surface migration of contaminants from the source; therefore, active hazardous waste sites greater than 0.25 mile from the project components would have no potential to cause contamination along the proposed transmission line corridor. Contaminated sites listed as remediated and/or "case closed" by the appropriate regulatory agency were determined to have no potential environmental contamination within the project area. Likewise, sites that use, store, or dispose of hazardous materials but that have no known spill history would have little to no potential for environmental contamination affecting the project.

Based on California Environmental Quality Act (CEQA) Guidelines (14 CCR 15000 et seq.), Appendix G, the following significance criteria relate to the Proposed PROJECT's potential to increase the risk of human exposure to contaminants, hazardous materials, and dangerous conditions created as a result of the project. Related impacts may be considered significant if project construction, operation, or decommissioning (in the case of the Tule Wind Project) would:

- Result in soil contamination, including flammable or toxic gases, at levels exceeding federal, state, or local hazardous waste limits, including those established by the Code of Federal Regulations (40 CFR Part 261) and the California Code of Regulations (22 CCR 66261.21, 66261.22, 66261.23, 66261.24).
- Mobilize contaminants currently in the soil, which would result in exposure of humans and other sensitive receptors, such as plants and wildlife, to contaminant levels that could result in short-term and/or long-term health effects.
- Result in the presence of contaminated soils or groundwater within the project area, thereby exposing workers and/or the public to contaminated or hazardous materials during transmission line construction activities, at levels exceeding those permitted by Cal/OSHA (8 CCR, Chapter 4, Subchapter 7, Group 14 and 15, and Group 16, Articles 107, 109, and 110) and by OSHA (29 CFR Part 1910).
- Be located on or within 0.25 mile of a site identified in one of the regulatory databases compiled pursuant to Government Code Section 65962.519 or otherwise known to have been the subject of a release of hazardous substances.

- Propose a significant linear excavation within 1,000 feet of an open, abandoned, or closed landfill.
- Be located on or within 1,000 feet of a formerly used defense site, where it has been determined that it is probable that munitions or other hazards are located on site that could represent a significant hazard during construction activities.

Additionally, due to the height of proposed wind turbine towers, an impact would be considered significant if project construction or operation of the Tule Wind Project would:

- Create any undue risks due to the breaking of a rotor blade, also called "blade throw"
- Create any undue risks due to the potential collapse of a wind turbine.

These two significance criteria will only be used in the analysis of the Tule Wind Project.

A significant impact may also result from increased hazards related to airports and fire protection. Potential impacts related to airport hazards are discussed in Section D.9, Transportation and Traffic, and potential impacts related to wildland fire risks and fire protection are provided in Section D.15, Fuels and Fire Management.

Potential hazards unique to transmission lines, substations, and wind projects that are not addressed in Appendix G of the CEQA Guidelines include aviation safety interference, electromagnetic interference (EMI), exposure to EMFs, natural weather occurrences, and intentional acts of destruction. Potential impacts related to EMFs are discussed in Section D.10.8. Other potential field-related public concerns, including aviation safety interference and EMI (e.g., impacts to radar, radio, television, electrical equipment, and cardiac pacemakers), weather occurrences and natural disasters (e.g., wind, lightning), and intentional acts of destruction are discussed in Section D.10.9.

The National Environmental Policy Act (NEPA) provides no specific thresholds of significance for the assessment of project impacts on public health and safety, and hence significance conclusions for individual impacts are not required for compliance with NEPA.

D.10.3.2 Applicant Proposed Measures

ECO Substation Project

SDG&E has proposed APMs ECO-HAZ-1 through ECO-HAZ-4 to reduce impacts related to hazardous materials and public health/safety (see Section B.3.4, ECO Substation Project Applicant Proposed Measures, of this EIR/EIS).

Tule Wind Project

Pacific Wind Development has proposed APMs TULE-HAZ-1 through TULE-HAZ-3, and TULE-PHS-1 through TULE-PHS-8 to reduce impacts related to hazardous materials and public health/safety (see Section B.4.4, Tule Wind Project Applicant Proposed Measures, of this EIR/EIS).

ESJ Gen-Tie Project

Energia Sierra Juarez U.S. Transmission, LLC, has proposed APMs ESJ-HAZ-1 and ESJ-HAZ-2 to reduce impacts related to hazards and hazardous materials and public health/safety (see Section B.5.4, ESJ Gen-Tie Project Applicant Proposed Measures, of this EIR/EIS).

Campo, Manzanita, and Jordan Wind Energy Projects

At the time this EIR/EIS was prepared, the project proponents for these three wind energy projects have not developed project-specific APMs.

D.10.3.3 Direct and Indirect Effects

Table D.10-1 lists the impacts and classifications of the impacts under CEQA identified for the Proposed PROJECT. Cumulative effects are analyzed in Section F of this EIR/EIS.

Table D.10-1
Hazardous Materials and Public Health and Safety Impacts

Impact No.	Description	Classification
ECO Substation – Hazardous Materials/Public Health and Safety Impacts		
ECO-HAZ-1	Impacts to soil or groundwater could result from an accidental spill or release of hazardous materials due to improper handling or storage of hazardous materials during construction activities.	Class II
ECO-HAZ-2	Residual pesticides and/or herbicides could be encountered during grading or excavation.	Class II
ECO-HAZ-3	Previously unknown soil and/or groundwater contamination could be encountered during grading or excavation.	Class II
ECO-HAZ-4	Potential safety hazards could adversely affect construction workers or the general public accessing the project site during construction, operation, or decommissioning.	Class II
ECO-HAZ-5	Impacts to soil or groundwater could result from an accidental spill or release of hazardous materials during operations and maintenance.	Class II
ECO-HAZ-6	Herbicides used for vegetation control around towers and other project facilities could result in adverse health effects to the public or maintenance workers.	Class III
Tule Wind – Hazardous Materials/Public Health and Safety Impacts		
Tule-HAZ-1	Impacts to soil or groundwater could result from an accidental spill or release of hazardous materials due to improper handling or storage of hazardous materials during construction activities.	Class II

Table D.10-1 (Continued)

Impact No.	Description	Classification
Tule-HAZ-2	Residual pesticides and/or herbicides could be encountered during grading or excavation.	Class II
Tule-HAZ-3	Previously unknown soil and/or groundwater contamination could be encountered during grading or excavation.	Class II
Tule-HAZ-4	Potential safety hazards could adversely affect construction workers or the general public accessing the project site during construction, operation, or decommissioning.	Class II
Tule-HAZ-5	Impacts to soil or groundwater could result from an accidental spill or release of hazardous materials during operations and maintenance.	Class II
Tule-HAZ-6	Herbicides used for vegetation control around towers and other project facilities could result in adverse health effects to the public or maintenance workers.	Class III
Tule-HAZ-7	Undue risks could result due to the breaking of a rotor blade, also called "blade throw."	Class II
Tule-HAZ-8	Undue risks could result due to the potential collapse of a wind turbine.	Class III
ESJ Gen-Tie – Hazardous Materials/Public Health and Safety Impacts		
ESJ-HAZ-1	Impacts to soil or groundwater could result from an accidental spill or release of hazardous materials due to improper handling or storage of hazardous materials during construction activities.	Class II
ESJ-HAZ-2	Residual pesticides and/or herbicides could be encountered during grading or excavation.	Class III
ESJ-HAZ-3	Previously unknown soil and/or groundwater contamination could be encountered during grading or excavation.	Class II
ESJ-HAZ-4	Potential safety hazards could adversely affect construction workers or the general public accessing the project site during construction, operation, or decommissioning.	Class II
ESJ-HAZ-5	Impacts to soil or groundwater could result from an accidental spill or release of hazardous materials during operations and maintenance.	Class II
ESJ-HAZ-6	Herbicides used for vegetation control around towers and other project facilities could result in adverse health effects to the public or maintenance workers.	Class III
Proposed PROJECT (COMBINED – including Campo, Manzanita, and Jordan Wind Energy))		
HAZ-1	Impacts to soil or groundwater could result from an accidental spill or release of hazardous materials due to improper handling or storage of hazardous materials during construction activities.	Class II
HAZ-2	Residual pesticides and/or herbicides could be encountered during grading or excavation.	Class II
HAZ-3	Previously unknown soil and/or groundwater contamination could be encountered during grading or excavation.	Class II
HAZ-4	Potential safety hazards could adversely affect construction workers or the general public accessing the project site during construction, operation, or decommissioning.	Class II
HAZ-5	Impacts to soil or groundwater could result from an accidental spill or release of hazardous materials during operations and maintenance.	Class II
HAZ-6	Herbicides used for vegetation control around towers and other project facilities could result in adverse health effects to the public or maintenance workers.	Class III
HAZ-7	Undue risks could result due to the breaking of a rotor blade, also called "blade throw."	Class II
HAZ-8	Undue risks could result due to the potential collapse of a wind turbine.	Class III

Environmental Impacts/Environmental Effects

Direct and Indirect *(Note: cumulative effects are addressed in Section F of this EIR/EIS)*

Impact HAZ-1: Impacts to soil or groundwater could result from an accidental spill or release of hazardous materials due to improper handling or storage of hazardous materials during construction activities.

ECO Substation Project

Construction activities on the project site would involve the use and storage of commonly used hazardous materials such as gasoline, diesel fuel, lubricating oil, grease, solvents, and other vehicle and equipment maintenance fluids. These materials would be used and stored in designated construction staging areas within the project site boundaries. A list of these and additional hazardous materials typically utilized during transmission line construction and reasonably anticipated for construction of the project is presented in Table D.10-2, Hazardous Materials Typically Used for Construction.

Table D.10-2
Hazardous Materials Typically Used for Construction

ABC fire extinguisher	Ammonium hydroxide
Air tool oil	Battery acid (in vehicles and in the meter house of the substations)
Automatic transmission fluid	Insect killer
Bottled oxygen	Puncture seal tire inflator
Canned spray paint	Chain lubricant (contains methylene chloride)
Diesel de-icer	Connector grease (penotox)
Diesel fuel	Diesel fuel additive
Eye glass cleaner (contains methylene chloride)	Contact cleaner 2000
Gasoline	Gasoline treatment
Hot stick cleaner (cloth treated with polydimethysiloxane)	Lubricating grease
Hydraulic fluid	Starter fluid
Insulating oil (inhibited non-PCB)	Methyl alcohol
Mastic coating	Paint thinner
Propane	WD-40
Safety fuses	ZIP (1,1,1-trichloroethane)
Sulfur hexafluoride (within the circuit breakers in the substations)	Brake fluid
Two-cycle oil (contains distillates and hydro-treated heavy paraffinic)	Acetylene gas
Wasp and hornet spray (1,1,1-trichloroethene)	Antifreeze (ethylene glycol)
ZEP (safety solvent)	Motor oils

Source: SDG&E 2009, Chapter 4, Section 4.7.3.

The materials described previously would be transported and handled in accordance with all federal, state, and local laws regulating the management and use of hazardous materials. Consequently, the materials alone, and use of these materials for their intended purpose, would not pose a significant risk to the public or environment. However, accidental spills or unauthorized releases of hazardous materials during construction could potentially result in soil contamination, which would be a significant impact. Potential impacts from the use of hazardous materials are generally associated with spills or other unauthorized releases during ground clearing and access road construction; steel pole erection, including foundation excavation and construction; and conductor pulling, splicing, and tensioning for the installation of the 138 kV transmission line, as well as the construction of the ECO Substation and rebuild of the Boulevard Substation. Other potential impacts involving the use of hazardous materials during construction are associated with temporary storage sites, transportation of materials to the project site, refueling and servicing of equipment/vehicles, and hazardous materials contained in solid and industrial wastes that may pose a risk to human health and the environment.

To minimize/eliminate fuel spillage, construction vehicles would be adequately maintained and equipped. Equipment maintenance work, including refueling, would occur off site or within the designated construction staging area as described in Section B, Project Description, of this EIR/EIS. Potentially hazardous construction waste, including trash, litter, garbage, other solid wastes, petroleum products, and other potentially hazardous materials, would be removed to a hazardous waste facility that is permitted to treat, store, or dispose of such materials. The project would develop and implement a Hazardous Materials Management Plan (Mitigation Measure HAZ-1a) to address storage, use, transport, and disposal of each hazardous material anticipated for use on the project site. The plan would identify where hazardous materials and waste would be stored on site, how spill prevention measures would be implemented, where spill kits would be located, the appropriate spill response action for each material or waste, and procedures for notifying the appropriate authorities.

APM ECO-HAZ-1, which provides for personnel training regarding laws and regulations related to hazardous materials, has been superseded and clarified by Mitigation Measures HAZ-1a and HAZ-1b and would further reduce the likelihood of improper handling or storage of hazardous materials. A waste management plan (Mitigation Measure HAZ-1c) would be implemented in order to determine waste procedures, waste storage locations, waste-specific management and disposal requirements, inspection procedures, and waste minimization procedures applicable to the project.

The Boulevard Substation Rebuild would include demolition of the existing Boulevard Substation and removal of eight buildings (an existing residence, one garage, one barn, and five outbuildings). Hazardous substances, such as gasoline and oil associated with the existing

Boulevard Substation and lead-based paint or asbestos associated with the other buildings, may exist; therefore, hazardous substances may be encountered during demolition and construction of the substation, which may expose project personnel to potential health hazards. This would be a significant impact. Prior to demolition, soil, conduit, equipment, and structures currently located at the existing and proposed Boulevard Substation site would be tested for environmental hazards, including oil, lead-based paint, and asbestos (Mitigation Measure HAZ-1d). All identified hazardous materials would be abated prior to or during the demolition process. In addition, APM ECO-HAZ-2 (Phase II ESA for existing Boulevard Substation parcel after demolition) would be implemented to determine if there is any surface or subsurface contamination at the existing Boulevard Substation site and to minimize the risk of construction workers or members of the public coming in contact with existing hazardous substances. If required by the Phase II investigation, remediation would occur in accordance with all applicable federal, state, and local regulations.

Demolition activities for the Boulevard Substation would include disconnecting and removing all substation equipment including transformers, breakers, regulators, disconnect switches, fuses, the station light and power transformer, control cabinets, and the DC cabinet. All of the on-site structural steel, including the 69 kV and 12 kV switch racks, equipment support structures, and substation fences and gates removed during demolition activities, would be recycled (all dismantled equipment would be tested in accordance with federal, state, and local standards to determine the appropriate recycle, reuse, or disposal alternatives). Once all aboveground structures have been removed, demolition and removal of all below-grade facilities (foundation pads, piers, and direct-buried control cable) would begin. Oil drained from on-site equipment would be processed in accordance with SDG&E standard procedures. During the Boulevard Substation dismantling process, APM ECO-HAZ-3 (Testing of existing equipment at Boulevard Substation) would be implemented to determine appropriate recycle, reuse, or disposal alternatives.

The project would incorporate the project design features previously described and implement a Hazardous Materials Management Plan (HMMP) (Mitigation Measure HAZ-1a), a Health and Safety Program (Mitigation Measure HAZ-1b), and a Waste Management Plan (Mitigation Measure HAZ-1c) that would reduce the likelihood of improper handling, storage, or release of hazardous substances and mitigate potential hazards to the public or the environment resulting from foreseeable upset or accidental conditions related to hazardous materials. In addition, Mitigation Measure HAZ-1d and APMs ECO-HAZ-2 and ECO-HAZ-3 related to demolition of the existing Boulevard Substation and surrounding buildings would mitigate potential health hazards and prevent project personnel from encountering hazardous substances during demolition and construction activities. Identified impacts would be adverse; therefore, mitigation

has been provided that would mitigate this impact. Under CEQA, impacts would be significant but can be mitigated to a level that is considered less than significant (Class II).

MM HAZ-1a: Hazardous Materials Management Plan. Prior to approval of final construction plans, the applicant or applicant's contractors shall prepare an HMMP for the construction phase of the project, which shall be reviewed and approved by the appropriate agency, and shall include the following components:

- The plan shall identify all hazardous materials that will be present on any portion of the construction site, including, but not limited to, fuels, solvents, and petroleum products. The plan shall address storage, use, transport, and disposal of each hazardous material anticipated to be used at the site. The plan shall establish inspection procedures, storage requirements, storage quantity limits, inventory control, nonhazardous product substitutes, and disposition of excess materials.
- The plan shall identify secondary containment and spill prevention countermeasures, as well as a contingency plan to identify potential spill hazards, how to prevent their occurrence, and responses for different quantities of spills that may occur. Secondary containment and countermeasures shall be in place throughout construction so that if any leaks or spills occur, responses will be made immediately.
- The plan shall identify materials (and their locations) that will be on site and readily accessible to clean up small spills (i.e., spill kit, absorbent pads, and shovels). Such emergency spill supplies and equipment shall be clearly marked and located adjacent to all areas of work and in construction staging areas. The plan shall identify the spill-response materials that must be maintained in vehicles and substation sites during construction and procedures for notification to the appropriate authorities.
- The plan shall identify adequate safety and fire suppression devices for construction-related activities involving toxic, flammable, or explosive materials (including refueling construction vehicles and equipment). Such devices shall be readily accessible on the project site, as specified by the County's Fire Department and per the Uniform Building Code and Uniform Fire Code. The plan shall be included as part of all contractor specifications and final construction plans to the satisfaction of the appropriate agency. The plan shall also identify requirements for

notices to federal and local emergency response authorities and shall include emergency response plans.

Prior to construction, all contractor and subcontractor personnel shall receive training regarding the components of the HMMP, as well as applicable environmental laws and regulations related to hazardous materials handling, storage, and spill prevention and response measures.

The applicant or applicant's contractor shall designate an environmental field representative who shall be on site to observe, enforce, and document adherence to the plan for all construction activities. The plan shall be submitted to the appropriate agency at least 30 days prior to construction.

MM HAZ-1b: Health and Safety Program. Prior to approval of final construction plans, the applicant or applicant's contractors shall prepare a Health and Safety Program for each applicable phase of the project (i.e., construction, operation, and decommissioning). The program shall be developed to protect both workers and the general public during all phases of the project. The program shall be implemented to educate construction workers about the hazards associated with the particular project site and the safety measures that must be taken to prevent injury. The program shall include standards regarding occupational safety, safe work practices for each task, hazard training requirements for workers, and mechanisms for documentation and reporting.

Regarding occupational health and safety, the program shall identify all applicable federal and state occupational safety standards; establish safe work practices for each task (e.g., requirements for personal protective equipment and safety harnesses; OSHA standard practices for safe use of explosives and blasting agents; and measures for reducing occupational EMF exposures); establish fire safety evacuation procedures; and define safety performance standards (e.g., electrical system standards and lightning protection standards). The program shall include a training program to identify hazard training requirements for workers for each task and establish procedures for providing required training to all workers. The program shall include worker training regarding how to identify potentially contaminated soils and/or groundwater. Documentation of training and a mechanism for reporting serious accidents to appropriate agencies shall be established.

The program shall identify requirements for temporary fencing around staging areas, storage yards, and excavation areas during construction or

decommissioning activities. Such fencing shall be designed to restrict transient traffic, off-highway vehicle (OHV) use, and the general public from accessing areas under construction and shall be removed once construction or decommissioning activities are complete. The program shall also identify appropriate measures to be taken during operation of the project to limit public access to hazardous facilities (e.g., permanent fencing, locked access).

The applicant or applicant's contractor shall designate an environmental field representative who shall be on site to observe, enforce, and document adherence to the program for all construction activities. The plan shall be submitted to the appropriate agency at least 30 days prior to construction.

MM HAZ-1c: Waste Management Plan. Prior to approval of final construction plans, the applicant or applicant's contractors shall prepare a Waste Management Plan, which shall determine waste procedures, waste storage locations, waste-specific management and disposal requirements, inspection procedures, and waste minimization procedures.

The applicant or applicant's contractor shall designate an environmental field representative who shall be on site to observe, enforce, and document adherence to the plan for all construction activities. The plan shall be submitted to the appropriate agency at least 30 days prior to construction.

MM HAZ-1d: Testing for environmental hazards associated with demolition. Prior to demolition of the existing Boulevard Substation and surrounding buildings, soil, conduit, equipment, and structures shall be tested for environmental hazards, including oil, lead-based paint, and asbestos. An asbestos and lead-based paint survey shall be performed by a Cal/OSHA certified Asbestos Consultant/Site Surveillance Technician and a California Department of Public Health (CDPH) certified Inspector/Assessor, Sampling Technician, or Program Monitor. The survey shall be performed in accordance with the applicable state guidance to identify asbestos containing materials (ACM), asbestos containing construction materials (ACCM), and lead-based paint (LBP) as defined in the California Code of Regulations. If ACM, ACCM, or LBP is identified, abatement and disposal of all regulated materials shall be performed by a Cal/OSHA/CDPH certified abatement contractor prior to or during the demolition process.

Tule Wind Project

The proposed Tule Wind Project includes the construction and operation of up to 134 wind turbines, two meteorological towers, a sonic detecting and ranging (SODAR) unit, an operations and maintenance (O&M) facility, a collector substation, a 10-acre construction parking area, 19 laydown areas, a 34.5 kV overhead and underground collector cable system, and a 138 kV overhead transmission line that would connect to the proposed rebuilt Boulevard Substation component of the ECO Substation Project previously described. The project also includes the construction of access roadways, temporary staging areas for the construction of the wind turbines, and a temporary batch plant for construction activities. The project does not propose the demolition of any existing building that may contain asbestos or LBP.

The use, transport, and storage of hazardous materials during construction of the project would include vehicle and equipment maintenance fuels, lubricating oils, grease, solvents, hydraulic fluid, and coolant. A list of these and additional hazardous materials typically utilized during transmission line construction and reasonably anticipated for construction of the project is presented in Table D.10-3, Hazardous Materials Associated with Typical Wind Projects.

Table D.10-3
Hazardous Materials Associated with Typical Wind Projects

Hazardous Material	Uses	Typical Quantities Present
Fuel: diesel[a]	Powers most construction and transportation equipment during construction and decommissioning phases	Less than 1,000 gallons (3,785 liters); stored in aboveground tanks during construction and decommissioning phases[b]
	Powers emergency generator during operational phase	Less than 100 gallons (379 liters); stored in aboveground tanks to support emergency power generator throughout the operation phase
Fuel: gasoline[c]	May be used to power some construction or transportation equipment	Because of the expected limited number of construction and transportation vehicles utilizing gasoline, on-site storage is not likely to be needed throughout any phase of the wind energy project.
Fuel: propane[d]	Most probable fuel for ambient heating of the control building	Typically 500 to 1,000 gallons (1,893 to 3,785 liters); stored in aboveground propane storage vessel
Lubricating oils/grease/hydraulic fluids/gear oil	Lubricating oil is present in some wind turbine components and in the diesel engine of the emergency power generator. Maintenance of fluid levels in construction and transportation equipment is needed. Hydraulic fluid is used in the rotor driveshaft braking system and other controls. Gear oil and/or grease are used in the drive train transmission and yaw motor gears.	Limited quantities stored in portable containers (capacity of 55 gallons (208 liters} or less); maintained on site during decommissioning, construction, and operational phases

Table D.10-3 (Continued)

Hazardous Material	Uses	Typical Quantities Present
Glycol-based antifreeze	Present in some wind turbine components for cooling purposes (e.g., 5 to 10 gallons [19 to 38 liters]) Present in the cooling system of the diesel engine for the emergency power generator	Limited quantities (10 to 20 gallons (38 to 76 liters) of concentrate) stored on site during construction and decommissioning phases Limited quantities (1 to 10 gallons (4 to 38 liters) of concentrate) stored on site during operational phase
Lead-acid storage batteries and electrolyte solution	Present in construction and transportation equipment. Backup power source for control equipment, tower lighting, and signal transmitters.	Limited quantities of electrolyte solution (<20 gallons (76 liters)) for maintenance of construction and transportation equipment during construction and decommissioning phases Limited quantities of electrolyte solution (<10 gallons (38 liters)) for maintenance of control equipment during operational phase Batteries?
Other batteries (e.g., nickel-cadmium [NI-CAD] batteries)	Present in some control equipment and signal-transmitting equipment	Storage of such batteries may take place on site.
Cleaning solvents	Organic solvents (most probably petroleum-based but not RCRA-listed) used for equipment cleaning and maintenance Where feasible, water-based cleaning and degreasing solvents may be used.	Limited quantities (<55 gallons (208 liters)) on site during construction and decommissioning to maintain construction and transportation equipment Limited quantities (<10 gallons (38 liters)) on site during operational phase to maintain equipment
Paints and coatings[e]	Used for corrosion control on all exterior surfaces of turbines and towers	Limited quantities (<50 gal [189 L]) for touch-up painting during construction phase Limited quantities (<20 gal [76 L]) for maintenance during operational phase
Dielectric fluids[f]	Present in electrical transformers, bushings, and other electric power management devices as an electrical insulator	Some transformers may contain more than 500 gallons (1,893 liters) of dielectric fluid.
Explosives	May be necessary for excavation of tower foundations in bedrock May be necessary for construction of access and/or on-site roads or for grade alterations on site	On-site storage expected to occur only for limited periods of time and in limited quantities as needed by specific excavation and construction activities
Pesticides	May be used to control vegetation around facilities for fire safety	Pesticides would likely be brought to the site and applied by a licensed applicator as necessary.

Source: Iberdrola Renewables, Inc. 2010.
Notes:
[a] It is assumed that commercial vendors would replenish diesel fuel stored on site as necessary.
[b] This value represents the total on-site storage capacity, not the total amounts of fuel consumed. See footnote a. On-site fuel storage during construction and decommissioning phases would likely be in aboveground storage tanks with a capacity of 500 to 1,000 gallons (approximately 2,000 to 4,000 liters). Tanks may be of double-wall construction or may be placed within temporary, lined earthen berms for spill containment and control. At the end of construction and decommissioning phases, any excess fuel as well as the storage tanks would be removed from the site, and any surface contamination resulting from fuel-handling operation would be remediated. Alternatively, rather than store diesel fuel on site, the off-road diesel-powered construction equipment could be fueled directly from a fuel transport truck.
[c] Gasoline fuel is expected to be used exclusively by on-road vehicles (primarily automobiles and pickup trucks). These vehicles are expected to be refueled at existing off-site refueling facilities.
[d] Delivered and replenished as necessary by a commercial vendor

Table D.10-3 (Continued)

[e] It is presumed that all wind turbine components, nacelles, and support towers would be painted at their respective points of manufacture. Consequently, no wholesale painting would occur on site. Only limited amounts would be used for touch-up purposes during construction and maintenance phases. It is further assumed that the coatings applied by the manufacturers during fabrication would be sufficiently durable to last throughout the operational period of the equipment and that no wholesale repainting would occur.

[f] It is assumed that transformers, bushings, and other electrical devices that rely on dielectric fluids would have those fluids added during fabrication. However, very large transformers may be shipped empty and have their dielectric fluids added (by the manufacturer's representative) after installation. It is further assumed that servicing of electrical devices that involves wholesale removal and replacement of dielectric fluids would not likely occur on site and that equipment requiring such servicing would be removed from the site and replaced. New transformers, bushings, or electrical devices are expected to contain mineral-oil-based, or synthetic dielectric fluids that are free of polychlorinated biphenyls (PCBs); some equipment may instead contain gaseous dielectric agents (e.g., sulfur hexafluoride [SF6]) rather than liquid dielectric fluids.

Although the use of hazardous materials for their intended purpose during construction would not pose a significant risk to the public or environment, accidental spills or unauthorized releases of hazardous materials during construction could result in soil contamination and the potential exposure of workers and/or the public to contamination. This would be a significant impact. Incorporation of APM TULE-HAZ-1 would provide for a spill prevention, control, and countermeasure plan to identify where hazardous materials and waste would be stored on site, how spill prevention measures would be implemented, and where spill kits would be located. The plan would also identify the appropriate spill response action for each material or waste and procedures for notifying the appropriate authorities. In addition, APM TULE-HAZ-2 would address storage, use, transportation, and disposal of each hazardous material anticipated for use on the project site, as well as inspection procedures, storage requirements, storage quantity limits, inventory control, nonhazardous product substitutes, and disposition of excess materials. These APMs would reduce potential impacts related to soil and/or groundwater contamination during construction. Implementation of an HMMP (Mitigation Measure HAZ-1a) and a Health and Safety Program (Mitigation Measure HAZ-1b), which further clarify and supersede APMs TULE-HAZ-1 and TULE-HAZ-2, would ensure that potential hazards to the public or the environment resulting from contamination to soil and/or groundwater during construction would not be adverse and under CEQA would be less than significant (Class II), for the same reasons as stated previously for the ECO Substation Project.

Hazardous materials contained in solid and industrial wastes during construction may also pose a risk to human health and the environment. Construction wastes would consist primarily of concrete waste from turbine pad construction, wood waste from wood forms used for concrete pad construction, and scrap metal steel from turbine tower construction. Additional wastes could include erosion control materials, such as straw bales and silt fencing, and packaging materials from associated turbine parts and other electrical equipment. Construction wastewater would be generated from concrete trucks after concrete loads have been emptied.

Solid waste produced by the construction of the Tule Wind Project would include packaging material for turbine components, containers, and waste associated with the assembly of the turbines. These materials would be used and stored in designated construction staging yards within the project site boundaries. Construction wastes would be recycled when feasible. Steel scrap would be collected and transported to a recycling facility. Wood waste would also be recycled where feasible, depending on size and quantity of scrap and leftover materials. Concrete waste would be used as on-site fill. If there is no reuse option available for concrete waste, it would be removed to a nearby landfill. Packaging waste (such as paper and cardboard) would be separated and recycled. Any nonrecyclable wastes would be collected and transported to a local landfill.

Industrial waste would be generated in the construction phase and would include paints and solvents associated with the assembly of the turbines and towers. APM TULE-HAZ-3, which has been superseded and clarified by Mitigation Measure HAZ-1c, would determine waste procedures, waste storage locations, waste-specific management and disposal requirements, inspection procedures, and waste minimization procedures.

In addition to the hazardous materials described previously, human waste and chemical toilets have direct impacts on human health and biological resources. Portable toilets would be provided for on-site sewage handling during construction and would be pumped and cleaned regularly by the construction contractor.

Accidental spills or unauthorized releases of hazardous materials during construction could result in soil contamination and the potential exposure of workers and/or the public to contamination. This would be a significant impact. Incorporating the project design features described in APMs TULE-HAZ-1, TULE-HAZ-2, and TULE-HAZ-3 and implementing a Hazardous Materials Management Plan (Mitigation Measure HAZ-1a), a Health and Safety Program (Mitigation Measure HAZ-1b), and a Waste Management Plan (Mitigation Measure HAZ-1c) would reduce the likelihood of improper handling, storage, or release of hazardous substances and mitigate potential hazards to the public or the environment resulting from foreseeable upset or accidental conditions related to hazardous materials. Identified impacts would be adverse; therefore, mitigation has been provided that would mitigate this impact. Under CEQA, impacts would be significant but can be mitigated to a level that is considered less than significant (Class II).

ESJ Gen-Tie Project

The ESJ Gen-Tie Project component analyzed in this EIR/EIS includes the construction, operation, and maintenance of a less-than-1-mile segment of an electrical generator tie-line (gen-tie) crossing the U.S.–Mexico border and terminating at the proposed ECO Substation. In addition, an approximately 12-foot-wide, permanent, unpaved gen-tie tower access road would

be constructed to parallel the gen-tie route. Other than an approximately 2-acre consolidated construction laydown/parking/stringing area, all construction activities would occur within the permanent ROW. The project does not involve the demolition of any existing structures on site and therefore would not create a hazard related to the release of asbestos, LBP, or other hazardous materials from demolition activities.

Commonly used hazardous substances, such as gasoline, diesel fuel, lubricating oil, grease, and solvents, would be used on site for construction activities. Acetylene and oxygen would be used for welding. These materials would be transported and handled in accordance with all federal, state, and local laws regulating the management and use of hazardous materials. Although limited quantities of these hazardous materials are expected to be utilized during construction, accidental spills of a large quantity of hazardous materials could potentially result in soil or groundwater contamination and expose workers to potential health and safety risks. This would be a significant impact.

To minimize/eliminate fuel spillage, construction vehicles would be adequately maintained and equipped. Equipment maintenance work, including refueling, would occur off site or within the designated construction staging areas. Potentially hazardous construction waste, including trash, litter, garbage, other solid waste, petroleum products, and other potentially hazardous materials, would be removed to an off-site hazardous waste facility permitted to treat, store, or dispose of such materials. Once construction is complete, fuels and other petroleum products would no longer remain on site.

In addition to the project design features discussed previously, all contractor and subcontractor personnel would receive training prior to construction regarding the applicable environmental laws and regulations related to hazardous materials as provided for in APM ESJ-HAZ-1 and clarified and superseded by Mitigation Measures HAZ-1a and HAZ-1b. Implementation of an HMMP (Mitigation Measure HAZ-1a) and a Health and Safety Program (Mitigation Measure HAZ-1b) would reduce the likelihood of improper handling, storage, or release of hazardous substances and reduce potential hazards to the public or the environment resulting from foreseeable upset or accidental conditions related to hazardous materials for the same reasons as described previously for the ECO Substation and Tule Wind projects. Identified impacts would be adverse; therefore, mitigation has been provided that would mitigate this impact. Under CEQA, impacts would be significant but can be mitigated to a level that is considered less than significant (Class II).

Proposed PROJECT

As described previously, construction of the Proposed PROJECT including the Campo, Manzanita, and Jordan wind energy projects would involve the use and storage of commonly

used hazardous materials such as gasoline, diesel fuel, lubricating oil, grease, solvents, and other vehicle and equipment maintenance fluids. These materials would be used and stored in designated construction staging areas within the Proposed PROJECT site boundaries. All hazardous materials would be transported and handled in accordance with all federal, state, and local laws regulating the management and use of hazardous materials.

Although the use of hazardous materials for their intended purpose during construction would not pose a significant risk to the public or environment, accidental spills or unauthorized releases of hazardous materials during construction could potentially result in soil contamination and the potential exposure of workers and/or the public. This would be a significant impact. In addition, hazardous materials contained in solid and industrial wastes during construction may also pose a risk to human health and the environment.

As part of the ECO Substation Project, the Boulevard Substation Rebuild would include demolition of the existing Boulevard Substation and removal of an existing residence, one garage, one barn, and five outbuildings. Hazardous substances, such as gasoline and oil, associated with the existing Boulevard Substation may exist; therefore, demolition and construction of the substation may potentially expose project personnel and the public to potential health hazards, which would be a significant impact.

For the reasons described previously, implementation of Mitigation Measure HAZ-1a (HMMP), Mitigation Measure HAZ-1b (Health and Safety Program), and Mitigation Measure HAZ-1c (Waste Management Plan) would reduce the likelihood of improper handling, storage, or release of hazardous substances, and would mitigate potential hazards to the public or the environment resulting from foreseeable upset or accidental conditions related to hazardous materials. In addition, Mitigation Measure HAZ-1d and APMs ECO-HAZ-2 (Phase II ESA for existing Boulevard Substation parcel after demolition) and ECO-HAZ-3 (testing of existing equipment at Boulevard Substation) related to demolition of the existing Boulevard Substation and surrounding buildings would mitigate potential health hazards from encountering hazardous substances during demolition and construction activities. Identified impacts would be adverse; therefore, mitigation has been provided that would mitigate this impact. Under CEQA, impacts would be significant but can be mitigated to a level that is considered less than significant (Class II).

Impact HAZ-2: Residual pesticides and/or herbicides could be encountered during grading or excavation.

ECO Substation Project

As described in Section D.4, Land Use, existing land uses in the project area include a mixture of general rural uses (e.g., large lot ranches, single-family homes, small-scale agricultural

operations) and undeveloped rural land. Soil and/or groundwater in areas that are currently or were historically used for farming may contain residual pesticides and herbicides. This may result in a significant impact to the health of construction workers and the public who come into contact with the soil and/or groundwater in these areas.

According to the Limited Phase I ESA (Tetra Tech EM, Inc. 2008b) prepared for the project, agricultural fields and a fertilizer mixing tank were identified in the Mile 4 segment of the ECO Substation 138 kV transmission corridor. As a result, pesticides and herbicides used in agricultural operations at the Jacumba Valley Ranch were identified as an issue of concern. Although no fertilizers, pesticides, or herbicides are currently in use, since current use of the agricultural fields is for organic farming operations, historical agricultural uses and common pest control practices may result in the presence of residual pesticides and herbicides. Residual pesticides and/or herbicides encountered during grading or excavation would result in a potential hazard to construction workers or the public. This would be a significant impact.

By testing for residual pesticides/herbicides (Mitigation Measure HAZ-2a) and developing a contingency plan if suspected contamination is identified (Mitigation Measure HAZ-2b), potential hazards to the public or the environment resulting from residual pesticides and/or herbicides encountered during grading activities would be mitigated. In addition, as part of the training program provided in the Health and Safety Program (Mitigation Measure HAZ-1b), workers would be trained on how to identify suspected contamination in soils and groundwater. Identified impacts would be adverse; therefore, mitigation has been provided that would mitigate this impact. Under CEQA, impacts would be significant but can be mitigated to a level that is considered less than significant (Class II).

MM HAZ-2a: Test for pesticides/herbicides on currently or historically farmed land. Prior to initiating excavation or grading in areas where the land has been or is currently being farmed, soil samples shall be collected and tested for herbicides, pesticides, and fumigants to determine the presence and extent of any contamination. The sampling and testing shall be prepared in consultation with the County Agricultural Commission, conducted by an appropriate California licensed professional, and sent to a California Certified Laboratory. A report documenting the areas proposed for sampling and the process used for sampling and testing shall be submitted to the project's lead agency for review and approval at least 60 days prior to construction. Results of the laboratory testing and recommended resolutions for handling and excavating materials found to exceed regulatory requirements shall be submitted to the project lead agency 30 days prior to construction.

If soil or groundwater contamination is confirmed as a result of soil sampling, the applicant's contractors or subcontractors shall immediately stop work and notify the designated environmental field representative. All work in the contaminated area shall cease, the work area shall be cordoned off, and the environmental field representative shall implement appropriate health and safety procedures. Work outside the contaminated area may continue as determined by the environmental field representative.

Excavated materials containing elevated levels of pesticides or herbicides would require special handling and disposal according to procedures established by the regulatory agencies. Effective dust control suppression procedures shall be used in construction areas to reduce airborne emissions of these contaminants and reduce the risk of exposure to workers and the public. The applicant or applicant's contractors shall contact the appropriate regulatory agencies for the State of California (e.g., DTSC or RWQCB) and the County to plan options for handling, treating, and/or disposing of materials.

MM HAZ-2b: Contingency plan for encountering contaminated soils. If soil or groundwater contamination is suspected or encountered during grading or excavation activities (e.g., unusual soil discoloration or strong odor), the applicant's contractors or subcontractors shall immediately stop work and notify the designated environmental field representative. All work in the area of suspected contamination shall cease, the work area shall be cordoned off, and the environmental field representative shall implement appropriate health and safety procedures. Work outside the suspected area may continue as determined by the environmental field representative.

Preliminary samples of the soil, groundwater, or suspected material shall be taken by OSHA-trained individuals and sent to a California Certified Laboratory for characterization. If the sample testing determines that contamination is not present, work shall continue at the previously suspected site. If contamination is found above regulatory limits, however, the appropriate regulatory agency (e.g., RWQCB or Certified Unified Program Agency (CUPA)) responsible for responding to and providing environmental oversight of the region shall be notified in accordance with state or local regulations. In addition, the applicant or applicant's contractors shall contact the appropriate regulatory agencies for the State of California (e.g., DTSC or RWQCB) and the County to plan options for handling, treating, and/or disposing of materials.

Documentation of the suspected contamination shall be made in the form of a report, identifying the location and potential contamination, as well as the process used for sampling. Results of laboratory testing and recommended resolutions for handling and excavating materials found to exceed regulatory requirements shall be submitted to the project lead agency for review and approval.

Tule Wind Project

The proposed Tule Wind Project site is located in a rural setting that has been historically used as grazing land, with some limited areas of irrigated agriculture. Past agricultural practices may have employed the use of pesticides or herbicides. Therefore, residual pesticides and/or herbicides may be present in surface soils. Because surface soils may be disturbed during the construction phases of the project, this may present a significant impact to the health of construction workers and the public who may come in contact with soil and/or groundwater containing pesticides and/or herbicides. By testing for residual pesticides/herbicides (Mitigation Measure HAZ-2a) and developing a contingency plan if suspected contamination is identified (Mitigation Measure HAZ-2b), potential hazards to the public or the environment resulting from residual pesticides and/or herbicides encountered during grading activities would be mitigated. Identified impacts would be adverse; therefore, mitigation has been provided that would mitigate this impact. Under CEQA, impacts would be significant but can be mitigated to a level that is considered less than significant (Class II).

ESJ Gen-Tie Project

The proposed ESJ Gen-Tie Project would traverse or be located on vacant, undeveloped rural desert land in southeastern San Diego County. As documented in the Phase I ESA prepared for the project site, the subject property has never been developed (AECOM 2009). No commercial or industrial uses have occurred on the property, including agricultural uses; therefore, the presence of residual pesticides and/or herbicides is unlikely. Potential hazards to the public or the environment resulting from residual pesticides and/or herbicides encountered during grading activities would not be adverse. Under CEQA, impacts would be considered less than significant (Class III).

Proposed PROJECT

Existing and past land use activities are potential indicators of hazardous material storage and use. Hazardous materials sources include contaminated sites and agricultural fields treated with pesticides and herbicides. The Proposed PROJECT, including the Campo, Manzanita, and Jordan wind energy projects, traverses land utilized for a variety of uses, including open space, recreational, general rural uses (e.g., large lot ranches, single-family homes, and small-scale agricultural operations), rural commercial, and limited industrial uses. Components of the ECO

Substation and Jordan Wind Energy for example appears to be located on or traverse land identified as DOC Farmland. Areas currently or historically used for farming or other agricultural uses may potentially contain residual levels of pesticides and/or herbicides in the surface soil that may be disturbed during the construction phases of the Proposed PROJECT. This would result in a significant impact to the health of construction workers and the public who may be exposed to pesticide or herbicide contaminated soils and/or groundwater. For the reasons described previously, implementation of Mitigation Measures HAZ-2a (testing for residual pesticides/herbicides) and HAZ-2b (developing a contingency plan if suspected contamination is identified) would mitigate potential hazards to the public or the environment resulting from residual pesticides and/or herbicides encountered during grading activities. Identified impacts would be adverse; therefore, mitigation has been provided that would mitigate this impact. Under CEQA, impacts would be significant but can be mitigated to a level that is considered less than significant (Class II).

Impact HAZ-3: Previously unknown soil and/or groundwater contamination could be encountered during grading or excavation.

ECO Substation Project

Review of the EDR database report for the proposed ECO Substation site revealed no documented or potential contamination on site or originating from adjacent properties (Tetra Tech EM, Inc. 2008a). Based on the EDR database report for the 13.3-mile, 138 kV transmission corridor, and due to several factors, including regulatory status, distance, elevation, current authorized land use, and findings of recent site assessments, the Limited Phase I ESA concluded that all 26 properties listed in the regulatory databases and 72 orphan sites have little potential to impact the environmental conditions of the transmission line corridor (Tetra Tech EM, Inc. 2008b). Therefore, it is unlikely that hazardous materials would be encountered during excavation at the site, with the exception of lead, which may exist on the informal shooting ranges identified during site reconnaissance in March 2008 (Tetra Tech EM, Inc. 2008a).

Due to data gaps identified in the Limited Phase I ESA, however, there is the potential for contaminants from sites identified within the standard records review and site reconnaissance to have migrated to the transmission corridor. Furthermore, pesticides, herbicides, and contaminants from the surrounding properties identified as data gaps may be present in soil and/or groundwater along the transmission corridor, which may be disturbed during construction activities. This would result in a significant impact to the health of construction workers and the public who may be exposed to contaminated soils and/or groundwater.

By testing for residual pesticides/herbicides (Mitigation Measure HAZ-2a), implementing a contingency plan if suspected contamination is identified (Mitigation Measure HAZ-2b), and

sampling and testing soils to determine lead contamination near informal shooting ranges (Mitigation Measure HAZ-3), which clarifies and supersedes APM ECO-HAZ-4, potential hazards to the public or the environment resulting from previously unknown soil and/or groundwater contamination encountered during grading activities would be mitigated. Identified impacts would be adverse; therefore, mitigation has been provided that would mitigate this impact. Under CEQA, impacts would be significant but can be mitigated to a level that is considered less than significant (Class II).

MM HAZ-3: Soil testing for lead contamination. Soil samples shall be collected and tested from all excavation sites within 500 feet of any area identified as a current or historical shooting range to determine the presence of lead and extent of any contamination. The sampling and testing shall be conducted by a California licensed professional and sent to a California Certified Laboratory. A report documenting the areas proposed for sampling and the process used for sampling and testing shall be submitted to the project's lead agency for review and approval at least 60 days prior to excavation. Results of the laboratory testing and recommended resolutions for handling and excavating any materials found to exceed regulatory requirements shall be submitted to the project's lead agency 30 days prior to excavation.

In addition, a Soil/Lead Contamination Handling Plan shall be prepared to address appropriate procedures in the event that lead contamination is discovered as a result of soil testing. This plan shall contain provisions for a lead-awareness program for workers, as well as guidelines for the identification, removal, transport, and disposal of lead-impacted materials. This plan shall also emphasize that all activities within, or in close proximity to, contaminated areas must follow applicable environmental and hazardous waste laws and regulations. This plan shall be submitted to the project's lead agency 30 days prior to excavation.

Documentation of any confirmed or suspected contamination identified during testing or excavation shall be made in the form of a report, identifying the location and potential contamination, as well as the process used for sampling. Results of laboratory testing and recommended resolutions for handling and excavating materials found to exceed regulatory requirements shall be submitted to the project lead agency for review and approval.

Tule Wind Project

According to the EDR database search conducted for the Tule Wind Project, the project area has one identified LUST, located at McCain Valley Adult Conservation Camp. GeoTracker

noted that 470 cubic feet of impacted soil remain on site under the tank field, to a depth of approximately 10 feet below grade (SWRCB 2008a). No detections of hydrocarbons or volatiles have been found in the facility's potable water supply. The overseeing agency approved site closure based on natural attenuation. Four wells are monitored on a semiannual basis as a contingency of closure. Although this site is within the project boundary and on State of California Conservation lands, the site is not identified as an area for turbines, O&M facility, substation, or transmission line construction and is therefore not anticipated to impact the project.

An additional LUST is located adjacent to the proposed 138 kV transmission line at the Caltrans/Boulevard Maintenance Facility and is monitored semiannually for hydrocarbon impacts to the aquifer (SWRCB 2008b). This site is not located within the project area, but is adjacent to the ROW on Old Highway 80; therefore, construction of the transmission line poles is not anticipated to impact remediation efforts, including monitoring wells, at the Caltrans/Boulevard Maintenance Facility site. As construction of the project is not anticipated to impact any LUST sites or sites with potentially affected soils, it is unlikely that hazardous materials would be encountered during excavation.

Past agricultural activities on and around the Tule Wind Project site may have employed the use of pesticides or herbicides. As surface soils may be disturbed during the construction phases of the project, this may present a significant impact to the health of construction workers and the public who may come in contact with contaminated soil and/or groundwater. By testing for residual pesticides/herbicides (Mitigation Measure HAZ-2a) and implementing a contingency plan if suspected contamination is identified (Mitigation Measure HAZ-2b), potential hazards to the public or the environment resulting from previously unknown soil and/or groundwater contamination encountered during grading activities would be mitigated. Identified impacts would be adverse; therefore, mitigation has been provided that would mitigate this impact. Under CEQA, impacts would be significant but can be mitigated to a level that is considered less than significant (Class II).

ESJ Gen-Tie Project

According to the Phase I ESA prepared for the project, the subject site and surrounding properties are not listed on any federal, state, or local regulatory agency database (AECOM 2009). In addition, no recognized environmental conditions were identified on the ESJ Gen-Tie Project site or on surrounding properties. During site reconnaissance conducted by AECOM, Inc., in March 2009, no petroleum hydrocarbons, hazardous materials, aboveground storage tanks, or visual evidence of USTs were observed on the project site. No visual evidence of groundwater monitoring wells, clarifiers, or dry wells was observed. In addition, no discolored

soil, water, unusual vegetative conditions, staining, or visual evidence of a hazardous materials release was observed.

The southeast portion of the project area along the hillside is reportedly used occasionally as an informal shooting range. In addition to shotgun shells and casings observed along the edge of the foothills, AECOM observed miscellaneous trash and debris in the area. Spent shotgun shells and bullet casings can pose a potential threat of contamination to the project site. As spent ammunition oxidizes, exposure to lead can occur during ground-disturbing activities such as grading. Inhalation of dust/soils particles may be a potential pathway of exposure during grading activities. Implementation of Mitigation Measure HAZ-3 would provide for soil testing to determine lead contamination for excavation within 500 feet of the identified informal shooting range.

Because no existing hazardous materials sites were identified on or near the ESJ Gen-Tie Project site, it is unlikely that hazardous materials would be encountered during excavation at the site, with the exception of lead, which may exist on the informal shooting ranges identified during site reconnaissance (AECOM 2009). Soil sampling and testing to determine lead contamination for excavation within 500 feet of any informal shooting range (Mitigation Measure HAZ-3) would mitigate potential hazards to the public or the environment resulting from previously unknown soil and/or groundwater contamination encountered during grading activities. Identified impacts would be adverse; therefore, mitigation has been provided that would mitigate this impact. Under CEQA, impacts would be significant but can be mitigated to a level that is considered less than significant (Class II).

Proposed PROJECT

According to the EDR database searches conducted for the Proposed PROJECT, there is one identified LUST in the project area with wells monitored semiannually for a potential affected aquifer, and one identified LUST located adjacent to the ROW of Old Highway 80 that is monitored semiannually for a potential affected aquifer. Neither site is an area identified for construction of Proposed PROJECT components, however. Because EDR searches have not been conducted at this time, the likelihood of contamination at the Campo, Manzanita, and Jordan wind energy project sites is unknown but would ultimately be identified as part of the environmental review process for these respective projects.

Several informal shooting ranges were identified within the Proposed PROJECT area. As spent ammunition oxidizes, exposure to lead can occur during ground-disturbing activities such as grading, resulting in a potential threat of contamination. Inhalation of dust/soils particles may be a potential pathway of exposure during grading activities.

Because construction of the Proposed PROJECT is not anticipated to impact either a LUST site or a site with potentially affected soils, and since no other hazardous materials sites were identified on or near the Proposed PROJECT site, it is unlikely that hazardous materials would be encountered during excavation, with the exception of lead, which may exist on informal shooting ranges. Due to data gaps identified in the Limited Phase I ESA for the ECO Substation Project, however, there is the potential for contaminants from sites identified within the standard records review and site reconnaissance to have migrated to the transmission corridor. Furthermore, pesticides, herbicides, and contaminants from the surrounding properties identified as data gaps may be present in soil and/or groundwater along the transmission corridor, which may be disturbed during construction activities. This potential for contamination may adversely affect the health of construction workers and the public who may be exposed to contaminated soils and/or groundwater. The presence of contamination is uniquely localized potential impact and the presence of contamination at the Campo, Manzanita, and Jordan wind energy project sites cannot be determined at this time.

Testing for residual pesticides/herbicides (Mitigation Measure HAZ-2a), implementation of a contingency plan if suspected contamination is identified (Mitigation Measure HAZ-2b), and soil testing to determine lead contamination near informal shooting ranges (Mitigation Measure HAZ-3) would mitigate potential hazards to the public or the environment resulting from previously unknown soil and/or groundwater contamination encountered during grading activities. Identified impacts would be adverse; therefore, mitigation has been provided that would mitigate this impact. Under CEQA, impacts would be significant but can be mitigated to a level that is considered less than significant (Class II).

Impact HAZ-4: Potential safety hazards could adversely affect construction workers or the general public accessing the project site during construction, operation, or decommissioning.

ECO Substation Project

The safety of both workers and the general public is extremely important during construction and operation of the project. Although unintentional, the potential exists for safety hazards to occur on the project site during construction and operational activities. Unauthorized access to the project site during construction, construction site conditions or activities that may result in injuries or hazardous conditions to construction workers, accidental spills and releases of hazardous materials, and public access to hazardous facilities during operation of the project may result in adverse impacts to construction workers and the general public. This would be a significant impact. Design features incorporated into the project and measures to mitigate these impacts are described as follows for construction and operation of the facilities.

Construction

To prevent unauthorized members of the public from entering the project site during construction, temporary fences would be installed around the perimeter of the construction site, and notification signs would be placed at all entrances to the site. In addition, construction workers would be clearly identifiable so as to prevent unauthorized persons from entering the site during construction. To mitigate potentially significant safety hazards to construction workers and the public, a safety assessment would be conducted for the project to describe potential safety issues associated with the project, as well as prevention and contingency measures (Mitigation Measure HAZ-4a). As described previously, a health and safety program would also be implemented to educate construction workers about the hazards associated with this particular project site and the safety measures that must be taken to prevent injury and hazardous conditions within the working environment (Mitigation Measure HAZ-1b). The program would identify requirements for temporary fencing around staging areas, storage yards, and excavation areas during construction, as well as measures to be taken during operation of the project to limit public access to hazardous facilities (e.g., permanent fencing, locked access). In addition, a medical aid kit would be kept on site at all times during construction.

The project may require the use of explosives for the construction of the 138 kV transmission line. These activities would be limited to areas where explosives are absolutely necessary, and precautions would be taken to limit accessibility to recreational users and the general public. Prior to removing earth or rock with the use of explosives, a pre-blast survey and blasting plan would be prepared for the project (Mitigation Measure HAZ-4b). The pre-blast survey would be conducted for structures within a minimum radius of 1,000 feet from the identified blast site. Sensitive receptors that could reasonably be affected by blasting would also be surveyed as part of the pre-blast survey. The blasting plan would outline the anticipated blasting procedures for the removal of rock material at the proposed turbine foundation locations and would address air-blast limits, ground vibrations, and maximum peak particle velocity for ground movement.

Operation

To prevent unauthorized access during operation of the ECO Substation project, a 10-foot-tall chain-link fence topped with barbed wire would enclose the entire substation, including the 500 kV yard and the 230/138 kV yard. In addition, a 20-foot-wide buffer around the perimeter for the substation pad would be maintained. All entrance gates would be locked and monitored remotely to limit access to only qualified personnel. Warning signs, in English and Spanish, would be posted on the substation fence in accordance with federal, state, and local safety regulations. A substation ground grid would also be installed in accordance with applicable safety regulations.

By incorporating the project design features previously described, conducting a safety assessment for the project site (Mitigation Measure HAZ-4a), conducting a pre-blast survey and preparing a blasting plan if blasting is deemed necessary for construction of the 138 kV transmission line (Mitigation Measure HAZ-4b), and developing and implementing a Health and Safety Program (Mitigation Measure HAZ-1b), potential safety hazards to workers or the public during construction and operation would be mitigated. Identified impacts would be adverse; therefore, mitigation has been provided that would mitigate these impacts. Under CEQA, impacts would be significant but can be mitigated to a level that is considered less than significant (Class II).

MM HAZ-4a: Safety Assessment. Prior to commencing construction activities, the applicant or applicant's contractor(s) shall conduct a safety assessment to describe potential safety issues associated with the project, how safety prevention measures would be implemented, where medical aid kits would be located, the appropriate response action for each safety hazard, and procedures for notifying the appropriate authorities. The assessment shall address issues such as site access, construction hazards, safe work practices, security, heavy equipment transportation, traffic management, emergency procedures, and fire control.

MM HAZ-4b: Blasting Plan. If blasting is deemed necessary for the construction of project components, the applicant or applicant's contractor shall conduct a pre-blast survey and prepare a blasting plan. A written report of the pre-blast survey and final blasting plan shall be provided to the appropriate regulatory agency and approved prior to any rock removal using explosives. In addition to any other requirements established by the appropriate regulatory agencies, the pre-blast survey and blasting plan shall meet the following conditions:

- The pre-blast survey shall be conducted for structures within a minimum radius of 1,000 feet from the identified blast site to be specified by the applicant or applicant's contractor. Sensitive receptors that could reasonably be affected by blasting shall be surveyed as part of the pre-blast survey. Notification that blasting would occur shall be provided to all owners of the identified structures to be surveyed prior to commencement of blasting. The pre-blast survey shall be included in the final blasting plan.
- The final blasting plan shall address air-blast limits, ground vibrations, and maximum peak particle velocity for ground movement, including provisions to monitor and assess compliance with the air-blast, ground vibration, and peak particle velocity requirements. The blasting plan

shall meet criteria established in Chapter 3 (Control of Adverse Effects) in the Blasting Guidance Manual of the U.S. Department of Interior Office of Surface Mining Reclamation and Enforcement.

- The blasting plan shall outline the anticipated blasting procedures for the removal of rock material at the proposed turbine foundation locations. The blasting procedures shall incorporate line control to full depth and controlled blasting techniques to create minimum breakage outside the line control and maximum rock fragmentation within the target area. Prior to blasting, all applicable regulatory measures shall be met. The applicant, general contractor, or its subcontractor (as appropriate) shall keep a record of each blast for at least 1 year from the date of the last blast.

Tule Wind Project

As described previously for the ECO Substation project, the potential exists for safety hazards to occur on the project site during construction and operational activities. Potential safety issues associated with the project include site access, construction, security, heavy equipment transportation, traffic management, emergency procedures, and fire control. Unauthorized access to the project site during construction, construction site conditions or activities that may result in injuries or hazardous conditions to construction workers, accidental spills and releases of hazardous materials, and public access to hazardous facilities during operation of the project may result in adverse impacts to construction workers and the general public. This would be a significant impact. Design features incorporated into the project and measures to mitigate these impacts are described as follows for construction, operation, and decommissioning activities.

Construction

Prior to commencing construction, a safety assessment would be conducted to describe potential safety issues specific to the project site, as provided for in APM TULE-PHS-1 and superseded by Mitigation Measure HAZ-4a. The safety assessment would identify potential safety issues associated with the project, including site access, construction, safe work practices, security, heavy equipment transportation, traffic management, emergency procedures, and fire control, as well as prevention and contingency measures. Furthermore, a health and safety program would be developed to protect both workers and the general public during construction, operation, and decommissioning of the project (Mitigation Measure HAZ-1b). The program would include standards regarding occupational safety, safe work practices for each task, a training program to identify hazard training requirements for workers and establish procedures for providing training to all workers, and mechanisms for documentation and reporting.

To ensure that members of the public do not accidentally enter the project site or access hazardous areas during construction, construction areas would be temporarily closed to limit the potential of hazards to the public. Signage would be provided throughout the project site, warning the public about the hazards of getting too close to the wind towers. Temporary fencing would be utilized to restrict transient traffic, OHVs, and the general public from accessing areas under construction. In addition, as provided for in APM TULE-PHS-6 and superseded by Mitigation Measure HAZ-1b, temporary security fencing would be located around the staging areas, storage yards, and excavation areas during construction to limit public access, or as required by local ordinance.[1] It is anticipated that this fencing would be a 6-foot-high chain-link structure with additional security wiring located at the top. When construction is complete, the fencing around the staging areas would be removed, and the staging areas would be returned to a natural state.

The project may require the use of explosives for the construction of turbine foundations, depending on the geologic bedrock conditions. These activities would be limited to areas where explosives are absolutely necessary, and precautions would be taken to limit accessibility to recreational users and the general public. Prior to removing rock with the use of explosives, a pre-blast survey and blasting plan would be prepared for the project (Mitigation Measure HAZ-4b). The pre-blast survey would be conducted for structures within a minimum radius of 1,000 feet from the identified blast site. Sensitive receptors that could reasonably be affected by blasting would also be surveyed as part of the pre-blast survey. The blasting plan would outline the anticipated blasting procedures for the removal of rock material at the proposed turbine foundation locations and would address air-blast limits, ground vibrations, and maximum peak particle velocity for ground movement.

Operation

Permanent security fencing would be installed around the perimeter of the project substation and the O&M facility, and all turbine tower access doors would be locked to limit public access as provided for in APM TULE-PHS-7 and clarified in Mitigation Measure HAZ-1b. Specific safety hazards related to structural failure of the towers or turbines are discussed under Impacts HAZ-7 and HAZ-8.

According to the BLM Resource Management Plan and Record of Decision, the area of McCain Valley has been identified as having abandoned or inactive mines. As discussed in Section D.13, Geology, Mineral Resources, and Soils, of this EIR/EIS, there are at least 48 abandoned or inactive mine openings in the project vicinity. The majority of these sites are located in the

[1] The current draft County ordinance, if adopted, requires fencing for portions of the project in the County that would not otherwise be proposed.

vicinity of Julian and McCain Valley. Abandoned mine hazards include, but are not limited to, open shafts, open pits and quarries, high and steep walls of pits and trenches, potential for the presence of explosives, the presence of contaminated air or gas in underground workings, and the presence of unstable buildings or structures. The Eastern San Diego County Resource Management Plan and Record of Decision Public Health and Safety section identifies goals, objectives, and management actions associated with abandoned mines. Those applicable to the proposed Tule Wind Project are described in Section D.10.2.1. BLM's incorporation of the goals, objectives, and management actions associated with abandoned mines would reduce potential safety hazards to workers or the general public in the project vicinity; therefore, impacts are considered less than significant.

Decommissioning

When the facility is retired or decommissioned, the turbine towers would be removed from the site and the materials would be reused or sold for scrap. Prior to the termination of the ROW authorization, a final decommissioning plan would be developed in compliance with the standards and requirements for closing a site and would be circulated for approval by interested agencies. A site reclamation plan and a monitoring program would be included as components of the decommissioning plan. Requirements in effect at the time of decommission are anticipated to require that all turbines and ancillary structures be removed from the site. As decommissioning activities are anticipated to have similar types of construction-related activities, all management plans, procedures, best management practices (BMPs), and stipulations developed for the construction phase would be applied to similar decommissioning activities. Temporary fencing would be utilized to limit public access to the area during the removal of the wind turbines. Impacts due to the decommission phase are not anticipated to increase hazards or potential impacts related to public health and safety. Adverse impacts related to decommissioning activities would be largely the same as those identified for construction; therefore, mitigation measures applicable to construction activities would also be necessary for decommissioning activities.

Implementation of Mitigation Measures HAZ-1b, HAZ-4a, and HAZ-4b, which further clarify and supersede APMs TULE-PHS-1, TULE-PHS-2, TULE-PHS-6, and TULE-PHS-7, would mitigate impacts related to safety hazards during construction, operation, and decommissioning of the Tule Wind Project. Identified impacts would be adverse; therefore, mitigation has been provided that would mitigate this impact. Under CEQA, impacts would be significant but can be mitigated to a level that is considered less than significant (Class II).

ESJ Gen-Tie Project

As described previously for the ECO Substation and Tule Wind projects, the potential exists for safety hazards to occur on the project site during construction and operational activities, resulting in a potentially significant impact. Potential safety issues associated with the project include site access, construction, security, heavy equipment transportation, traffic management, emergency procedures, and fire control.

To prevent unauthorized members of the public from entering the project site, temporary fences would be installed around the perimeter of the construction site and construction staging areas. In addition, notification signs would be placed at all entrances to the site. To reduce potential safety hazards to construction workers and the public, a safety assessment would be conducted for the project to describe potential safety issues associated with the project as well as prevention and contingency measures (Mitigation Measure HAZ-4a).

A health and safety program would be implemented to educate construction workers about the hazards associated with this particular project site and the safety measures that must be taken to prevent injury and hazardous conditions within the working environment (Mitigation Measure HAZ-1b). The program would identify requirements for temporary fencing around staging areas, storage yards, and excavation areas during construction, as well as measures to be taken during operation of the project to limit public access to hazardous facilities (e.g., permanent fencing, locked access). In addition, a medical aid kit would be kept on site at all times during construction.

By incorporating the project design features previously described, conducting a safety assessment for the project site (Mitigation Measure HAZ-4a), and developing a health and safety program (Mitigation Measure HAZ-1b), potential safety hazards to workers or the public during construction and operation would be mitigated. Identified impacts would be adverse; therefore, mitigation has been provided that would mitigate this impact. Under CEQA, impacts would be significant but can be mitigated to a level that is considered less than significant (Class II).

Proposed PROJECT

As described previously, the potential exists for safety hazards to occur on the project sites (including the Campo, Manzanita, and Jordan wind energy sites) during construction, operational, and decommissioning activities. Potential safety issues associated with the project include site access, construction, security, heavy equipment transportation, traffic management, emergency procedures, and fire control. Unauthorized access to the project site during construction, construction site conditions or activities that may result in injuries or hazardous conditions to construction workers, accidental spills and releases of hazardous materials, and public access to hazardous facilities during operation of the project may result in adverse impacts to construction workers and the general public. This would be a significant

impact. Measures to mitigate these impacts are described as follows for construction, operation, and decommissioning activities.

To reduce potential safety hazards to construction workers and the public, a safety assessment would be conducted for the project to describe potential safety issues associated with each Proposed PROJECT component, including issues such as site access, construction, safe work practices, security, heavy equipment transportation, traffic management, emergency procedures, and fire control, as well as prevention and contingency measures (Mitigation Measure HAZ-4a).

A worker health and safety plan would also be implemented to educate construction workers about the hazards associated with this particular project site and the safety measures that must be taken to prevent injury and hazardous conditions within the working environment (Mitigation Measure HAZ-1b). The program would establish an appropriate safety zone or setback of the project components from residents and occupied buildings, roads, ROWs, and other public access areas sufficient to prevent accidents from the operation of project components. The program would identify requirements for temporary fencing around staging areas, storage yards, and excavation areas during construction, as well as measures to be taken during operation of the project to limit public access to hazardous facilities (e.g., permanent fencing, locked access).

By conducting a safety assessment for each Proposed PROJECT site (Mitigation Measure HAZ-4a) and developing and implementing a Health and Safety Program (Mitigation Measure HAZ-1b), potential safety hazards to workers or the public during construction and operation would be mitigated. Identified impacts would be adverse; therefore, mitigation has been provided that would mitigate this impact. Under CEQA, impacts would be significant but can be mitigated to a level that is considered less than significant (Class II).

Impact HAZ-5: Impacts to soil or groundwater contamination could result from accidental spill or release of hazardous materials during operations and maintenance.

ECO Substation Project

During operation and maintenance of the project, hazardous materials (as defined under federal and state environmental laws) would be used and stored. Most of the chemicals and hazardous materials used for operations and maintenance activities are similar to those used in construction activities and summarized in Table D.10-2; however, the use and quantities of these materials for operations and maintenance would be considerably less than those used during construction activities. Furthermore, most of the hazardous chemicals used for operations and maintenance would be brought to and removed from the site by maintenance personnel rather than stored on site.

The following hazardous materials are typically found in substations and would be anticipated with the project:

- **Batteries –** The ECO and Boulevard substations would be equipped with lead-acid storage batteries and battery charging equipment to provide back-up power for monitoring, alarm, protective relaying, instrumentation and control, and emergency lighting. The batteries would be contained to prevent the release of battery acid in the event of a leak or rupture. In addition, an SPCC plan would address containment from a potential release from batteries. Potential impacts from the release of battery acid would therefore be less than significant.
- **Sulfur Hexafluoride Gas –** Sulfur hexafluoride (SF_6) is used as an insulator and arc suppressor in circuit breakers. SF_6 is inert and nontoxic, completely contained in the equipment, and not released under normal conditions. SF_6 is used in 60 kV or higher-rated circuit breakers and only released if there is a leak in the circuit breaker tank or a crack in the breaker. If either of these events occurs, an alarm would sound to the switching center, enabling operators to minimize the loss of SF_6. Potential impacts from the release of SF_6 would be less than significant.
- **Nitrogen Gas –** Cylinders of compressed nitrogen gas would be used to maintain a slight nitrogen pressure on oil-filled electrical equipment in order to keep out moisture, which can damage the equipment. The gas is inert and nontoxic. The potential hazard associated with nitrogen gas is associated with the high pressure of the gas in the cylinders, which can be decreased if a cylinder valve is damaged. The cylinders would be properly restrained to prevent accidental loss of cylinder valves, and transport of the cylinders would only occur when the cylinders have protective caps over the valves. Potential impacts from high-pressure nitrogen gas would therefore be less than significant.
- **Mineral Oil –** Transformers and other substation equipment would use nonconducting mineral oil for insulation or cooling. When oil-filled equipment is taken out of service, the oil must be disposed of as hazardous waste. The oil used at the substation would not contain PCB, is not a cancer-causing chemical, and is nontoxic. The only hazard this oil poses is associated with a potential spill or release to a waterway.

  As part of the ECO Substation, transformers containing a total of approximately 569,800 gallons of oil would be required (fourteen 500/230 kV transformers, three 230/138 kV transformers, four 34/230 kV transformers, and two 138/12 kV Station Light and Power transformers). In addition, as part of the ultimate configuration of the Boulevard Substation, two 138/12 kV transformers and one 138/69 kV transformer containing a total of approximately 25,660 gallons of oil would be required. The potential exists for a transformer to leak due to age, major natural events, or collisions from operations and maintenance equipment.

To reduce the potential for leaks during operations and maintenance activities, SDG&E would install localized containment around each transformer at the ECO and Boulevard substations. Localized containment would consist of concrete slabs and walls configured to contain the total volume of oil in the transformers. In addition, the containment pits would drain stormwater through filtered pipes, which would clog if oil comes into contact with the filter material, thereby preventing oil from leaving the containment pit. In addition, the SPCC plan would prevent, control, and contain oil that may leak from transformers.

The materials previously described would be transported, handled, and contained in accordance with all federal, state, and local laws regulating the management and use of hazardous materials. Consequently, the materials alone and use of these materials for their intended purpose during operation and maintenance would not pose a significant risk to the public or environment. However, accidental spills during routine or emergency maintenance or normal operation along the 138 kV transmission line corridor, ECO Substation, and Boulevard Substation Rebuild site could occur. These potential impacts would be significant.

By incorporating the project design features described previously to prevent spills and release of hazardous materials typically found in substations, and by developing and implementing a site-specific SPCC plan (Mitigation Measure HAZ-5a) and an HMBP (Mitigation Measure HAZ-5b), potential hazards to the public or the environment resulting from accidental spill or release of hazardous materials during operations and maintenance would be mitigated. Identified impacts would be adverse; therefore, mitigation has been provided that would mitigate this impact. Under CEQA, impacts would be significant but can be mitigated to a level that is considered less than significant (Class II).

MM HAZ-5a: Spill Prevention Control and Countermeasure Plan. Prior to the facility going online and becoming operational, the applicant or applicant's contractors shall prepare an SPCC plan to address proper procedures for storage, handling, spill response, and disposal of hazardous materials for the ongoing operation of the project. The SPCC plan shall meet all requirements outlined in Title 40 of the Code of Federal Regulations, Part 112 (40 CFR Part 112). The SPCC plan shall be reviewed and approved by the appropriate agency's engineering department and certified by a Registered Professional Engineer.

The SPCC plan shall identify operating procedures that the facility will implement to prevent oil spills; control measures installed to prevent oil from leaving the project site; and countermeasures to contain, clean up, and mitigate the effects of an oil spill. A copy of the plan shall be kept on site at the facility

and made available for review by the U.S. EPA Regional Administrator during normal business hours. The plan shall be amended as required under 40 CFR Part 112. The plan shall be reviewed, evaluated, and updated (if necessary) every 5 years.

MM HAZ-5b: Hazardous Materials Business Plan. Prior to the facility going online and becoming operational, the applicant or applicant's contractors shall prepare an HMBP in accordance with all related requirements in California Health and Safety Code, Chapter 6.95, Articles 1 and 2. The HMBP shall contain basic information about the location, type, and quantity of hazardous materials stored or used by the facility, as well as the health risks associated with each hazardous material. The HMBP shall include three components: an inventory and site map, emergency response plan, and employee training. The plan shall be reviewed and recertified every year and amended as required by California Health and Safety Code, Chapter 6.95, Articles 1 and 2.

Tule Wind Project

Operations and Maintenance

The project proposes the use of vehicle and equipment fuels, gear oil, hydraulic fluid, and coolant for the operation and maintenance of the wind turbines. These substances are used for routine activities and would be confined to the O&M building. In addition, minimal amounts of chemicals, such as lubricating oils and cleaners for the turbines and pesticides for weed control, would be used at the project site. Chemicals would be stored according to applicable requirements and regulations to limit the risk of adverse effects from chemical factors. Vehicles would be maintained by routine preventative maintenance to reduce the risk of oil, lubricant, and coolant leaks. The maintenance of vehicles is expected to be conducted off site.

The materials described previously would be transported, handled, and contained in accordance with all federal, state, and local laws regulating the management and use of hazardous materials. Consequently, the materials alone and use of these materials for their intended purpose during operation and maintenance would not pose a significant risk to the public or environment. However, accidental spills during routine or emergency maintenance or normal operation could occur. These potential impacts would be significant.

Implementation of an SPCC plan would identify where hazardous materials and waste would be stored on site, how spill prevention measures would be implemented, and where spill kits would be located (Mitigation Measure HAZ-5a). The SPCC plan would also identify the appropriate spill response action for each material or waste and procedures for notifying the appropriate authorities. In addition, an HMBP (Mitigation Measure HAZ-5b) would include basic information on the

location, type, and quantity of hazardous materials stored or used by the facility, as well as the health risks associated with each hazardous material.

Solid wastes produced during the operational phase would be limited to office-related waste generated by the maintenance employees at the O&M facility. Solid waste impacts are considered minimal and would be serviced by a local solid waste company. Potential exposure to hazardous waste resulting from sewer facilities is discussed in Section D.12, Water Resources.

Decommissioning

Substantial quantities of solid and industrial wastes would result if the wind project is decommissioned in the future. Waste would result from a substantial amount of broken concrete, fluids drained from turbine drive train components (e.g., hydraulic fluids, lubricating oils, coolants). Materials would be recycled when possible with turbine components sold as scrap metal and concrete used in other projects. Hazardous materials would be handled by a licensed service provider and disposed of at a permitted facility. As decommissioning activities are anticipated to have similar types of construction-related activities, all management plans, procedures, best management practices, and stipulations developed for the construction phase would be applied to similar decommissioning activities. The materials described previously would be transported, handled, and contained in accordance with all federal, state, and local laws regulating the management and use of hazardous materials. Consequently, the materials alone and use of these materials for their intended purpose would not pose a significant risk to the public or environment. However, accidental spills during routine or emergency maintenance or normal operation could occur. These potential impacts would be significant.

Development and implementation of an SPCC plan (Mitigation Measure HAZ-5a) and an HMBP (Mitigation Measure HAZ-5b), which further clarify and supersede APMs TULE-HAZ-1 and TULE-HAZ-2, would mitigate potential impacts of hazardous materials spills and releases during operation, maintenance, and decommissioning. Identified impacts would be adverse; therefore, mitigation has been provided that would mitigate this impact. Under CEQA, impacts would be significant but can be mitigated to a level that is considered less than significant (Class II).

ESJ Gen-Tie Project

No chemicals or hazardous materials (40 CFR 335) are anticipated to be produced, used, stored, transported, or disposed of as a result of operation of the ESJ Gen-Tie Project; therefore, operation of the project would create a less than significant hazard to the public or the environment through reasonably foreseeable upset or accidental conditions resulting from the release of hazardous materials and impacts would not be adverse.

As part of maintenance activities, minimal amounts of chemicals, such as pesticides for weed control, would be used at the project site. Chemicals would be stored according to applicable requirements and regulations to limit the risk of adverse effects from chemical factors. Maintenance vehicles would undergo routine preventative maintenance to reduce the risk of oil, lubricant, and coolant leaks. The maintenance of vehicles is expected to be conducted off site. The materials used for maintenance activities would be transported, handled, and contained in accordance with all federal, state, and local laws regulating the management and use of hazardous materials. Consequently, the materials alone and use of these materials for their intended purpose during maintenance would not pose a significant risk to the public or environment. However, accidental spills during routine or emergency maintenance or normal operation could occur. These potential impacts would be significant.

Development and implementation of an SPCC plan (Mitigation Measure HAZ-5a) and an HMBP (Mitigation Measure HAZ-5b) would mitigate potential impacts of hazardous materials spills and releases during maintenance activities. Identified impacts would be adverse; therefore, mitigation has been provided that would mitigate this impact. Under CEQA, impacts would be significant but can be mitigated to a level that is considered less than significant (Class II).

Proposed PROJECT

During operations and maintenance of the Proposed PROJECT, hazardous materials (as defined under federal and state environmental laws) would be used and stored. Most of the chemicals and hazardous materials used for operations and maintenance activities are similar to those used in construction activities. Although the use and quantities of these materials for operations and maintenance would likely be less than those used during construction activities, use and storage of hazardous materials during operation and maintenance of the Proposed PROJECT (including the Campo, Manzanita, and Jordan wind energy projects) may result in potential health and safety hazards to workers, residents, and the environment adjacent to the Proposed PROJECT components. These potential hazardous material impacts are associated with accidental spills during routine or emergency maintenance or normal operation and would be significant.

By developing and implementing a site-specific SPCC plan (Mitigation Measure HAZ-5a) and HMBP (Mitigation Measure HAZ-5b), potential hazards to the public or the environment resulting from accidental spill or release of hazardous materials during operation and maintenance of the Proposed PROJECT would be mitigated. Identified impacts would be adverse; therefore, mitigation has been provided that would mitigate this impact. Under CEQA, impacts would be significant but can be mitigated to a level that is considered less than significant (Class II).

Impact HAZ-6: Herbicides used for vegetation control around towers and other project facilities could result in adverse health effects to the public or maintenance workers.

ECO Substation Project

SDG&E typically applies herbicide and employs mechanical clearing equipment to prevent or remove vegetation in the ROW. The vegetation removal program, known as "pole brushing" clears all vegetation to mineral soil within a 10-foot radius around poles and structures as a fire prevention measure. The year-round program consists of chemical pole brushing (October through March) and mechanical pole brushing (April through September).

Pre-emergent, soil-applied herbicides are used during chemical pole brushing, and post-emergent, foliar-applied herbicides are used during mechanical pole brushing. Herbicide is applied to bare soil to prevent emergence of new growth, and to emergent plant materials. All herbicides are applied by hand sprayer to limit the chemical to within 10 feet of the poles or structures. SDG&E and its contractors follow an Herbicide Application Protocol to prevent environmental hazards and safety/health concerns resulting from the application of herbicides. This protocol is summarized in Table D.10-4, Sempra Energy Corporate Contractor Herbicide Application Protocol.

Table D.10-4
Sempra Energy Corporate Contractor Herbicide Application Protocol

No.	Item	Detail
1	***Herbicide Selection***	
	For each herbicide:	Use only herbicides on the Sempra Energy Approved List and according to any listed restrictions. From the list, use only the nonconflicting herbicides, herbicidal mixes, and dilutions that have been provided in the Pest Control Advisor's written recommendations and product manufacturer's directions, and approved by the Utility's Vegetation Management Team.
2	***Contract Personnel Qualifications***	
	Contract company:	The contract application company must have a valid and current pest control business license. The office of the contracting company responsible for supervision of the contract application of herbicides must have one or more persons in a supervisory position who hold a qualified applicator license with categories of herbicide applications supervised by that person. The contract application company must be registered in the county for the then current calendar year. The contracting company must have an effective, written injury and illness prevention program (IIPP) and other appropriate written environmental and safety programs. If the application is to be within the state of California, operations must comply with California Code of Regulations Title 3, Division 6, and other relevant state or local regulations and ordinances. For other states or locales, operations must comply with

Table D.10-4 (Continued)

No.	Item	Detail
		all national and applicable state and local regulations and ordinances. Call Sempra Energy Environmental Services at (619) 696-4672 for assistance.
	Contract Field Crew Supervisor:	The supervisory person(s) must be familiar with the applications sites, and at a minimum, routinely monitor the application of herbicides at sites under his/her responsibility.
	Applicators:	If the application is within the state of California, each field applicator must have documented training pursuant to California Code of Regulations Title 3, Section 6700 et seq. (3 CCR 6700 et seq.), and Title 8, Section 5194 (8 CCR 5194), and other relevant state and local environmental and safety ordinances. For other states or locales, applicators must have documented training complying with all national, state, or local regulations and ordinances. Call Sempra Energy Environmental Services at (619) 696-4672 for assistance.
3	***Application Mixture***	
	Application amount per acre:	Use application amount provided in Pest Control Advisor's written recommendations and product manufacturer's directions and approved by the Utility's Vegetation Management Team.
	Mixing:	Mix according to Pest Control Advisor's written recommendations, as approved by the Utility's Vegetation Management Team, to achieve desired application rates.
4	***Application Protocols***	
4a	***Pre-Field Procedures***	
	Use and notification:	Use only herbicides on the Sempra Energy Approved List. From the list, use only the nonconflicting herbicides, herbicidal mixes, and dilutions that have been provided in the Pest Control Advisor's written recommendations and product manufacturer's directions, any more restrictive contractor application protocols or checklists, in accordance with any Sempra Energy Approved Herbicide List restrictions and approved by the Utility's Vegetation Management Team. Target areas for possible herbicide application must be pre-approved by the Utility Vegetation Management Team and Sempra Energy's Land Planning and Natural Resources Section. Follow the Utility-approved contract clauses and protocols for customer notification.
	Applicator Crew Hazard Information:	Provide Material Safety Data Sheets (MSDS) for all crew hazardous material and herbicide inventories. Provide all label instructions, Sempra Energy Approved Herbicide List and Pest Control Advisor recommendations. Provide hospital location information. Maintain an up-to-date set of the previous information in each crew vehicle.
	Protective Measures and Emergency Supplies:	Provide safe work practices and personal protective equipment (PPE) for hazards associated with work, and a means to clean and store PPE. Provide emergency supplies to flush or treat injuries or hazardous material contact.
	Mixing and Loading Vehicles:	Mixing and loading must be conducted prior to entering the field. Chemical transfer from one container to another should be minimized, but when necessary should be conducted on an impermeable surface such as a truck bed, drain pan, or drip pans to prevent spills or leaks from contaminating the ground surface. Check that each vehicle loaded with chemicals is equipped with spill kit(s) that are capable of containing the volume of the largest container on the vehicle. Also, ensure that each vehicle or crew has a handheld wind velocity meter or the equivalent.

Table D.10-4 (Continued)

No.	Item	Detail
	Minimize chemical usage:	Plan to use the minimal amount of chemical that is adequate to do the job(s) at each location and minimize overlap of spray areas. Utilize a spray nozzle designated to reduce drift. Follow manufacturer's direction of use of spray equipment. For small, manual (plastic bottle) spray applications, spray only where effective and do not over spray or over wet the area.
	Equipment calibration/inspection:	Ensure spray equipment is calibrated and check all equipment prior to entering the field to ensure proper functioning. Improperly functioning equipment can result in spills, leaks, and misapplication of spray.
	Safety Equipment Material Safety Data Sheets, Chemical Emergency Equipment:	Provide splash protective clothing/footwear, headgear, face/eye protection, and specific chemical resistive gloves to protect equipment/heat stress trained employees. Provide the means to clean and/or dispose of protective equipment and cleaning material after equipment use. Provide MSDS for all materials to be used on the job for each vehicle or crew. Provide chemical splash/spill emergency wash supplies for each vehicle or crew.
4b	***In-Field Initial Procedure:***	
	Prior to applying ANY chemical, you must:	Use the Physical and Climatic Target Area Evaluation Form to evaluate target location prior to application. Check the weather daily before application. (Note: a detailed, 24-hour, recorded weather message may be accessed by calling (619) 289-1212.)
	Setup and mechanical:	At each target area, locate the work setup area to minimize environmental disturbance. If applicable to the particular purpose and type of activity of the herbicide (primarily for pre-emergent herbicides), mechanically remove appropriate vegetation in the target area prior to application.
4c	***Application Prohibitions***	
	Procedures to avoid humans and domestic animals:	Do NOT allow herbicides to contact humans or domestic animals. Do NOT apply to areas that they routinely contact such as yards or pens except as allowed by label instructions and landowner consent. Do NOT allow herbicides to contact or drift onto food crops, drinking water, or food or feed storage areas.
	Procedures to avoid harming wildlife and valued vegetation:	Do NOT spray herbicides directly on any wildlife species. If nests are observed within the target area, contact Sempra Energy Land Planning and Natural Resources at (619) 696-2392 prior to conducting the work. If dens or burrows are observed in a target area, observe the following restrictions: (a) Use only products identified as nontoxic to birds and small mammals during the period March 1 through August 31. If applying herbicides to target areas located where domesticated animals graze, apply the herbicide strictly according to label restrictions and precautions and according to any Department of Agriculture regulations. Do NOT spray herbicide or allow herbicide to drift outside the target area.
	Procedures to avoid harming aquatic wildlife and valued vegetation and to avoid chemical runoff:	Do NOT spray herbicides directly into roadside drainage channels unless the channel is part of a pole target area and there is no running or standing water. Apply only to the target area of the dry drainage channel. Do NOT apply within 50 feet of the edge of any surface water body <u>when water is present</u> (as measured from the "bank" and if a "bank" is present, to the edge of the target area). Never apply directly to a surface water body or to the water side of a bank of a surface water body. This direct application prohibition applies to the dry bed of a

Table D.10-4 (Continued)

No.	Item	Detail
		seasonal water body. A surface water body includes: –Any waters of the U.S. or California such as creeks, streams, rivers, lakes, or ocean –Any intertidal area, estuary, marsh, or wetland –Any natural drainage channels containing standing or running water, or not a target area –Any irrigation ditches or storm drain inlets. Do NOT apply to vernal pool and mima mound complex areas as defined by Sempra Energy Land Planning and Natural Resources. Do not apply within 50 feet of any well head, including abandoned wells. Do not generally apply to impermeable ground surfaces such as granite or pavement, but use a spot application technique, just spraying actual or potential vegetation growth spots.
	Procedures to avoid chemical runoff and contaminating non-target areas:	Do NOT apply if it is "actively raining" (more than mist or light rain), being irrigated, or rain is imminent (within application drying time). Do NOT use herbicides until "storm event" or active irrigation has abated to avoid contaminating runoff. (A "storm event" is when rainfall is sufficient to cause runoff.") Do NOT apply if the target area soil has puddles or standing water. Do NOT apply until the soil becomes drier. For *FOLIAR (post-emergent) APPLICATIONS:* Do NOT apply herbicide spray during rain or when rain is imminent. Do NOT apply to any non-vegetated (bare) areas of a sloped target area with a slope steeper than 1 foot: 1 foot (vertical rise: horizontal distance). For target areas with a slope greater than 1 foot: 4 feet but less than or equal to 1 foot: 1 foot, construct a 4- to 6-foot mineral soil berm outside the down slope half-circle pe[r]imeter prior to spraying any part of the targeted area. Do NOT lay applicator wand on the ground or leave it unattended.
	Procedures to avoid chemical drift onto non-target areas:	Do NOT apply herbicides when wind velocity exceeds 10 miles per hour (mph) as measured at chest height (approximately 5 feet from ground surface). Use handheld wind velocity meter and record the wind velocity on your daily pesticide application report. If you observe the spray being carried sideways or floating up, or off the target area, STOP spraying and re-evaluate wind conditions. Do NOT spray herbicides at this location until the condition causing drift has abated. Set pressure gauges prior to applying herbicides. Use the pressure range recommended by the manufacturer of the specific spray nozzle but DO NOT exceed 40 pounds per square inch (psi). Apply the herbicides at a designated height above the soil surface recommended by the manufacturer of the specific nozzle used but DO NOT EXCEED 18 inches maximum.
4d	***In-Field Application Procedures***	
	Complete all pre-application check:	Apply herbicides ONLY when the accompanying Sempra Energy Physical and Climate Target Area Evaluation and any additional contractor site evaluation checks are acceptable. Record any prohibited areas and adverse conditions encountered.
	Procedures to avoid additional environmental impacts:	Do NOT scatter or stack brushed vegetation or chipped waste in any surface water body, including storm drains, drainage, and drainage inlets where runoff may carry the material into a water body. Remove woody vegetation waste as soon as possible from the site. Do NOT fuel, clean, or maintain any vehicles or equipment within 100 feet of any water body. Any maintenance performed in the field should be minimized, but when

Table D.10-4 (Continued)

No.	Item	Detail
		necessary should be conducted on an impermeable surface such as a truck bed, drain pan, or drip pans to prevent spills or leaks from contaminating the ground surface. All solid waste and rubbish should be removed from each location. Avoid tracking mud from vehicles or equipment when re-entering paved public roadways from off-road, whenever possible. If sediment soil is tracked onto a paved roadway, use a shovel or broom to sweep it up prior to leaving the location or at the end of the workday. Swept materials should be disposed of in a vegetated area nearby and not into drainage channels, gutters, or water bodies. NEVER dump any excess pesticides on the ground, on pavement, in storm drains, in drainage ditches, in sanitary sewers, or use on non-targeted areas. Excess materials and empty containers must be returned to the contractor's yard.
5	***Post-Application Protocols***	
	Protocol for disposing of any water used to clean application equipment:	Spray tanks to be cleaned at the end of the day must be cleaned in the employer's yard. Do NOT drain wash water from equipment cleaning onto the ground. All wash waters must be reused.
	Protocol for unused herbicides:	Storage and disposal should be handled according to the manufacturer's label. Unused herbicide spray must be used appropriately at another appropriate target location or must be returned to your employer's yard for recycling. Again, NEVER dump any excess pesticide onto a roadside, storm drain, drainage ditch, sewer, ground, or anywhere else. Excess materials and empty containers must be returned to the contractor's yard.
	Post-application report form:	Fill out all required forms describing application performed for each site.
6	***Environmental Accident Procedures***	
	For responding to a spill:	Apply an absorbent material, wait for 5 to 10 minutes, then sweep or shovel material along with affected media (soil, paper, wood) into a hazardous material holding container (drum or bag). Do NOT wash with water. Properly label the container with name of pesticide, toxicity category, name of manufacturer, and manufacturer phone number. Call Utility emergency contacts: Sempra Energy Hazardous Waste Management (619) 696-4925.
	For spray application to prohibited areas:	Report any accidental spray of any prohibited physical features or wildlife immediately to your supervisor. The supervisor should report any incident to SDG&E Vegetation Control Management as soon as feasible but no later than 24 hours from discovery.

Source: SDG&E 2009, Attachment 3-E.

The herbicides used by SDG&E and the associated toxicity and persistence in soil for each herbicide are outlined in the Sempra Energy Toxicology Report, dated August 8, 2000. The toxicology report described the characteristics of 18 herbicides proposed for use by SDG&E. All of the herbicides proposed for use for the project would be applied in accordance with the Herbicide Application Protocol provided in Table D.10-4.

Herbicide application during operation and maintenance of the project could potentially impact personnel applying the chemical, maintenance workers in the ROW, or members of the public that enter the affected ROW areas. The potential exposure of workers applying herbicide would be minimized by adhering to manufacturer's recommendations for mixing and applying the

chemicals, and for use of protective clothing and respiratory protection. Maintenance workers in the ROW may be exposed to residual herbicides if the soil application was recent and excessive dust was inhaled. Public accessing of the ROW may cause dust to become airborne and inhaled.

Considering the application of SDG&E's protocols described previously and the general low toxicity of the proposed herbicides, their restricted use at project structures, and the nonroutine access of these areas by maintenance workers and the general public, impacts associated with herbicide use for vegetation control would not be adverse. Under CEQA, impacts would be considered less than significant (Class III).

Tule Wind Project

Similar to the ECO Substation Project, herbicides and mechanical clearing equipment would be used to prevent or remove vegetation in the ROW, including all vegetation to mineral soil within a 10-foot radius around poles and structures as a fire prevention measure (i.e., pole brushing). Herbicide application during operation and maintenance of the project could potentially impact personnel applying the chemical, maintenance workers in the ROW, or members of the public that enter the affected ROW areas. The potential exposure of workers applying herbicide would be minimized by adhering to manufacturer's recommendations for mixing and applying the chemicals, and for use of protective clothing and respiratory protection. Maintenance workers in the ROW may be exposed to residual herbicides if the soil application was recent and excessive dust was inhaled. Public accessing of the ROW may cause dust to become airborne and inhaled. Due to the project's adherence to herbicide application protocols similar to those employed for the ECO Substation Project, the general low toxicity of the anticipated herbicides, restricted use of herbicides at project structures, and the nonroutine access of these areas by maintenance workers and the general public, impacts associated with herbicide use for vegetation control would not be adverse. Under CEQA, impacts would be considered less than significant (Class III).

ESJ Gen-Tie Project

Use of herbicides for vegetation removal under the ESJ Gen-Tie Project would be similar to the ECO Substation and Tule Wind projects. Application of herbicides would follow similar protocols and be of the same general low toxicity. In addition, the potential exposure of workers applying herbicides would be minimized by adhering to manufacturer's recommendations for mixing and applying the chemicals, and for use of protective clothing and respiratory protection. Due to the project's adherence to herbicide application protocols similar to those employed for the ECO Substation Project, the general low toxicity of the anticipated herbicides, restricted use of herbicides at project structures, and the nonroutine access of these areas by maintenance workers and the general public, impacts associated with

herbicide use for vegetation control would not be adverse. Under CEQA, impacts would be considered less than significant (Class III).

Proposed PROJECT

Herbicide application during operation and maintenance of the Proposed PROJECT including the Campo, Manzanita, and Jordan wind energy projects may potentially impact personnel applying the chemical, maintenance workers in the ROW, or members of the public that enter the affected ROW areas. Maintenance workers in the ROW may be exposed to residual herbicides if the soil application was recent and excessive dust was inhaled. Public accessing of the ROW may cause dust to become airborne and inhaled. The potential exposure of workers applying herbicides would be minimized by adhering to manufacturer's recommendations for mixing and applying the chemicals, and for use of protective clothing and respiratory protection. Due to the Proposed PROJECT's adherence to herbicide application protocols (although specific project-level information has not been developed the Campo, Manzanita, and Jordan wind energy projects are also expected to adhere to established protocols), the general low toxicity of the anticipated herbicides, restricted use of herbicides at project structures, and the nonroutine access of these areas by maintenance workers and the general public, impacts associated with herbicide use for vegetation control would not be adverse. Under CEQA, impacts would be considered less than significant (Class III).

Impact HAZ-7: Undue risks could result due to the breaking of a rotor blade, also called "blade throw."

Tule Wind Project

A primary safety hazard that may occur during operation of a wind turbine project is breaking of a rotor blade, which is typically referred to as a "blade throw." Breaking of a rotor blade or other similar damage may occur as a result of rotor over speed, although such an occurrence typically happens with older and smaller turbines, as these older turbine designs used lighter blades and rotated at much higher speeds compared to modern designs. Material fatigue can also cause a blade to break. Modern turbine designs employ fail-safe, redundant braking mechanisms; slower rotational speed; and heavier blades that greatly reduce this potential safety hazard.

The project would implement the latest in modern wind turbine technology, which includes a safety system ensuring that the wind turbine shuts down immediately at the onset of mechanical disorders, such as nacelle vibration, over speed, grid electrical disorders, or loss of grid power. The turbine is protected by two independent brake systems: an aerodynamic brake affected by blade pitch control, and a mechanical brake. The proposed turbines would be state-of-the-art models, made from glass-reinforced fiber with steel internal components. Fully enclosed steel

tubular towers would support the turbines. The foundations would be steel-reinforced concrete and would utilize either spread footings or rock anchors depending on existing soil conditions.

It is difficult to predict the potential trajectory of a rotor blade without undue speculation; however, with improved engineering design and quality control, the occurrence of blade throw is unlikely. A turbine rotor and the nacelle (which includes the electrical generator) would be mounted on top of each turbine tower, for a rotor hub height of up to 328 feet. Computer systems would be installed in each turbine and would routinely perform self-diagnostic tests and would allow a remote operator to set new operating parameters, perform system checks, and ensure turbines are operating at peak performance. The results of these tests and system checks would be made available to the appropriate agency upon request. As a standard safety precaution, turbines would automatically shut down if sustained winds in the project area reach 50 miles per hour or gusts reach above 56 miles per hour. Moreover, the project would ensure that a sufficient safety zone or setback exists from wind turbine generators to residents and occupied buildings, any structures, roads, transmission lines, and other public access areas as provided for in APM TULE-PHS-3 and superseded by Mitigation Measure HAZ-6.

Considering the design of the wind turbines, braking mechanisms and other safety controls described previously, and implementation of appropriate safety zones and setbacks (Mitigation Measure HAZ-6), potential impacts related to blade throw would be mitigated. Identified impacts would be adverse; therefore, mitigation has been provided that would mitigate this impact. Under CEQA, impacts would be significant but can be mitigated to a level that is considered less than significant (Class II).

MM HAZ-6: Wind Turbine Safety Zone and Setbacks. Prior to approval of final construction plans and as part of the Health and Safety Program for the project as described in Mitigation Measure HAZ-1b, the applicant shall establish a safety zone or setback for wind turbine generators from residents and occupied buildings, roads, ROWs, transmission lines, and other public access areas sufficient to prevent accidents from the operation of wind turbine generators. A plan detailing the proposed setbacks and safety zone shall be submitted to the lead jurisdictional agencies (as described in the Mitigation Monitoring and Reporting Program) for review and approval at least 30 days prior to construction. The plan shall include a graphic depicting each turbine and the associated buffer safety zone.

The industry standard safety setback is 1.25 times the total height for wind turbines and 1.0 times the total height for towers that do not contain moving parts. The safety setback shall be measured from the center of the wind turbine or tower to the edge of the ROW or easement, or if no ROW or easement is established, to

the line or structure in question. The applicant shall ensure that all towers and structures comply with appropriate safety zones and setbacks. The applicant or applicant's contractor shall designate an environmental field representative who shall be on site to observe, enforce, and document adherence to approved setbacks and safety zones.

Operation of the Campo, Manzanita, and Jordan wind energy projects would also pose a potential risk for blade throw impacts however, similar to the Tule Wind Project, applicants are expected to implement the latest in modern wind turbine technology to minimize these risks. Therefore, impacts are anticipated to be similar to those identified for the Tule Wind Project.

Impact HAZ-8: Undue risks could result due to the potential collapse of a wind turbine.

Tule Wind Project

Tower collapse is unlikely because the towers and foundations are designed to withstand extreme earthshaking, 100-year flood erosion, and high winds. The project facilities are housed in metal-contained, nonflammable structures. The foundations for the steel tubular towers supporting the turbines would be steel-reinforced concrete and would utilize either spread footings or rock anchors, depending on existing soil conditions.

As described previously in regard to blade throw, the project would ensure that a sufficient safety zone or setback exists from any structures, roads, transmission lines, and other public access areas where there may be risk or hazard from a tower collapse (Mitigation Measure HAZ-6). The industry standard safety setback is 1.25 times the total height for wind turbines and 1.0 times the total height for towers that do not contain moving parts. The safety setback is measured from the center of the wind turbine or tower to the edge of the ROW or easement, or if no ROW or easement is established, to the line or structure in question.

With the proposed design and setback features that are part of the project and described previously under Impact HAZ-7, impacts associated with the potential collapse of a wind turbine would not be adverse. Under CEQA, impacts would be considered less than significant (Class III).

Operation of the Campo, Manzanita, and Jordan wind energy projects also pose an unlikely potential tower collapse risk however, similar to the Tule Wind Project, applicants are expected to ensure that sufficient safety zones or setbacks are maintained from any structures, roads, transmission lines, and other public access areas where there may be risk or hazard from a tower collapse. Therefore, impacts are anticipated to be similar to those identified for the Tule Wind Project.

D.10.4 ECO Substation Project Alternatives

Table D.10-5summarizes the impacts and classification of the impacts under CEQA that have been identified for the ECO Substation Project alternatives.

Table D.10-5
Hazards and Public Health/Safety Impacts Identified for
ECO Substation Project Alternatives

Impact No.	Description	Classification
ECO Substation Alternative Site		
ECO-HAZ-1	Impacts to soil or groundwater could result from accidental spill or release of hazardous materials due to improper handling or storage of hazardous materials during construction activities.	Class II
ECO-HAZ-2	Residual pesticides and/or herbicides could be encountered during grading or excavation.	Class II
ECO-HAZ-3	Previously unknown soil and/or groundwater contamination could be encountered during grading or excavation.	Class II
ECO-HAZ-4	Potential safety hazards could adversely affect construction workers or the general public accessing the project site during construction, operation, or decommissioning.	Class II
ECO-HAZ-5	Impacts to soil or groundwater could result from accidental spill or release of hazardous materials during operations and maintenance.	Class II
ECO-HAZ-6	Herbicides used for vegetation control around towers and other project facilities could result in adverse health effects to the public or maintenance workers.	Class III
ECO Partial Underground 138 kV Transmission Route Alternative		
ECO-HAZ-1	Impacts to soil or groundwater could result from accidental spill or release of hazardous materials due to improper handling or storage of hazardous materials during construction activities.	Class II
ECO-HAZ-2	Residual pesticides and/or herbicides could be encountered during grading or excavation.	Class II
ECO-HAZ-3	Previously unknown soil and/or groundwater contamination could be encountered during grading or excavation.	Class II
ECO-HAZ-4	Potential safety hazards could adversely affect construction workers or the general public accessing the project site during construction, operation, or decommissioning.	Class II
ECO-HAZ-5	Impacts to soil or groundwater could result from accidental spill or release of hazardous materials during operations and maintenance.	Class II
ECO-HAZ-6	Herbicides used for vegetation control around towers and other project facilities could result in adverse health effects to the public or maintenance workers.	Class III
ECO Highway 80 138 kV Transmission Route Alternative		
ECO-HAZ-1	Impacts to soil or groundwater could result from accidental spill or release of hazardous materials due to improper handling or storage of hazardous materials during construction activities.	Class II
ECO-HAZ-2	Residual pesticides and/or herbicides could be encountered during grading or excavation.	Class II
ECO-HAZ-3	Previously unknown soil and/or groundwater contamination could be encountered during grading or excavation.	Class II
ECO-HAZ-4	Potential safety hazards could adversely affect construction workers or the general public accessing the project site during construction, operation, or decommissioning.	Class II
ECO-HAZ-5	Impacts to soil or groundwater could result from accidental spill or release of hazardous materials during operations and maintenance.	Class II
ECO-HAZ-6	Herbicides used for vegetation control around towers and other project facilities could result in adverse health effects to the public or maintenance workers.	Class III

Table D.10-5 (Continued)

Impact No.	Description	Classification
ECO Highway 80 Underground 138 kV Transmission Route Alternative		
ECO-HAZ-1	Impacts to soil or groundwater could result from accidental spill or release of hazardous materials due to improper handling or storage of hazardous materials during construction activities.	Class II
ECO-HAZ-2	Residual pesticides and/or herbicides could be encountered during grading or excavation.	Class II
ECO-HAZ-3	Previously unknown soil and/or groundwater contamination could be encountered during grading or excavation.	Class II
ECO-HAZ-4	Potential safety hazards could adversely affect construction workers or the general public accessing the project site during construction, operation, or decommissioning.	Class II
ECO-HAZ-5	Impacts to soil or groundwater could result from accidental spill or release of hazardous materials during operations and maintenance.	Class II
ECO-HAZ-6	Herbicides used for vegetation control around towers and other project facilities could result in adverse health effects to the public or maintenance workers.	Class III

D.10.4.1 ECO Substation Alternative Site

Environmental Setting/Affected Environment

This alternative involves shifting the proposed ECO Substation site 700 feet to the east. The environmental setting described in Sections D.10.1 and D.10.2 for the proposed ECO Substation Project is the same for this alternative.

Environmental Impacts/Environmental Effects

Direct and Indirect *(Note: cumulative effects are addressed in Section F of this EIR/EIS)*

Impacts HAZ-1 through HAZ-6: The findings for Impacts HAZ-1 through HAZ-6 would reflect impact findings previously discussed in Section D.10.3.3 for the proposed ECO Substation Project.

Construction activities on the project site would involve the use and storage of the same hazardous materials as those identified for the proposed ECO Substation Project (see Section D.10.4.3, Impact HAZ-1). Developing an HMMP (Mitigation Measure HAZ-1a), a Health and Safety Program (Mitigation Measure HAZ-1b), and a Waste Management Plan (Mitigation Measure HAZ-1c), as well as implementing Mitigation Measure HAZ-1d and APMs ECO-HAZ-2 and ECO-HAZ-3, related to demolition of the existing Boulevard Substation and surrounding buildings would reduce the likelihood of improper handling, storage, or release of hazardous substances during demolition and construction activities and would mitigate potential hazards to the public or the environment resulting from foreseeable upset or accidental conditions related to hazardous materials. Identified impacts would be adverse; therefore, mitigation has been provided that would mitigate this impact. Under CEQA, impacts would be significant but can be mitigated to a level that is considered less than significant (Class II).

Use and storage of hazardous materials during operation and maintenance of the project would result in potential health and safety hazards to workers, residents, and the environment adjacent to the 138 kV transmission line and ECO and Boulevard substations (see Section D.10.4.3, Impact HAZ-5). Developing and implementing a site-specific SPCC plan (Mitigation Measure HAZ-5a) and an HMBP (Mitigation Measure HAZ-5b) would reduce potential hazards to the public or the environment resulting from accidental spill or release of hazardous materials during operations and maintenance. Identified impacts would be adverse; therefore, mitigation has been provided that would mitigate this impact. Under CEQA, impacts would be significant but can be mitigated to a level that is considered less than significant (Class II).

As under the proposed ECO Substation Project, the presence of residual pesticides and herbicides is not anticipated, and no existing hazardous materials sites are located on or near the ECO Substation site; therefore, it is unlikely that hazardous materials would be encountered during excavation at the site, with the exception of lead, which may exist on the informal shooting ranges. As discussed in Section D.10.3.3 under Impacts HAZ-2 and HAZ-3, implementation of Mitigation Measures HAZ-2a, HAZ-2b, and HAZ-3 would reduce potential hazards to the public or the environment resulting from previously unknown soil and/or groundwater contamination or residual pesticides and herbicides encountered during grading activities. Identified impacts would be adverse; therefore, mitigation has been provided that would mitigate this impact. Under CEQA, impacts would be significant but can be mitigated to a level that is considered less than significant (Class II).

Potential safety hazards to workers or the public during construction and operation would be the same as under the proposed ECO Substation Project (see Section 10.3.3.3, Impact HAZ-4). Implementation of Mitigation Measures HAZ-4a, HAZ-4b, and HAZ-1b, as discussed in Section D.10.3.3 would reduce potential safety hazards. Identified impacts would be adverse; therefore, mitigation has been provided that would mitigate this impact. Under CEQA, impacts would be significant but can be mitigated to a level that is considered less than significant (Class II).

Similar to the proposed ECO Substation Project, SDG&E would apply herbicides and employ mechanical clearing equipment to prevent or remove vegetation in the ROW (i.e., “pole brushing”) under this alternative (see Section D.10.3.3, Impact HAZ-6). Considering the application of SDG&E’s protocols and the general low toxicity of the proposed herbicides, their restricted use at project structures, and the nonroutine access of these areas by maintenance workers and the general public, impacts associated with herbicide use for vegetation control would not be adverse. Under CEQA, impacts would be considered less than significant (Class III).

D.10.4.2 ECO Partial Underground 138 kV Transmission Route Alternative

Environmental Setting/Affected Environment

Under this alternative, the proposed 138 kV transmission line from Milepost (MP) 9 to the rebuilt Boulevard Substation would be installed underground (instead of on overhead transmission poles as under the proposed ECO Substation Project). This alternative would follow the same route as the proposed ECO Substation Project; therefore, the environmental setting described in Sections D.10.1 and D.10.2 for the proposed ECO Substation Project would be the same for this alternative.

Environmental Impacts/Environmental Effects

Direct and Indirect (*Note: cumulative effects are addressed in Section F of this EIR/EIS)*

Impacts HAZ-1 through HAZ-6: Under this alternative, open trenching operations would be required to underground approximately 4 miles of the proposed 138 kV transmission line between MP 9 and the rebuilt Boulevard Substation, as opposed to constructing the line overhead on transmission line poles. As a result, construction activities under this alternative would differ marginally from the proposed ECO Substation Project, as this additional trenching activity and soil disturbance would slightly increase the potential to encounter contaminated soils and/or groundwater.

Construction, operation, and maintenance activities on the project site would involve the use and storage of the same hazardous materials as those identified for the proposed ECO Substation Project (see Section D.10.4.3, Impacts HAZ-1 and HAZ-5). Use and storage of hazardous materials during operation and maintenance of the project would result in potential health and safety hazards to workers, residents, and the environment adjacent to the 138 kV transmission line and ECO and Boulevard substations. These potential hazardous material impacts are associated with accidental spills during routine or emergency maintenance or normal operation along the 138 kV transmission line corridor, ECO Substation, and Boulevard Substation rebuild site. These potential impacts would be significant.

Implementation of Mitigation Measures HAZ-1a, HAZ-1b, HAZ-1c, along with Mitigation Measure HAZ-1d, and APMs ECO-HAZ-2 and ECO-HAZ-3, related to demolition of the existing Boulevard Substation would reduce the likelihood of improper handling, storage, or release of hazardous substances during construction and would mitigate potential hazards to the public or the environment resulting from foreseeable upset or accidental conditions related to hazardous materials. Furthermore, implementation of a site-specific SPCC plan (Mitigation Measure HAZ-5a) and an HMBP (Mitigation Measure HAZ-5b) would reduce potential hazards to the public or the environment resulting from accidental spill or release of hazardous materials during operations

and maintenance. Identified impacts would be adverse; therefore, mitigation has been provided that would mitigate this impact. Under CEQA, impacts would be significant but can be mitigated to a level that is considered less than significant (Class II).

Although the presence of residual pesticides and herbicides is not anticipated, and no existing hazardous materials sites are located on or near the ECO Substation site, potential hazards to the public or the environment would result from previously unknown soil and/or groundwater contamination or residual pesticides and herbicides encountered during grading activities, with the exception of lead, which may exist on the informal shooting ranges (see Section D.10.3.3 under Impact HAZ-2 and HAZ-3). Implementation of Mitigation Measures HAZ-2a, HAZ-2b, and HAZ-3 would mitigate these impacts. Identified impacts would be adverse; therefore, mitigation has been provided that would mitigate this impact. Under CEQA, impacts would be significant but can be mitigated to a level that is considered less than significant (Class II).

Potential safety hazards to workers or the public during construction and operation would be the same as under the proposed ECO Substation Project (see Section 10.3.3.3, Impact HAZ-4). Implementation of Mitigation Measures HAZ-4a, HAZ-4b, and HAZ-1b, as discussed in Section D.10.3.3, would reduce potential safety hazards. Identified impacts would be adverse; therefore, mitigation has been provided that would mitigate this impact. Under CEQA, impacts would be significant but can be mitigated to a level that is considered less than significant (Class II). As under the proposed ECO Substation Project, SDG&E would apply herbicides and employ mechanical clearing equipment to prevent or remove vegetation in the ROW (i.e., "pole brushing") under this alternative. As discussed in Section D.10.3.3, Impact HAZ-6, impacts associated with herbicide use for vegetation control would not be adverse. Under CEQA, impacts would be considered less than significant (Class III).

D.10.4.3 ECO Highway 80 138 kV Transmission Route Alternative

Environmental Setting/Affected Environment

This alternative would be the same as the proposed ECO Substation Project, with the exception of an alternate Old Highway 80 138 kV transmission line route. From the intersection of the SWPL transmission line and Old Highway 80 (approximately 1.5 mile northwest of Jacumba), this alternative would expand and utilize an existing utility ROW and overbuild an existing distribution line for approximately 4.8 miles along Highway 80 to the rebuilt Boulevard Substation. The environmental setting described in Sections D.10.1 and D.10.2 for the proposed ECO Substation Project would be the same for this alternative.

Environmental Impacts/Environmental Effects

Direct and Indirect *(Note: cumulative effects are addressed in Section F of this EIR/EIS)*

Impacts HAZ-1 through HAZ-6: The findings for Impacts HAZ-1 through HAZ-6 would reflect impact findings previously discussed in Section D.10.3.3 for the proposed ECO Substation Project.

Construction, operation, and maintenance activities on the project site would involve the use and storage of the same hazardous materials as those identified for the proposed ECO Substation Project (see Section D.10.4.3, Impacts HAZ-1 and HAZ-5). Use and storage of hazardous materials during operation and maintenance of the project would result in potential health and safety hazards to workers, residents, and the environment adjacent to the 138 kV transmission line and ECO and Boulevard substations. These potential hazardous material impacts are associated with accidental spills during routine or emergency maintenance or normal operation along the 138 kV transmission line corridor, ECO Substation, and Boulevard Substation Rebuild site. These potential impacts would be significant.

Implementation of Mitigation Measures HAZ-1a, HAZ-1b, HAZ-1c, along with Mitigation Measure HAZ-1d and APMs ECO-HAZ-2 and ECO-HAZ-3, related to demolition of the existing Boulevard Substation would reduce the likelihood of improper handling, storage, or release of hazardous substances during construction and would mitigate potential hazards to the public or the environment resulting from foreseeable upset or accidental conditions related to hazardous materials. Furthermore, implementation of a site-specific SPCC plan (Mitigation Measure HAZ-5a) and HMBP (Mitigation Measure HAZ-5b) would reduce potential hazards to the public or the environment resulting from accidental spill or release of hazardous materials during operations and maintenance. Identified impacts would be adverse; therefore, mitigation has been provided that would mitigate this impact. Under CEQA, impacts would be significant but can be mitigated to a level that is considered less than significant (Class II).

The presence of residual pesticides and herbicides is not anticipated, and no existing hazardous materials sites are located on or near the ECO Substation site; therefore, it is unlikely that hazardous materials would be encountered during excavation at the site, with the exception of lead, which may exist on the informal shooting ranges (see Section D.10.3.3 under Impact HAZ-2 and HAZ-3). Potential hazards to the public or the environment would result from previously unknown soil and/or groundwater contamination or residual pesticides and herbicides encountered during grading activities; therefore, implementation of Mitigation Measures HAZ-2a, HAZ-2b, and HAZ-3 would be required. Identified impacts would be adverse; therefore, mitigation has been provided that would mitigate this impact. Under CEQA, impacts would be significant but can be mitigated to a level that is considered less than significant (Class II).

Potential safety hazards to workers or the public during construction and operation would be the same as under the proposed ECO Substation Project (see Section 10.3.3.3, Impact HAZ-4). Implementation of Mitigation Measures HAZ-4a, HAZ-4b, and HAZ-1b, as discussed in Section D.10.3.3, would reduce potential safety hazards. Identified impacts would be adverse; therefore, mitigation has been provided that would mitigate this impact. Under CEQA, impacts would be significant but can be mitigated to a level that is considered less than significant (Class II).

SDG&E would apply herbicides and employ mechanical clearing equipment to prevent or remove vegetation in the ROW (i.e., "pole brushing") under this alternative. As discussed in Section D.10.3.3, Impact HAZ-6, impacts associated with herbicide use for vegetation control would not be adverse. Under CEQA, impacts would be considered less than significant (Class III).

D.10.4.4 ECO Highway 80 Underground 138 kV Transmission Route Alternative

Environmental Setting/Affected Environment

With the exception of the Old Highway 80 underground route alternative, components under this alternative would be the same as those identified for the proposed ECO Substation Project. From the intersection of the SWPL transmission line and Old Highway 80, this alternative would place the 138 kV transmission line underground adjacent to Old Highway 80 (expanding and utilizing an existing utility ROW) and would follow the roadway north and west to the rebuilt Boulevard Substation. The environmental setting adjacent to the affected segment of Old Highway 80 associated with this alternative would be the same as previously identified for the ECO Highway 80 138 kV Transmission Route Alternative in Section D.10.4.3.

Environmental Impacts/Environmental Effects

Direct and Indirect *(Note: cumulative effects are addressed in Section F of this EIR/EIS)*

Impacts HAZ-1 through HAZ-6: As described under the alternative in Section D.10.4.2, this alternative would require open trenching operations to underground approximately 4.8 miles of the proposed 138 kV transmission line adjacent to Highway 80, as opposed to constructing the line overhead on transmission line poles as under the proposed ECO Substation Project. As a result, construction activities under this alternative would differ marginally from the proposed ECO Substation Project because this additional trenching activity and soil disturbance would slightly increase the potential to encounter contaminated soils and/or groundwater.

Construction, operation, and maintenance activities on the project site would involve the use and storage of the same hazardous materials as those identified for the proposed ECO Substation Project (see Section D.10.4.3, Impacts HAZ-1 and HAZ-5). Use and storage of hazardous materials during operation and maintenance of the project would result in potential health and safety hazards to workers, residents, and the environment adjacent to the 138 kV transmission

line and ECO and Boulevard substations. These potential hazardous material impacts are associated with accidental spills during routine or emergency maintenance or normal operation along the 138 kV transmission line corridor, ECO Substation, and Boulevard Substation rebuild site. These potential impacts would be significant.

Implementation of Mitigation Measures HAZ-1a, HAZ-1b, HAZ-1c, along with Mitigation Measure HAZ-1d and APMs ECO-HAZ-2 and ECO-HAZ-3, related to demolition of the existing Boulevard Substation would reduce the likelihood of improper handling, storage, or release of hazardous substances during construction and would mitigate potential hazards to the public or the environment resulting from foreseeable upset or accidental conditions related to hazardous materials. Furthermore, implementation of a site-specific SPCC plan (Mitigation Measure HAZ-5a) and HMBP (Mitigation Measure HAZ-5b) would reduce potential hazards to the public or the environment resulting from accidental spill or release of hazardous materials during operations and maintenance. Identified impacts would be adverse; therefore, mitigation has been provided that would mitigate this impact. Under CEQA, impacts would be significant but can be mitigated to a level that is considered less than significant (Class II).

The presence of residual pesticides and herbicides is not anticipated, and no existing hazardous materials sites are located on or near the ECO Substation site; therefore, it is unlikely that hazardous materials would be encountered during excavation at the site, with the exception of lead, which may exist on the informal shooting ranges (see Section D.10.3.3 under Impacts HAZ-2 and HAZ-3). Potential hazards to the public or the environment would result from previously unknown soil and/or groundwater contamination or residual pesticides and herbicides encountered during grading activities; therefore, implementation of Mitigation Measures HAZ-2a, HAZ-2b, and HAZ-3 would be required. Identified impacts would be adverse; therefore, mitigation has been provided that would mitigate this impact. Under CEQA, impacts would be significant but can be mitigated to a level that is considered less than significant (Class II).

Potential safety hazards to workers or the public during construction and operation would be the same as under the proposed ECO Substation Project (see Section 10.3.3.3, Impact HAZ-4). Implementation of Mitigation Measures HAZ-4a, HAZ-4b, and HAZ-1b, as discussed in Section D.10.3.3, would reduce potential safety hazards. Identified impacts would be adverse; therefore, mitigation has been provided that would mitigate this impact. Under CEQA, impacts would be significant but can be mitigated to a level that is considered less than significant (Class II).

SDG&E would apply herbicides and employ mechanical clearing equipment to prevent or remove vegetation in the ROW (i.e., “pole brushing”) under this alternative. As discussed in Section D.10.3.3, Impact HAZ-6, impacts associated with herbicide use for vegetation control would not be adverse. Under CEQA, impacts would be considered less than significant (Class III).

D.10.5 Tule Wind Project Alternatives

Table D.10-6 summarizes the impacts and classification of the impacts under CEQA that have been identified for the Tule Wind Project alternatives.

Table D.10-6
Hazards and Public Health/Safety Impacts Identified for
Tule Wind Project Alternatives

Impact No.	Description	Classification
Tule Wind Alternative 1, Gen-Tie Route 2 with Collector Substation/O&M Facility on Rough Acres Ranch		
TULE-HAZ-1	Impacts to soil or groundwater could result from accidental spill or release of hazardous materials due to improper handling or storage of hazardous materials during construction activities.	Class II
TULE-HAZ-2	Residual pesticides and/or herbicides could be encountered during grading or excavation.	Class II
TULE-HAZ-3	Previously unknown soil and/or groundwater contamination could be encountered during grading or excavation.	Class II
TULE-HAZ-4	Potential safety hazards could adversely affect construction workers or the general public accessing the project site during construction, operation, or decommissioning.	Class II
TULE-HAZ-5	Impacts to soil or groundwater could result from accidental spill or release of hazardous materials during operations and maintenance.	Class II
TULE-HAZ-6	Herbicides used for vegetation control around towers and other project facilities could result in adverse health effects to the public or maintenance workers.	Class III
TULE-HAZ-7	Undue risks could result due to the breaking of a rotor blade, also called “blade throw.”	Class II
TULE-HAZ-8	Undue risks could result due to the potential collapse of a wind turbine.	Class III
Tule Wind Alternative 2, Gen-Tie Route 2 Underground with Collector Substation/O&M Facility on Rough Acres Ranch		
TULE-HAZ-1	Impacts to soil or groundwater could result from accidental spill or release of hazardous materials due to improper handling or storage of hazardous materials during construction activities.	Class II
TULE-HAZ-2	Residual pesticides and/or herbicides could be encountered during grading or excavation.	Class II
TULE-HAZ-3	Previously unknown soil and/or groundwater contamination could be encountered during grading or excavation.	Class II
TULE-HAZ-4	Potential safety hazards could adversely affect construction workers or the general public accessing the project site during construction, operation, or decommissioning.	Class II
TULE-HAZ-5	Impacts to soil or groundwater could result from accidental spill or release of hazardous materials during operations and maintenance.	Class II
TULE-HAZ-6	Herbicides used for vegetation control around towers and other project facilities could result in adverse health effects to the public or maintenance workers.	Class III
TULE-HAZ-7	Undue risks could result due to the breaking of a rotor blade, also called “blade throw.”	Class II
TULE-HAZ-8	Undue risks could result due to the potential collapse of a wind turbine.	Class III
Tule Wind Alternative 3, Gen-Tie Route 3 with Collector Substation/O&M Facility on Rough Acres Ranch		
TULE-HAZ-1	Impacts to soil or groundwater could result from accidental spill or release of hazardous materials due to improper handling or storage of hazardous materials during construction activities.	Class II
TULE-HAZ-2	Residual pesticides and/or herbicides could be encountered during grading or excavation.	Class II
TULE-HAZ-3	Previously unknown soil and/or groundwater contamination could be encountered during grading or excavation.	Class II
TULE-HAZ-4	Potential safety hazards could adversely affect construction workers or the general public accessing the project site during construction, operation, or decommissioning.	Class II

Table D.10-6 (Continued)

Impact No.	Description	Classification
TULE-HAZ-5	Impacts to soil or groundwater could result from accidental spill or release of hazardous materials during operations and maintenance.	Class II
TULE-HAZ-6	Herbicides used for vegetation control around towers and other project facilities could result in adverse health effects to the public or maintenance workers.	Class III
TULE-HAZ-7	Undue risks could result due to the breaking of a rotor blade, also called "blade throw."	Class II
TULE-HAZ-8	Undue risks could result due to the potential collapse of a wind turbine.	Class III
Tule Wind Alternative 4, Gen-Tie Route 3 Underground with Collector Substation/O&M Facility on Rough Acres Ranch		
TULE-HAZ-1	Impacts to soil or groundwater could result from accidental spill or release of hazardous materials due to improper handling or storage of hazardous materials during construction activities.	Class II
TULE-HAZ-2	Residual pesticides and/or herbicides could be encountered during grading or excavation.	Class II
TULE-HAZ-3	Previously unknown soil and/or groundwater contamination could be encountered during grading or excavation.	Class II
TULE-HAZ-4	Potential safety hazards could adversely affect construction workers or the general public accessing the project site during construction, operation, or decommissioning.	Class II
TULE-HAZ-5	Impacts to soil or groundwater could result from accidental spill or release of hazardous materials during operations and maintenance.	Class II
TULE-HAZ-6	Herbicides used for vegetation control around towers and other project facilities could result in adverse health effects to the public or maintenance workers.	Class III
TULE-HAZ-7	Undue risks could result due to the breaking of a rotor blade, also called "blade throw."	Class II
TULE-HAZ-8	Undue risks could result due to the potential collapse of a wind turbine.	Class III
Tule Wind Alternative 5, Reduction in Turbines		
TULE-HAZ-1	Impacts to soil or groundwater could result from accidental spill or release of hazardous materials due to improper handling or storage of hazardous materials during construction activities.	Class II
TULE-HAZ-2	Residual pesticides and/or herbicides could be encountered during grading or excavation.	Class II
TULE-HAZ-3	Previously unknown soil and/or groundwater contamination could be encountered during grading or excavation.	Class II
TULE-HAZ-4	Potential safety hazards could adversely affect construction workers or the general public accessing the project site during construction, operation, or decommissioning.	Class II
TULE-HAZ-5:	Impacts to soil or groundwater could result from accidental spill or release of hazardous materials during operations and maintenance.	Class II
TULE-HAZ-6	Herbicides used for vegetation control around towers and other project facilities could result in adverse health effects to the public or maintenance workers.	Class III
TULE-HAZ-7	Undue risks could result due to the breaking of a rotor blade, also called "blade throw."	Class II
TULE-HAZ-8	Undue risks could result due to the potential collapse of a wind turbine.	Class III

D.10.5.1 Tule Wind Alternative 1, Gen-Tie Route 2 with Collector Substation/O&M Facility on Rough Acres Ranch

Environmental Setting/Affected Environment

Under this alternative, the Tule Wind Project's collector substation and O&M facility would be relocated from BLM-administered land in the McCain National Cooperative Land and Wildlife Management Area to County of San Diego jurisdictional land on Rough Acres Ranch, resulting in a shorter proposed 138 kV transmission line route and a longer overhead cable collector

system. Turbines would be located in the same location as identified in the proposed Tule Wind Project. The environmental setting would be the same as previously identified for the originally proposed Tule Wind Project outlined in Sections D.10.1 and D.10.2.

Environmental Impacts/Environmental Effects

Direct and Indirect *(Note: cumulative effects are addressed in Section F of this EIR/EIS)*

Impacts HAZ-1 through HAZ-8: The findings for Impacts HAZ-1 through HAZ-8 would reflect impact findings previously discussed in Section D.10.3.3 for the proposed Tule Wind Project. As with the proposed Tule Wind Project, the use, transport, and storage of hazardous materials during construction of this alternative would include vehicle and equipment maintenance fuels, lubricating oils, grease, solvents, hydraulic fluid, coolant, and other hazardous materials typically utilized during transmission line construction and reasonably anticipated for construction of the project, as presented in Table D.10-3 (see Section D.10.4.2, Impact HAZ-1). Hazardous materials used by construction workers for the project have a potential for accidental spills during construction equipment operation on the site, which may result in the potential exposure of workers and/or the public to contaminated or hazardous materials during transmission line construction activities. This would be considered a significant impact. Hazardous materials contained in solid and industrial wastes during construction may also pose a risk to human health and the environment.

Implementation of Mitigation Measures HAZ-1a, HAZ-1b, and HAZ-1c would reduce the likelihood of improper handling, storage, or release of hazardous substances and would mitigate potential hazards to the public or the environment resulting from foreseeable upset or accidental conditions related to hazardous materials. Furthermore, implementation of a site-specific SPCC plan (Mitigation Measure HAZ-5a) and an HMBP (Mitigation Measure HAZ-5b) would mitigate potential hazards to the public or the environment resulting from accidental spill or release of hazardous materials during operations and maintenance activities. Identified impacts would be adverse; therefore, mitigation has been provided that would mitigate this impact. Under CEQA, impacts would be significant but can be mitigated to a level that is considered less than significant (Class II).

Due to the relocation of the collector substation and O&M facility to Rough Acres Ranch, construction of this alternative may result in impacts to a greater number of sensitive receptors. Because the project site is located in a rural setting historically used as grazing land with some limited irrigated agriculture, the potential for herbicide residuals that may be disturbed during construction activities may adversely affect the health of construction workers and the public who may be exposed to contaminated soils and/or groundwater (see Section D.10.3.3, Impact HAZ-2). By testing for residual pesticides/herbicides (Mitigation Measure HAZ-2a) and

implementing a contingency plan if suspected contamination is identified (Mitigation Measure HAZ-2b), potential hazards to the public or the environment resulting from previously unknown soil and/or groundwater contamination encountered during grading activities would be mitigated. Identified impacts would be adverse; therefore, mitigation has been provided that would mitigate this impact. Under CEQA, impacts would be significant but can be mitigated to a level that is considered less than significant (Class II).

Since construction of the project is not anticipated to impact any LUST sites or sites with potentially affected soils, it is unlikely that hazardous materials would be encountered during excavation (see Section D.10.3.3, Impact HAZ-3), with the exception of residual pesticides and/or herbicides in the surface soils as described previously. Implementation of Mitigation Measures HAZ-2a, HAZ-2b, and HAZ-3 would mitigate potential hazards to workers or the public resulting from previously unknown soil and/or groundwater contamination or residual pesticides and herbicides encountered during grading activities. Identified impacts would be adverse; therefore, mitigation has been provided that would mitigate this impact. Under CEQA, impacts would be significant but can be mitigated to a level that is considered less than significant (Class II).

Similar to the proposed Tule Wind Project, potential safety hazards to workers or the public during construction and operation would result in a significant impact, as discussed in Section D.10.3.3, Impact HAZ-4. Potential safety issues associated with the project include site access, construction, security, heavy equipment transportation, traffic management, emergency procedures, and fire control. Unauthorized access to the project site during construction, construction site conditions or activities that may result in injuries or hazardous conditions to construction workers, accidental spills and releases of hazardous materials, and public access to hazardous facilities during operation of the project may result in adverse impacts to construction workers and the general public. This would be a significant impact. Implementation of Mitigation Measures HAZ-4a and HAZ-1b would mitigate potential safety hazards. Identified impacts would be adverse; therefore, mitigation has been provided that would mitigate this impact. Under CEQA, impacts would be significant but can be mitigated to a level that is considered less than significant (Class II).

Similar to the proposed ECO Substation Project, the Tule Wind Project and its alternatives would apply herbicides and employ mechanical clearing equipment to prevent or remove vegetation in the ROW (i.e., “pole brushing”) (see Section D.10.3.3, Impact HAZ-6). Considering the application of specific protocols, general low toxicity of the proposed herbicides, restricted use of herbicides at project structures, and the nonroutine access of these areas by maintenance workers and the general public, impacts associated with herbicide use for

vegetation control would not be adverse. Under CEQA, impacts would be considered less than significant (Class III).

As with the proposed Tule Wind Project, this alternative would incorporate improved engineering design and quality control, thereby reducing the likelihood of blade throw (see Section D.10.3.3, Impact HAZ-7). Considering the design of the wind turbines, braking mechanisms and other safety controls described previously, and implementation of appropriate safety zones and setbacks (Mitigation Measure HAZ-6), potential impacts related to blade throw would be mitigated to a less-than-significant level (Class II). Tower collapse is unlikely because the towers and foundations are designed to withstand extreme earth shaking, 100-year flood erosion, and high winds (see Section D.10.3.3, Impact HAZ-8). With the proposed design and setback features that are part of the project, substantial risks due to the potential collapse of a tower would be less than significant. Impacts associated with the potential collapse of a wind turbine would not be adverse. Under CEQA, impacts would be considered less than significant (Class III).

D.10.5.2 Tule Wind Alternative 2, Gen-Tie Route 2 Underground with Collector Substation/O&M Facility on Rough Acres Ranch

Environmental Setting/Affected Environment

This alternative would be similar to the alternative described in Section D.10.5.1, with the exception of undergrounding the alternate 138 kV transmission line. This alternative would still involve the relocation of the collector substation and O&M facility to Rough Acres Ranch and the shortened 138 kV transmission line route and extended collector cable system associated with this relocation. The environmental setting would be the same as described in Section D.10.5.1.

Environmental Impacts/Environmental Effects

Direct and Indirect *(Note: cumulative effects are addressed in Section F of this EIR/EIS)*

Impacts HAZ-1 through HAZ-8: Under this alternative, open trenching operations would be required to underground approximately 4.1 miles of the proposed 138 kV transmission line, as opposed to constructing the line overhead on transmission line poles. As a result, during construction, temporary soil disturbance between the relocated collector substation and the rebuilt Boulevard Substation would be greater under this alternative (when compared to the proposed Tule Wind Project). Although the 138 kV transmission line associated with this alternative would be shorter in length than that of the overhead transmission line associated with the proposed Tule Wind Project, open trenching would be more invasive than excavation for transmission line poles.

This additional trenching activity and soil disturbance required to underground the alternative 138 kV transmission line would slightly increase the potential to encounter contaminated soils and/or groundwater. As with the proposed Tule Wind Project, the potential exists for herbicide residuals that may be disturbed during construction activities to adversely affect the health of construction workers and the public who may be exposed to contaminated soils and/or groundwater (see Section D.10.3.3, Impact HAZ-2). Construction is not anticipated to impact any LUST sites or sites with potentially affected soils; therefore, it is unlikely that hazardous materials would be encountered during excavation, with the exception of residual herbicides and pesticides, as described, and previously unknown soil and/or groundwater contamination (see Section D.10.3.3, Impact HAZ-3). Implementation of Mitigation Measures HAZ-2a, HAZ-2b, and HAZ-3 would mitigate potential hazards to workers or the public resulting from previously unknown soil and/or groundwater contamination or residual pesticides and herbicides encountered during grading activities. Identified impacts would be adverse; therefore, mitigation has been provided that would mitigate this impact. Under CEQA, impacts would be significant but can be mitigated to a level that is considered less than significant (Class II).

As with the proposed Tule Wind Project, potential safety hazards to workers or the public during construction and operation would require implementation of Mitigation Measures HAZ-4a and HAZ-1b to reduce potential safety hazards (see Section D.10.3.3, Impact HAZ-4). Identified impacts would be adverse; therefore, mitigation has been provided that would mitigate this impact. Under CEQA, impacts would be significant but can be mitigated to a level that is considered less than significant (Class II).

Similar to the proposed ECO Substation Project, the Tule Wind Project and its alternatives would apply herbicides and employ mechanical clearing equipment to prevent or remove vegetation in the ROW (i.e., "pole brushing") (see Section D.10.3.3, Impact HAZ-6). Considering the application of specific protocols, general low toxicity of the proposed herbicides, restricted use of herbicides at project structures, and the nonroutine access of these areas by maintenance workers and the general public, impacts associated with herbicide use for vegetation control would not be adverse. Under CEQA, impacts would be considered less than significant (Class III).

As with the proposed Tule Wind Project, this alternative would incorporate improved engineering design and quality control, thereby reducing the likelihood of blade throw (see Section D.10.3.3, Impact HAZ-7). Considering the design of the wind turbines, braking mechanisms and other safety controls described in Section D.10.3.3, and implementation of appropriate safety zones and setbacks (Mitigation Measure HAZ-6), potential impacts related to blade throw would be mitigated to a less–than-significant level (Class II). Tower collapse is unlikely, as the towers and foundations are designed to withstand extreme earthshaking, 100-year

flood erosion, and high winds (see Section D.10.3.3, Impact HAZ-8). With the proposed design and setback features that are part of the project, substantial risks due to the potential collapse of a tower would be less than significant. Impacts associated with the potential collapse of a wind turbine would not be adverse. Under CEQA, impacts would be considered less than significant (Class III).

D.10.5.3 Tule Wind Alternative 3, Gen-Tie Route 3 with Collector Substation/O&M Facility on Rough Acres Ranch

Environmental Setting/Affected Environment

Under this alternative, the Tule Wind Project's collector substation and O&M facility would be relocated from BLM-administered land in the McCain National Cooperative Land and Wildlife Management Area to County jurisdictional land on Rough Acres Ranch, resulting in a shorter proposed 138 kV transmission line route (approximately 5.4 miles) and a longer overhead cable collector system. Turbines would be located in the same location as identified in the proposed Tule Wind Project. The environmental setting would be the same as previously identified for the alternative described in Section D.10.5.1.

Environmental Impacts/Environmental Effects

Direct and Indirect *(Note: cumulative effects are addressed in Section F of this EIR/EIS)*

Impacts HAZ-1 through HAZ-8: The findings for Impacts HAZ-1 through HAZ-8 would reflect impact findings previously discussed in Section D.10.3.3 for the proposed Tule Wind Project. Construction impacts related to hazardous substances and public safety would essentially be the same as the relocation of the above-grade collector substation and O&M facility to Rough Acres Ranch, as identified for the alternative described in Section D.10.5.1.

Due to the relocation of the collector substation and O&M facility to Rough Acres Ranch, construction of this alternative may result in impacts to a greater number of sensitive receptors. Sensitive receptors at or near project components that could be temporarily disturbed during construction of the Tule Wind Alternative Gen-Tie 3 with Collector Substation/O&M Facility on Rough Acres Ranch include wilderness and recreational lands (BLM McCain National Cooperative Land and Wildlife Management Area, including the Lark Canyon OHV Area), public roadways, a private airstrip, commercial businesses, public facilities (Boulevard Volunteer Fire Department and San Diego County Sheriff's Department Substation–Boulevard), an airstrip, a school (Clover Flat Elementary), a motel (Lux Inn), and rural residences. Impacts to wilderness and recreation, agricultural resources, transportation facilities, and public services are discussed in Sections D.5, Wilderness and Recreation; D.6, Agriculture; D.9, Transportation and Traffic; and D.14, Public Services and Utilities, respectively. Other possible receptors that would

be temporarily impacted by construction of the alternative include commercial uses adjacent to Old Highway 80 in Boulevard.

As under the proposed Tule Wind Project, the potential exists for herbicide residuals that may be disturbed during construction activities to adversely affect the health of construction workers and the public who may be exposed to contaminated soils and/or groundwater (see Section D.10.3.3, Impact HAZ-2). Construction is not anticipated to impact any LUST sites or sites with potentially affected soils; therefore, it is unlikely that hazardous materials would be encountered during excavation with the exception of residual pesticides and herbicides as described previously (see Section D.10.3.3, Impact HAZ-3). Implementation of Mitigation Measures HAZ-2a, HAZ-2b, and HAZ-3 would mitigate potential hazards to workers or the public resulting from previously unknown soil and/or groundwater contamination or residual pesticides and herbicides encountered during grading activities. Identified impacts would be adverse; therefore, mitigation has been provided that would mitigate this impact. Under CEQA, impacts would be significant but can be mitigated to a level that is considered less than significant (Class II).

As with the proposed Tule Wind Project, potential safety hazards to workers or the public during construction and operation would require implementation of Mitigation Measures HAZ-4a and HAZ-1b to reduce potential safety hazards (see Section D.10.3.3, Impact HAZ-4). Identified impacts would be adverse; therefore, mitigation has been provided that would mitigate this impact. Under CEQA, impacts would be significant but can be mitigated to a level that is considered less than significant (Class II).

Similar to the proposed ECO Substation Project, the Tule Wind Project and its alternatives would apply herbicides and employ mechanical clearing equipment to prevent or remove vegetation in the ROW (i.e., "pole brushing") (see Section D.10.3.3, Impact HAZ-6). Considering the application of specific protocols, general low toxicity of the proposed herbicides, restricted use of herbicides at project structures, and the nonroutine access of these areas by maintenance workers and the general public, impacts associated with herbicide use for vegetation control would not be adverse. Under CEQA, impacts would be considered less than significant (Class III).

As with the proposed Tule Wind Project, this alternative would incorporate improved engineering design and quality control, thereby reducing the likelihood of blade throw (see Section D.10.3.3, Impact HAZ-7). Considering the design of the wind turbines, braking mechanisms and other safety controls described in Section D.10.3.3, and implementation of appropriate safety zones and setbacks (Mitigation Measure HAZ-6), potential impacts related to blade throw would be mitigated to a less-than-significant level (Class II). Tower collapse is unlikely because the towers and foundations are designed to withstand extreme earth shaking,

100-year flood erosion, and high winds (see Section D.10.3.3, Impact HAZ-8). With the proposed design and setback features that are part of the project, substantial risks due to the potential collapse of a tower would be less than significant. Impacts associated with the potential collapse of a wind turbine would not be adverse. Under CEQA, impacts would be considered less than significant (Class III).

D.10.5.4 Tule Wind Alternative 4, Gen-Tie Route 3 Underground with Collector Substation/O&M Facility on Rough Acres Ranch

Environmental Setting/Affected Environment

This alternative would be similar to the alternative described in Section D.10.5.4, with the exception of undergrounding the alternate 138 kV transmission line. This alternative would still involve the relocation of the collector substation and O&M facility to Rough Acres Ranch and the shortened 138 kV transmission line route and extended collector cable system associated with this relocation. The environmental setting would be the same as described in Section D.10.5.2.

Environmental Impacts/Environmental Effects

Direct and Indirect *(Note: cumulative effects are addressed in Section F of this EIR/EIS)*

Impacts HAZ-1 through HAZ-8: The findings for Impacts HAZ-1 through HAZ-8 would reflect impact findings previously discussed in Section D.10.3.3 for the proposed Tule Wind Project. Construction impacts related to hazardous substances and public safety would essentially be the same as the relocation of the above-grade collector substation and O&M facility to Rough Acres Ranch and undergrounding of the 138 kV transmission line route, as identified for the alternative described in Section D.10.5.2.

Under this alternative, open trenching operations would be required to underground the proposed 138 kV transmission line, as opposed to constructing the line overhead on transmission line poles. As a result, during construction, temporary soil disturbance between the relocated collector substation and the rebuilt Boulevard Substation would be greater under this alternative (when compared to the proposed Tule Wind Project). Although the 138 kV transmission line associated with this alternative would be shorter in length than that of the overhead gen-tie line associated with the proposed Tule Wind Project, open trenching would be more invasive than excavation for transmission line poles. This additional trenching activity and soil disturbance required to underground the alternative 138 kV transmission line would slightly increase the potential to encounter contaminated soils and/or groundwater.

As under the proposed Tule Wind Project, the potential exists for herbicide residuals that may be disturbed during construction activities to adversely affect the health of construction workers and

the public who may be exposed to contaminated soils and/or groundwater (see Section D.10.3.3, Impact HAZ-2). Construction is not anticipated to impact any LUST sites or sites with potentially affected soils; therefore, it is unlikely that hazardous materials would be encountered during excavation with the exception of residual pesticides and herbicides as described previously (see Section D.10.3.3, Impact HAZ-3). Implementation of Mitigation Measures HAZ-2a, HAZ-2b, and HAZ-3 would mitigate potential hazards to workers or the public resulting from previously unknown soil and/or groundwater contamination or residual pesticides and herbicides encountered during grading activities. Identified impacts would be adverse; therefore, mitigation has been provided that would mitigate this impact. Under CEQA, impacts would be significant but can be mitigated to a level that is considered less than significant (Class II).

As with the proposed Tule Wind Project, potential safety hazards to workers or the public during construction and operation would require implementation of Mitigation Measures HAZ-4a and HAZ-1b (as discussed in Section D.10.3.3, Impact HAZ-4) to reduce potential safety hazards. Identified impacts would be adverse; therefore, mitigation has been provided that would mitigate this impact. Under CEQA, impacts would be significant but can be mitigated to a level that is considered less than significant (Class II).

Similar to the proposed ECO Substation Project, the Tule Wind Project and its alternatives would apply herbicides and employ mechanical clearing equipment to prevent or remove vegetation in the ROW (i.e., "pole brushing") (see Section D.10.3.3, Impact HAZ-6). Considering the application of specific protocols, general low toxicity of the proposed herbicides, restricted use of herbicides at project structures, and the nonroutine access of these areas by maintenance workers and the general public, impacts associated with herbicide use for vegetation control would not be adverse. Under CEQA, impacts would be considered less than significant (Class III).

As with the proposed Tule Wind Project, this alternative would incorporate improved engineering design and quality control, thereby reducing the likelihood of blade throw (see Section D.10.3.3, Impact HAZ-7). Considering the design of the wind turbines, braking mechanisms and other safety controls described in Section D.10.3.3, and implementation of appropriate safety zones and setbacks (Mitigation Measure HAZ-6), potential impacts related to blade throw would be mitigated to a less-than-significant level (Class II). Tower collapse is unlikely because the towers and foundations are designed to withstand extreme earth shaking, 100-year flood erosion, and high winds (see Section D.10.3.3, Impact HAZ-8). With the proposed design and setback features that are part of the project, substantial risks due to the potential collapse of a tower would be less than significant. Impacts associated with the potential collapse of a wind turbine would not be adverse. Under CEQA, impacts would be considered less than significant (Class III).

D.10.5.5 Tule Wind Alternative 5, Reduction in Turbines

Environmental Setting/Affected Environment

The environmental setting under this alternative would be the same as described in Sections D.10.1 and D.10.2 with the exception that this alternative would remove 62 of the proposed 134 turbines (11 turbines on County jurisdictional land abutting the BLM In-Ko-Pah Mountains ACEC and 51 turbines adjacent to wilderness areas on the western side of the project site). .

Environmental Impacts/Environmental Effects

Direct and Indirect *(Note: cumulative effects are addressed in Section F of this EIR/EIS)*

Impacts HAZ-1 through HAZ-8: Because this alternative involves the installation of fewer turbines, excavation and construction impact areas would be reduced as compared to the proposed Tule Wind Project. As a result, the potential to encounter contaminated soils and/or groundwater during construction would be reduced, as would the potential for safety hazards and the need for herbicides used in vegetation control. In addition, because there would be fewer turbines installed under this alternative, there would be fewer turbines that may experience blade throw or collapse of towers. Nonetheless, impacts related to hazardous substances and public health/safety, including blade throw or tower collapse, would remain the same as under the Tule Wind Project, and would require the same mitigation as under the proposed Tule Wind Project to mitigate impacts (see Section D.10.3.3, Impacts HAZ-1 through HAZ-8). With the exception of Impacts HAZ-6 and HAZ-8 (which would not be adverse and would be considered less than significant under CEQA (Class III)), identified impacts HAZ-1 through HAZ-5 and HAZ-7 would be adverse under this alternative; therefore, mitigation has been provided to reduce these impacts. Under CEQA, impacts would be significant but can be mitigated to a level that is considered less than significant (Class II).

D.10.6 ESJ Gen-Tie Project Alternatives

Table D.10-7 summarizes the impacts and classification of the impacts under CEQA that have been identified for the ESJ Gen-Tie Project alternatives.

Table D.10-7
Hazards and Public Health/Safety Impacts Identified for
ESJ Gen-Tie Project Alternatives

Impact No.	Description	Classification
ESJ 230 kV Gen-Tie Underground Alternative		
ESJ-HAZ-1	Impacts to soil or groundwater could result from accidental spill or release of hazardous materials due to improper handling or storage of hazardous materials during construction activities.	Class II

Table D.10-7 (Continued)

Impact No.	Description	Classification
ESJ-HAZ-2	Residual pesticides and/or herbicides could be encountered during grading or excavation.	Class III
ESJ-HAZ-3	Previously unknown soil and/or groundwater contamination could be encountered during grading or excavation.	Class II
ESJ-HAZ-4	Potential safety hazards could adversely affect construction workers or the general public accessing the project site during construction, operation, or decommissioning.	Class II
ESJ-HAZ-5	Impacts to soil or groundwater could result from accidental spill or release of hazardous materials during operations and maintenance.	Class II
ESJ-HAZ-6	Herbicides used for vegetation control around towers and other project facilities could result in adverse health effects to the public or maintenance workers.	Class III
ESJ Gen-Tie Overhead Alternative Alignment		
ESJ-HAZ-1	Impacts to soil or groundwater could result from accidental spill or release of hazardous materials due to improper handling or storage of hazardous materials during construction activities.	Class II
ESJ-HAZ-2	Residual pesticides and/or herbicides could be encountered during grading or excavation.	Class III
ESJ-HAZ-3	Previously unknown soil and/or groundwater contamination could be encountered during grading or excavation.	Class II
ESJ-HAZ-4	Potential safety hazards could adversely affect construction workers or the general public accessing the project site during construction, operation, or decommissioning.	Class II
ESJ-HAZ-5	Impacts to soil or groundwater could result from accidental spill or release of hazardous materials during operations and maintenance.	Class II
ESJ-HAZ-6	Herbicides used for vegetation control around towers and other project facilities could result in adverse health effects to the public or maintenance workers.	Class III
ESJ Gen-Tie Underground Alternative Alignment		
ESJ-HAZ-1	Impacts to soil or groundwater could result from accidental spill or release of hazardous materials due to improper handling or storage of hazardous materials during construction activities.	Class II
ESJ-HAZ-2	Residual pesticides and/or herbicides could be encountered during grading or excavation.	Class III
ESJ-HAZ-3	Previously unknown soil and/or groundwater contamination could be encountered during grading or excavation.	Class II
ESJ-HAZ-4	Potential safety hazards could adversely affect construction workers or the general public accessing the project site during construction, operation, or decommissioning.	Class II
ESJ-HAZ-5	Impacts to soil or groundwater could result from accidental spill or release of hazardous materials during operations and maintenance.	Class II
ESJ-HAZ-6	Herbicides used for vegetation control around towers and other project facilities could result in adverse health effects to the public or maintenance workers.	Class III

D.10.6.1 ESJ 230 kV Gen-Tie Underground Alternative

Environmental Setting/Affected Environment

The ESJ Gen-Tie Project considers both a 500 kV gen-tie and a 230 kV gen-tie option. This alternative to the proposed ESJ Gen-Tie Project involves the selection and construction of the 230 kV gen-tie option underground within the same project area as the ESJ Gen-Tie Project; therefore, the existing setting would be the same as described in Sections D.10.1 and D.10.2.

Environmental Impacts/Environmental Effects

Direct and Indirect *(Note: cumulative effects are addressed in Section F of this EIR/EIS)*

Impacts HAZ-1 through HAZ-6: The findings for Impacts HAZ-1 through HAZ-6 would reflect impact findings previously discussed in Section D.10.3.3 for the proposed ESJ Gen-Tie Project. Under this alternative, open trenching operations would be required to underground the proposed 230 kV gen-tie, as opposed to constructing the line overhead on transmission line poles. As a result, during construction, temporary soil disturbance would be greater under this alternative (when compared to the proposed ESJ Gen-Tie Project). This additional trenching activity and soil disturbance required to underground the 230 kV gen-tie line would slightly increase the potential to encounter contaminated soils and/or groundwater.

Construction activities on the project site would involve the use and storage of the same hazardous materials as those identified for the proposed ESJ Gen-Tie Project (see Section D.10.3.3, Impact HAZ-1). Implementation of Mitigation Measures HAZ-1a and HAZ-1b would reduce the likelihood of improper handling, storage, or release of hazardous substances and mitigate potential hazards to the public or the environment resulting from foreseeable upset or accidental conditions related to hazardous materials.

No chemicals or hazardous materials are anticipated to be produced, used, stored, transported, or disposed of as a result of operation of the ESJ Gen-Tie Project; however, minimal amounts of chemicals may be used at the project site during maintenance activities (see Section D.10.3.3, Impact HAZ-5). Accidental spills during routine or emergency maintenance could occur. These potential impacts would be significant. Development and implementation of an SPCC plan (Mitigation Measure HAZ-5a) and an HMBP (Mitigation Measure HAZ-5b) would mitigate potential impacts of hazardous materials spills and releases during maintenance activities. Identified impacts would be adverse; therefore, mitigation has been provided that would mitigate this impact. Under CEQA, impacts would be significant but can be mitigated to a level that is considered less than significant (Class II).

No commercial or industrial uses have occurred on the project property, including agricultural uses; therefore, the presence of residual pesticides and/or herbicides is unlikely (see Section D.10.3.3, Impact HAZ-2). Potential hazards to the public or the environment resulting from residual pesticides and/or herbicides encountered during grading activities would not be adverse. Under CEQA, impacts would be considered less than significant (Class III).

As no existing hazardous materials sites were identified on or near the ESJ Gen-Tie Project site, it is unlikely that hazardous materials would be encountered during excavation at the site, with the exception of lead, which may exist on the informal shooting ranges identified during site reconnaissance in March 2009 (see Section D.10.3.3, Impact HAZ-3). Soil sampling and testing

to determine lead contamination for excavation within 500 feet of any informal shooting range (Mitigation Measure HAZ-3) would mitigate potential hazards to the public or the environment resulting from previously unknown soil and/or groundwater contamination encountered during grading activities. Identified impacts would be adverse; therefore, mitigation has been provided that would mitigate this impact. Under CEQA, impacts would be significant but can be mitigated to a level that is considered less than significant (Class II).

As with the proposed ESJ Gen-Tie Project, potential safety hazards to workers or the public during construction and operation would require implementation of Mitigation Measures HAZ-4a and HAZ-1b (as discussed in Section D.10.3.3, Impact HAZ-4) to mitigate potential safety hazards. Identified impacts would be adverse; therefore, mitigation has been provided that would mitigate this impact. Under CEQA, impacts would be significant but can be mitigated to a level that is considered less than significant (Class II).

Similar to the proposed ECO Substation, Tule Wind, and ESJ Gen-Tie projects, this alternative would apply herbicides and employ mechanical clearing equipment to prevent or remove vegetation in the ROW (i.e., "pole brushing") (see Section D.10.3.3, Impact HAZ-6). Considering the application of specific protocols, general low toxicity of the proposed herbicides, restricted use of herbicides at project structures, and the nonroutine access of these areas by maintenance workers and the general public, impacts associated with herbicide use for vegetation control would not be adverse. Under CEQA, impacts would be considered less than significant (Class III).

D.10.6.2 ESJ Gen-Tie Overhead Alternative Alignment

This alternative would not affect the impact conclusions resulting from the implementation of the proposed Tule Wind Project as discussed in Section D.10.3.3. This alternative assumes the implementation of the ECO Substation Alternative Site and that the public health and safety impacts identified in Section D.10.4.1 (ECO Substation Alternative Site) would occur.

Environmental Setting/Affected Environment

Sections D.10.1 and D.10.2 describe the existing setting associated with the ESJ Gen-Tie Project, which considers both a 500 kV and a 230 kV gen-tie option. This alternative would shift both the 500 kV and the 230 kV lines approximately 700 feet to the east to connect to the new ECO Substation location. The environmental setting under this alternative would be the same as described in Sections D.10.1 and D.10.2.

Environmental Impacts/Environmental Effects

Direct and Indirect *(Note: cumulative effects are addressed in Section F of this EIR/EIS)*

Impacts HAZ-1 through HAZ-6: Impacts resulting from this alternative would reflect impact findings previously discussed in Section D.10.3.3 for the proposed ESJ Gen-Tie Project. As such, impacts related to accidental spill or release of hazardous materials during construction, operation, and maintenance (Impacts HAZ-1 and HAZ-5), residual herbicides or pesticides (Impact HAZ-2), potential to encounter soil and/or groundwater contamination (Impact HAZ-3), safety hazards to construction workers and/or the general public (Impact HAZ-4), and use of herbicides for vegetation control (Impact HAZ-6) would be essentially the same as under the proposed ESJ Gen-Tie Project. Implementation of Mitigation Measures HAZ-1a, HAZ-1b, HAZ-1c, HAZ-3, HAZ-4a, HAZ-5a, and HAZ-5b would mitigate Impacts HAZ-1, HAZ-3, HAZ-4, and HAZ-5. Identified impacts would be adverse; therefore, mitigation has been provided that would mitigate this impact. Under CEQA, impacts would be significant but can be mitigated to a level that is considered less than significant (Class II).

As with the proposed ESJ Gen-Tie Project, potential hazards to the public or the environment resulting from residual pesticides and/or herbicides encountered during grading activities (see Section D.10.3.3, Impact HAZ-2) and impacts associated with herbicide use for vegetation control (see Section D.10.3.3, Impact HAZ-6) would not be adverse. Under CEQA, impacts would be considered less than significant (Class III).

D.10.6.3 ESJ Gen-Tie Underground Alternative Alignment

This alternative would not affect the impact conclusions resulting from the implementation of the proposed Tule Wind Project as discussed in Section D.10.3.3. This alternative assumes the implementation of the ECO Substation Alternative Site and that the public health and safety impacts identified in Section D.10.4.1 (ECO Substation Alternative Site) would occur.

Environmental Setting/Affected Environment

Sections D.10.1 and D.10.2 describe the existing setting associated with the ESJ Gen-Tie Project, which considers both a 500 kV and a 230 kV gen-tie option. This alternative involves the selection and construction of the 230 kV gen-tie option underground and shifted approximately 700 feet to the east of the proposed line under the ESJ Gen-Tie Project. The environmental setting under this alternative would be the same as described in Sections D.10.1 and D.10.2.

Environmental Impacts/Environmental Effects

Direct and Indirect *(Note: cumulative effects are addressed in Section F of this EIR/EIS)*

Impacts HAZ-1 through HAZ-6: Construction impacts related to hazardous substances and public safety would essentially be the same as the undergrounding of the 230 kV gen-tie route, as identified for the alternative described in Section D.10.6.1. Under this alternative, open trenching operations would be required to underground the proposed 230 kV gen-tie route, as opposed to constructing the line overhead on transmission line poles. As a result, during construction, temporary soil disturbance would be greater under this alternative (when compared to the proposed ESJ Gen-Tie Project). This additional trenching activity and soil disturbance required to underground the gen-tie line would slightly increase the potential to encounter contaminated soils and/or groundwater.

Nonetheless, impacts resulting from this alternative would reflect impact findings previously discussed in Section D.10.3.3 for the proposed ESJ Gen-Tie Project. As such, impacts related to accidental spill or release of hazardous materials during construction, operation, and maintenance (Impacts HAZ-1 and HAZ-5), residual herbicides or pesticides (Impact HAZ-2), encountering potential soil and/or groundwater contamination (Impact HAZ-3), safety hazards to construction workers and/or the general public (Impact HAZ-4), and use of herbicides for vegetation control (Impact HAZ-6) would be essentially the same as under the proposed ESJ Gen-Tie Project. Implementation of Mitigation Measures HAZ-1a, HAZ-1b, HAZ-1c, HAZ-3, HAZ-4a, HAZ-5a, and HAZ-5b would reduce Impacts HAZ-1, HAZ-3, HAZ-4, and HAZ-5. Identified impacts would be adverse; therefore, mitigation has been provided that would mitigate this impact. Under CEQA, impacts would be significant but can be mitigated to a level that is considered less than significant (Class II).

As with the proposed ESJ Gen-Tie project, potential hazards to the public or the environment resulting from residual pesticides and/or herbicides encountered during grading activities (see Section D.10.3.3, Impact HAZ-2) and impacts associated with herbicide use for vegetation control (see Section D.10.3.3, Impact HAZ-6) would not be adverse. Under CEQA, impacts would be considered less than significant (Class III).

D.10.7 No Project/No Action Alternatives

D.10.7.1 No Project Alternative 1 – No ECO Substation, Tule Wind, ESJ Gen-Tie, Campo, Manzanita, or Jordan Wind Energy Projects

Environmental Impacts/Environmental Effects

Impacts HAZ-1 through HAZ-6: Under the No Project Alternative 1, the ECO Substation, Tule Wind, and ESJ Gen-Tie, as well as the Campo, Manzanita, and Jordon wind energy projects, would not be built, and the existing conditions would remain at these sites.

Public health and safety impacts resulting from the Proposed PROJECT would not occur.

D.10.7.2 No Project Alternative 2 – No ECO Substation Project

Environmental Impacts/Environmental Effects

Impacts HAZ-1 through HAZ-6: Under No Project Alternative 2, the ECO Substation Project would not be built, and the Tule Wind and ESJ Gen-Tie projects would be constructed. Under No Project Alternative 2, SDG&E would likely upgrade an existing substation or construct an entirely new substation to interconnect planned renewable energy generation in southeastern San Diego County. Public health and safety impacts resulting from other interconnection upgrades and transmission options could be similar to those identified for the ECO Substation Project and would vary depending on location of facility upgrades and new transmission options.

The Tule Wind and ESJ Gen-Tie projects would be constructed and would interconnect with an existing substation or with a new substation expected to be proposed by SDG&E. Impacts associated with the Tule Wind and ESJ Gen-Tie projects would be expected to be similar to those described in Section D.10.3.3 but could vary depending on the point of interconnection and the resulting gen-tie route and length of the Tule Wind and ESJ Gen-Tie projects.

D.10.7.3 No Project Alternative 3 – No Tule Wind Project

Environmental Impacts/Environmental Effects

Impacts HAZ-1 through HAZ-6: Under No Project Alternative 3 (No Tule Wind Project), the amount of hazardous materials used, stored, and transported during construction and operation would be less than under the Proposed PROJECT. Because no wind turbines would be built under this alternative, impacts related to potential blade throw or tower collapse would not occur; therefore, impacts to public safety would be less than under the Proposed PROJECT.

D.10.7.4 No Project Alternative 4 – No ESJ Gen-Tie Project

Environmental Impacts/Environmental Effects

Impacts HAZ-1 through HAZ-6: Under this alternative, construction-related impacts associated with the proposed ECO Substation and Tule Wind projects would still occur and require mitigation as described in Section D.10.3.3. If the proposed ESJ Gen-Tie Project were not constructed, it is likely that an alternative gen-tie would be constructed. The impacts associated with this gen-tie would be expected to be similar to those described in Section D.10.3.3, and mitigation measures would be required as under the Proposed PROJECT. Despite a reduction in the amount of hazardous materials used, stored, and transported during construction and operation under this alternative, the types of materials and potential hazards from improper handling, storage, or release of hazardous substances would be the same as under the Proposed PROJECT.

D.10.8 Electric and Magnetic Fields

Recognizing that there is a great deal of public interest and concern regarding potential health effects from exposure to EMFs from power lines, this section provides information regarding EMFs associated with electric utility facilities and the associated potential effects of the Proposed PROJECT as they relate to public health and safety.

Potential health effects from exposure to electric fields from power lines are typically not of concern because electric fields are effectively shielded by materials such as trees, walls, and structures; therefore, the majority of the following discussion focuses on exposure to magnetic fields and the associated effects on public health and safety. Unlike electric fields, magnetic fields are not easily shielded by objects or materials.

This section does not consider EMFs in the context of CEQA/NEPA for determination of environmental impact because there is no agreement among scientists that EMFs create a health risk and because there are no defined or adopted CEQA/NEPA standards for defining health risks from EMFs. As a result, the following EMF information is presented for the benefit of the public and decision makers.

D.10.8.1 Defining EMF

Electric fields and magnetic fields are distinct phenomena that occur both naturally and as a result of human activity across a broad spectrum. Naturally occurring electric and magnetic fields are caused by atmospheric conditions and earth's geomagnetic field. The fields caused by human activity result from technological application of the electromagnetic spectrum for uses

such as communications, appliances, and the generation, transmission, and local distribution of electricity. Electric and magnetic fields are vector quantities that have the properties of direction and amplitude (field strength).

Electric and magnetic fields of power lines have the additional property of frequency, which is determined by the rate at which electric and magnetic fields change their direction each second. The hertz (Hz) is the unit of frequency. For power lines in the United States, the frequency of change is 60 times per second, leading to the designation "60 Hz power." In Europe and many other countries, the frequency of electric power is 50 Hz. Radio and other communications systems operate at much higher frequencies, from approximately 500,000 Hz (500 kilohertz (kHz)) to over 2,000,000,000 Hz (2 Gigahertz (GHz)), at which frequencies the fields share a mutual relationship in forming an electromagnetic field. The information presented in this document is limited to the EMF from power lines operating at frequencies of 50 or 60 Hz.

Electric power flows across transmission systems from generating sources to serve electrical loads within the community. The power flowing over a transmission line is determined by the transmission line voltage and the current. The higher the voltage level of the transmission line, the lower the amount of current needed to deliver the same amount of power. For example, a 115,000-volt (115 kV) transmission line with 200 amperes of current would transmit approximately 40,000 kilowatts (kW), whereas a 230 kV transmission line requires only 100 amperes of current to deliver the same 40,000 kW.

Electric Fields

Electric fields from power lines are created whenever the lines are energized, with the strength of the field dependent directly on the voltage of the line creating it. Electric field strength is typically described in units of kilovolt per meter (kV/m). Electric field strength attenuates (gets weaker) rapidly as the distance from the source increases. Electric fields are reduced at many receptors because they are effectively shielded by most objects or materials such as trees or houses.

Unlike magnetic fields, which penetrate almost everything and are unaffected by buildings, trees, and other obstacles, electric fields are distorted by any object that is within the electric field, including the human body. Even trying to measure an electric field with electronic instruments is difficult because the devices themselves would alter the levels recorded. Determining an individual's exposure to electric fields requires the understanding of many variables, including the electric field itself, how effectively a person is grounded, and a person's body surface area within the electric field.

Electric fields in the vicinity of power lines can cause phenomena similar to the static electricity experienced on a dry winter day, or with clothing just removed from a clothes' dryer, and may

result in nuisance electric discharges when touching long metal fences, pipelines, or large vehicles. An acknowledged potential impact to public health from electric transmission lines is the hazard of electric shock: electric shocks from transmission lines are generally the result of accidental or unintentional contact by the public with the energized wires. The issue of induced currents and shock hazards is addressed in Section D.10.9.

Magnetic Fields

Magnetic fields from power lines are created whenever current flows through power lines at any voltage. The strength of the field is directly dependent on the current in the line. Magnetic field strength is typically measured in milligauss (mG). Similar to electric field strength, magnetic field strength attenuates rapidly with distance from the source. Unlike electric fields, magnetic fields are not shielded by most objects or materials.

Comparison of Electric and Magnetic Fields

The nature of electric and magnetic fields can be illustrated by considering a household appliance. When the appliance is energized by being plugged into an outlet but not turned on so no current would be flowing through it, an electric field would be generated around the cord and appliance, but no magnetic field would be present. If the appliance is switched on, the electric field would still be present, and a magnetic field would be created. The electric field strength is directly related to the magnitude of the voltage from the outlet, and the magnetic field strength is directly related to the magnitude of the current flowing in the cord and appliance.

D.10.8.2 EMF Sources in the Proposed PROJECT Area

EMF exposure to the public in developed areas varies over a range of field intensities and durations due to sources in the home and work environments, electric power distribution, and, infrequently, from proximity to transmission lines.

In contrast, for undeveloped and natural areas such as the Proposed PROJECT area, EMFs greater than the very low natural background level are not present except in the vicinity of the existing 500 kV SWPL, near local distribution circuits, and in any isolated residential, commercial, and industrial buildings that may exist. Although recreational and residential uses exist in the project area, exposures in this area are further limited because large groups of people don't use the project area for recreation at one time and because nearby residences are not in close proximity to these facilities; however, periodic and transient uses of these areas for activities such as recreation occur and would result in public exposure to EMFs when in the vicinity of electric transmission and distribution lines.

D.10.8.3 Scientific Background and Regulations Applicable to EMF

EMF Research

For more than 30 years, researchers have questioned the potential effects that EMFs from power lines have had on the environment. Early studies focused primarily on interactions with the electric fields from power lines. The subject of magnetic field interactions began to receive additional public attention in the 1980s as research levels increased. A substantial amount of research investigating both electric and magnetic fields has been conducted over the past several decades; however, much of the body of national and international research regarding EMFs and public health risks remains contradictory or inconclusive.

Extremely low frequency (ELF) fields are known to interact with tissues by inducing electric fields and currents. The electric currents induced by ELF fields commonly found in the environment are normally much lower than the strongest electric currents naturally occurring in the body, such as those that control the beating of the heart.

Research related to EMFs is easily grouped into three general categories: cellular level studies, animal and human experiments, and epidemiological studies. Epidemiological studies have provided mixed results, with some studies showing an apparent relationship between magnetic fields and health effects while other similar studies do not. Laboratory studies and studies investigating a possible mechanism for health effects (mechanistic studies) provide little or no evidence to support this link.

Since 1979, public interest and concern specifically regarding magnetic fields from power lines has increased. This origin of this increase has generally been attributed to publication of the results of a single epidemiological study (Wertheimer and Leeper 1979). This study observed an association between the wiring configuration on electric power lines outside of homes in greater Denver, Colorado, and the incidence of childhood cancer. Following publication of the Wertheimer and Leeper (1979) study, many epidemiological, laboratory, and animal studies regarding EMFs have been conducted. Table D.10-8 provides examples of field values for several home appliances.

Table D.10-8
Typical Electric Field Values for Appliances at 12 Inches

Appliance	Electric Field Strength (kV/m)
Electric blanket	0.25*
Broiler	0.13
Stereo	0.09
Refrigerator	0.06
Iron	0.06

Table D.10-8 (Continued)

Appliance	Electric Field Strength (kV/m)
Hand mixer	0.05
Phonograph	0.04
Coffee pot	0.03

Source: Wertheimer and Leeper 1979.
Note: * 1 to 10 kV/m next to blanket wires.

Research on ambient magnetic fields in homes and buildings in several western states found average magnetic field levels within rooms to be approximately 1 mG; in a room with appliances present, the measured values ranged from 9 to 20 mG (Severson et al. 1988; Silva et al. 1988). Immediately adjacent to appliances (within 12 inches), field values are much higher, as illustrated in Table D.10-9, Magnetic Field from Household Appliances. This table indicates typical sources and levels of electric and magnetic field exposure the general public experiences from appliances.

Table D.10-9
Magnetic Field from Household Appliances

Appliance	Magnetic Field (mG)	
	12-inch Distance	Maximum
Electric range	3 to 30	100 to 1,200
Electric oven	2 to 25	10 to 50
Garbage disposal	10 to 20	850 to 1,250
Refrigerator	0.3 to 3	4 to 15
Clothes washer	2 to 30	10 to 400
Clothes dryer	1 to 3	3 to 80
Coffee maker	0.8 to 1	15 to 250
Toaster	0.6 to 8	70 to 150
Crockpot	0.8 to 1	15 to 80
Iron	1 to 3	90 to 300
Can opener	35 to 250	10,000 to 20,000
Mixer	6 to 100	500 to 7,000
Blender, popper, processor	6 to 20	250 to 1,050
Vacuum cleaner	20 to 200	2,000 to 8,000
Portable heater	1 to 40	100 to 1,100
Fans/blowers	0.4 to 40	20 to 300
Hair dryer	1 to 70	60 to 20,000
Electric shaver	1 to 100	150 to 15,000
Color TV	9 to 20	150 to 500
Fluorescent fixture	2 to 40	140 to 2,000
Fluorescent desk lamp	6 to 20	400 to 3,500

Table D.10-9 (Continued)

Appliance	Magnetic Field (mG)	
	12-inch Distance	Maximum
Circular saws	10 to 250	2,000 to 10,000
Electric drill	25 to 35	4,000 to 8,000

Source: Gauger 1985.

Methods to Reduce EMFs

EMF levels from transmission lines can be reduced in three primary ways: shielding, field cancellation, or increasing the distance from the source. Shielding, which reduces exposure to electric fields, can be actively accomplished by placing trees or other physical barriers along the transmission line ROW. Shielding also results from existing structures the public may use or occupy along the line. Since electric fields can be blocked by most materials, shielding is effective for the electric fields but is not effective for magnetic fields.

Magnetic fields can be reduced either by cancellation or by increasing distance from the source. Cancellation is achieved in two ways. A transmission line circuit consists of three phases, requiring three separate wires (conductors) on a transmission tower. The configuration of these three conductors can reduce magnetic fields. First, when the configuration places the three conductors closer together, interference, or cancellation, of the fields from each wire is enhanced. This technique has practical limitations because of the potential for short circuits if the wires are placed too close together. There are also worker safety issues to consider if spacing is reduced. Second, in instances where there are two circuits (more than three phase wires), such as in portions of the Proposed PROJECT, cancellation can be accomplished by arranging phase wires from the different circuits near each other. In underground lines, the three phases are typically much closer together than in overhead lines because the cables are insulated (coated). The distance between the source of fields and the public can be increased by either placing the wires higher above ground, burying underground cables deeper, or by increasing the width of the ROW. For transmission lines, these methods can prove effective in reducing fields because the reduction of the field strength drops rapidly with distance.

Scientific Panel Reviews

Numerous panels of expert scientists have convened to review the data relevant to the question of whether exposure to power-frequency EMFs is associated with adverse health effects. These evaluations have been conducted in order to advise governmental agencies or professional standard-setting groups. These panels of scientists first evaluate the available studies individually, not only to determine what specific information they can offer, but also in terms of the validity of their experimental design, methods of data collection, analysis, and suitability of

the authors' conclusions to the nature and quality of the data presented. Subsequently, the individual studies, with their previously identified strengths and weaknesses, are evaluated collectively in an effort to identify whether there is a consistent pattern or trend in the data that would lead to a determination of possible or probable hazards to human health resulting from exposure to these fields.

These reviews include those prepared by international agencies such as the World Health Organization (WHO 1984, 1987, 2001, 2007) and the International Non-Ionizing Radiation Committee of the International Radiation Protection Association (IRPA/INIRC 1990), as well as governmental agencies of a number of countries, such as the U.S. EPA, the National Radiological Protection Board of the United Kingdom, the Health Council of the Netherlands, and the French and Danish Ministries of Health.

As noted in the following, these scientific panels have varied conclusions on the strength of the scientific evidence suggesting that power frequency EMF exposures pose any health risk.

In May 1999, the National Institute of Environmental Health Sciences (NIEHS) submitted to Congress its report titled, Health Effects from Exposure to Power-Line Frequency Electric and Magnetic Fields, containing the following conclusion regarding EMFs and health effects (NIEHS 1999):

> Using criteria developed by the International Agency for Research on Cancer (IARC), none of the Working Groups considered the evidence strong enough to label ELF-EMF exposure as a known human carcinogen or probable human carcinogen. However, a majority of the members of this Working Group concluded that exposure to powerline frequency ELF-EMF is a possible carcinogen [emphasis added].

In June 2001, a scientific working group of IARC (an agency of WHO) reviewed studies related to the carcinogenicity of EMFs. Using standard IARC classification, magnetic fields were classified as "possibly carcinogenic to humans" based on epidemiological studies. "Possibly carcinogenic to humans" is a classification used to denote an agent for which there is limited evidence of carcinogenicity in humans and less-than-sufficient evidence of carcinogenicity in experimental animals. Other agents identified as "possibly carcinogenic to humans" include gasoline exhaust, styrene, welding fumes, and coffee (WHO 2001).

On behalf of the California Public Utilities Commission (CPUC), the California Department of Health Services (DHS) completed a comprehensive review of existing studies related to EMFs from power lines and potential health risks (Neutra et al. 2002). This risk evaluation was undertaken by three staff scientists with the DHS. Each of these scientists is identified in the

review results as an epidemiologist, and their work took place from 2000 to 2002. The results of this review, An Evaluation of the Possible Risks from Electric and Magnetic Fields (EMFs) From Power Lines, Internal Wiring, Electrical Occupations, and Appliances, were published in June 2002. The conclusions contained in the executive summary are provided as follows (Neutra et al. 2002):

- To one degree or another, all three of the DHS scientists are inclined to believe that EMFs can cause some degree of increased risk of childhood leukemia, adult brain cancer, Lou Gehrig's Disease, and miscarriage.
- They strongly believe that EMFs do not increase the risk of birth defects, or low birth weight.
- They strongly believe that EMFs are not universal carcinogens, since there are a number of cancer types that are not associated with EMF exposure.
- To one degree or another they are inclined to believe that EMFs do not cause an increased risk of breast cancer, heart disease, Alzheimer's Disease, depression, or symptoms attributed by some to sensitivity to EMFs. However, all three scientists had judgments that were "close to the dividing line between believing and not believing" that EMFs cause some degree of increased risk of suicide.
- For adult leukemia, two of the scientists are "close to the dividing line between believing or not believing" and one was "prone to believe" that EMFs cause some degree of increased risk.

The report indicates that the DHS scientists are more inclined to believe that EMF exposure increased the risk of the listed health problems than the majority of the members of scientific committees that have previously convened to evaluate the scientific literature. With regard to why the DHS review's conclusions differ from those of other recent reviews, the report states:

> The three DHS scientists thought there were reasons why animal and test tube experiments might have failed to pick up a mechanism or a health problem; hence, the absence of much support from such animal and test tube studies did not reduce their confidence much or lead them to strongly distrust epidemiological evidence from statistical studies in human populations. They therefore had more faith in the quality of the epidemiological studies in human populations and hence gave more credence to them.

In addition to the uncertainty regarding the level of health risk posed by EMFs, individual studies and scientific panels have not been able to determine or reach consensus regarding what level of magnetic field exposure might constitute a health risk. In some early epidemiological studies, increased health risks were discussed for daily time-weighted average field levels greater than

2 mG. However, the IARC scientific working group indicated that studies with average magnetic field levels of 3 to 4 mG played a pivotal role in their classification of EMFs as a possible carcinogen (IARC 2002).

The 2007 WHO Environmental Health Criteria 238 report concluded that:

- Evidence for a link between Extremely Low Frequency (50–60 Hz) magnetic fields and health risks is based on epidemiological studies demonstrating a consistent pattern of increased risk for childhood leukemia. However, "…virtually all of the laboratory evidence and the mechanistic evidence fail to support a relationship between low-level ELF magnetic fields and changes in biological function or disease status…the evidence is not strong enough to be considered causal but sufficiently strong to remain a concern."
- "For other diseases, there is inadequate or no evidence of health effects at low exposure levels."

EMF health issues continue to be the subject of research and examination in the context of regulatory standards and guidelines. The Electric Power Research Institute (EPRI) describes itself as "the only organization in North America funding long-term, multidisciplinary EMF research" and sponsors research and scientific meetings in areas of current interest (EPRI 2010). A recent European Commission report identified a research gap concerning the association of ELF-EMF exposures with neurodegenerative diseases and put the need for a multidisciplinary research as "very important and given high priority based on their relevance for fundamental understanding of the issue and/or their relevance for public health" (SCENIHR 2009, p. 4). The Australian Radiation Protection and Nuclear Safety Agency regulatory body issued draft EMF guidelines in 2006, and organizations such as International Commission on Non-Ionizing Radiation Protection (ICNIRP 1998) and International Committee on Electromagnetic Safety (ICES 2002) continue to review and refine their guidelines and standards.

Policies, Standards, and Regulations

A number of counties, states, and local governments have adopted or considered regulations or policies related to EMF exposure. The reasons for these actions have been varied; in general, however, the actions can be attributed to addressing public reaction to and perception of EMFs as opposed to responding to the findings of any specific scientific research. Following is a brief summary of the guidelines and regulatory activity regarding EMFs.

International Guidelines

IRPA, in cooperation with the WHO, has published recommended guidelines for electric and magnetic field exposures. For the general public, the limits are 4.2 kV/m for electric fields and 833 mG for magnetic fields. These organizations have neither governmental authority nor

recognized jurisdiction to enforce these guidelines. However, because they were developed by a broad base of scientists, these guidelines have been given merit and are considered by utilities and regulators when reviewing EMF levels from electric power lines.

National Guidelines

Although the EPA has conducted investigations into EMFs related to power lines and health risks, no national standards have been established. There have been a number of studies sponsored by the EPA, the EPRI, and other institutions. Several bills addressing EMFs have been introduced at the congressional level and have provided funding for research; however, no bill has been enacted that would regulate EMF levels.

The 1999 NIEHS report to Congress suggested that the evidence supporting EMF exposure as a health hazard was insufficient to warrant aggressive regulatory actions. The report did suggest passive measures to educate the public and regulators on means aimed at reducing exposures. NIEHS also suggested the power industry continue its practice of siting lines to reduce public exposure to EMFs and to explore ways to reduce the creation of magnetic fields around lines.

The American Conference of Governmental Industrial Hygienists (ACGIH) is not a governmental regulatory agency; it is a professional organization that provides technical knowledge, advice, and guidance on occupational health and safety. ACGIH (1991) has published the Occupational Threshold Limit Values for 60 Hz EMFs shown in Table D.10-10, Occupational Threshold Limit Values for 60 Hz EMFs. According to WHO, the vast majority of studies have been conducted on power-frequency (50 and 60 Hz) magnetic fields, and as stated previously, the results of these studies are inconclusive.

Table D.10-10
Occupational Threshold Limit Values for 60 Hz EMFs

Category	Electric Field (kV/m)	Magnetic Field* (G)
Occupational exposure should not exceed for longer than 2 hours	25	10
Exposure limit for workers	20	1
Prudence dictates the use of protective clothing	15	N/A

Note: * 1 G = 1,000 mG (100 µT).

State Guidelines

Several states have adopted limits for electric field strength within transmission line ROWs. Florida and New York are the only states that currently limit the intensity of magnetic fields from transmission lines. These regulations include limits within the ROW and at the edge of the ROW, and cover a broad range of values. Table D.10-11, EMF Regulated Limits, lists the states regulating EMFs and their respective limits. The magnetic field limits were based on an

objective of preventing field levels from increasing beyond levels currently experienced by the public and are not based upon any link between scientific data and health risks (Morgan 1991).

Table D.10-11
EMF Regulated Limits (by State)

State	Electric Field (kV/m)	Magnetic Field (mG)	Location	Application
500 kV Lines	10		In right of way	Single Circuits
Florida (codified)	2	200	Edge of right of way	Single Circuit
	2	250	Edge of right of way	Double Circuit
230 kV Lines or less	8	—	In right of way	—
Florida (codified)	2	150	Edge of right of way	230 kV Lines or less
Minnesota	8	—	In right of way	> 200 kV
Montana (codified)	1	—	Edge of right of way	> 69 kV
	7	—	In right of way	Road crossings
New Jersey	3	Under consideration	Edge of right of way	Guideline for complaints
New York	1.6	200	Edge of right of way	> 125 kV, > 1 mile
	7	—	In right of way	Public roads
	11	—	In right of way	Public roads
	11.8	—	In right of way	Other terrain
North Dakota	9	—	In right of way	Informal
Oregon (codified)	9	—	In right of way	230 kV, 10 miles

Source: Public Utilities Commission of Texas 1992.

Elsewhere in the United States, several agencies and municipalities have taken action regarding EMF policies. These actions have been varied and include requirements that the fields be considered in the siting of new facilities. The manner in which EMFs are considered has taken several forms. In a few instances, a concept referred to as "prudent avoidance" has been formally adopted. Prudent avoidance, a concept proposed by Dr. Granger Morgan of Carnegie-Mellon University, is defined as "…limiting exposures which can be avoided with small investments of money and effort" (Morgan 1991). Some municipalities or regulating agencies have proposed limitations on field strength, requirements for siting of lines away from residences and schools, and, in some instances, moratoria on the construction of new transmission lines. The origin of these individual actions has been varied, with some initiated by regulators at the time of new transmission line proposals within their community, and some by public grassroots efforts.

California Department of Education's Standards for Siting New Schools Adjacent to Electric Power Lines Rated 50 kV and Above

The California Department of Education (CDE) evaluates potential school sites under a range of criteria, including environmental and safety issues. There are no EMF guidelines that apply to

existing school sites; this information is presented in order to demonstrate the range of existing guidelines that address EMFs.

Exposures to power-frequency EMFs are one of the criteria. CDE has established the following "setback" limits for locating any part of a school site property line near the edge of easements for any electrical power lines rated 50 kV and above as follows (CDE 2006).

Overhead transmission line easement setbacks:

- 100 feet for lines from 50 to 133 kV (interpreted by CDE as up to 200 kV)
- 150 feet for lines from 220 to 230 kV
- 350 feet for lines from 500 to 550 kV.

Underground transmission line easement setbacks:

- 25.0 feet for lines from 50 to 133 kV (interpreted by CDE as up to 200 kV)
- 37.5 feet for lines from 220 to 230 kV
- 87.5 feet for lines from 500 to 550 kV.

In order to underground existing overhead transmission lines as a mitigation measure, a setback exemption request would be necessary (CDE 2006). School districts with sites that do not meet CDE setbacks may still obtain construction approval from the state by submitting an EMF mitigation plan. The mitigation plan should consider possible reductions of EMFs from all potential sources, including power lines, internal wiring, office equipment, and mechanical equipment.

CPUC Guidelines

In 1991, the CPUC initiated an investigation into electric and magnetic fields associated with electric power facilities. This investigation explored the approach to potential mitigation measures for reducing public health impacts and possible development of policies, procedures, or regulations. Following input from interested parties, the CPUC implemented a decision (D.93-11-013) (CPUC 1993) which requires that utilities use "low cost or no-cost" mitigation measures for facilities requiring certification under General Order 131-D (CPUC 1995). The decision directed the utilities to use a 4% benchmark for low-cost mitigation. This decision also implemented a number of EMF measurement, research, and education programs, and provided the direction that led to the preparation of the DHS study described previously. The CPUC did not adopt any specific numerical limits or regulation on EMF levels related to electric power facilities.

In Decision D.93-11-013, the CPUC addressed mitigation of EMFs of utility facilities and implemented the following recommendations (CPUC 1993):

- No-cost and low-cost steps to reduce EMF levels
- Workshops to develop EMF design guidelines
- Uniform residential and workplace programs
- Stakeholder and public involvement
- A 4-year education program
- A 4-year nonexperimental and administrative research program
- An authorization of federal experimental research conducted under the National Energy Policy Act of 1992.

In 2006, the CPUC affirmed the low-cost/no-cost policy to mitigate EMF exposure from new utility transmission and substation projects (CPUC 2006a). This decision also adopted rules and policies to improve utility design guidelines for reducing EMFs that were issued in a separate report (CPUC 2006b). The CPUC stated that, "at this time we are unable to determine whether there is a significant scientifically verifiable relationship between EMF exposure and negative health consequences… As stated in the rulemaking initiating this proceeding, at this time we are unable to determine whether there is a significant scientifically verifiable relationship between EMF exposure and negative health consequences" (CPUC 2006a).

At this time, the CPUC has not implemented a general requirement that utilities include nonroutine mitigation measures or other mitigation measures that are based on numeric values of EMF exposure, and has not adopted any specific limits or regulations on EMF levels related to electric power facilities. The CPUC may determine mitigation measures on a project-by-project basis.

D.10.8.4 Consideration of Electric and Magnetic Fields—Proposed PROJECT

As previously discussed in this section, there remains a lack of consensus in the scientific community in regard to public health impacts related to EMFs at the levels expected from electric power facilities. Further, there are no federal or state standards limiting human exposure to EMFs from transmission lines or substation facilities in California. For those reasons, EMFs are not considered in this EIR/EIS as a CEQA/NEPA issue, and no impact significance is presented. This information is presented to allow understanding of the issue by the public and decision makers.

The specific EMF sources associated with the Proposed PROJECT consist of new transmission lines and substations, described as follows:

Transmission Lines

Transmission line elements of the Proposed PROJECT are:

- A loop-in to the 500 kV SWPL at the proposed ECO substation
- Approximately 13.3 miles of new 138 kV double-circuit transmission line connecting the ECO and rebuilt Boulevard substations (Starting at ECO Substation, the line would run in a westerly direction adjacent to the SWPL in a joint 300-foot-wide ROW to the existing SWPL, where it would turn to run northward in a dedicated 100-foot-wide ROW.)
- A 9.6-mile-long, single-circuit, 138 kV transmission line carrying up to 200 megawatts of power from the Tule Wind Project to Boulevard Substation (This 138 kV line would originate at a 34.5 kV/138 kV substation to carry power from a 34.5 kV overhead and underground collector system associated with the Tule Wind Project turbine generators.)
- A 2-mile-long gen-tie line (ESJ Gen-Tie), of which less than 1 mile would be in the U.S. (This line, carrying power from generation in Mexico, would be a new 500 kV, single-circuit transmission line or a new 230 kV, dual-circuit transmission line.)

The 138 kV transmission line connecting ECO and Boulevard substations has been divided into three segments based upon the type of structures being used and adjacent transmission circuits.

Substations

At substations, buswork, substation equipment, and transmission and distribution lines entering or exiting the site all contribute EMFs to the immediate environment. However, the most significant contributors to EMFs outside the substation fence are the associated overhead transmission and distribution lines. The previous description of transmission line magnetic fields also applies in the immediate area of substations.

The proposed ECO Substation Project involves construction of a new 500/230/138 kV substation for loop-in to the existing 500 kV SWPL, connection to a proposed 138 kV, double-circuit transmission line between ECO Substation and a rebuilt Boulevard Substation, and provision for the transfer of power into the SDG&E system from the new Tule Wind Project and ESJ Gen-Tie project generation sources. The ESJ Gen-Tie Project would, under various alternatives, connect at either 500 or 230 kV. The rebuilt Boulevard Substation would connect to the ECO Substation at 138 kV, to the 69 kV transmission system, and to one or more 12 kV distribution circuits. The Tule Wind Project incorporates a 34.5/138 kV substation. The ESJ Gen-Tie Project has no substations located in the United States.

The Proposed PROJECT is located in undeveloped land with few nearby residences and no identified sensitive receptors such as schools, licensed daycare centers, or hospitals. EMFs near the Proposed PROJECT occur in land that has been given several land use and zoning designations to reflect its rural nature.

ECO Substation Project

According to Table 4.9-1 in the PEA prepared for the ECO Substation Project, the land is zoned "General Rural" for the ECO Substation and the Boulevard Substation Rebuild sites, SWPL Loop-In, and several portions of the 138 kV transmission line; and "Open Space (S80)" or "Specific Plan (S88)" for portions of the 138 kV double-circuit transmission line between the ECO and Boulevard substations (SDG&E 2009). The majority of the ECO Substation Project is sited on land given General Plan land use designations, "Multiple Rural Use (one dwelling unit per 4, 8, or 20 acres), "Public/Semi-Public Lands" (for a 1.5-mile segment of the 138 kV transmission line), and "Specific Plan Area" (for a 1.3-mile segment).

The Boulevard Substation is located in the unincorporated town of Boulevard. Section 4.9.2 of the ECO Substation PEA states that the nearest residence is located much farther than 1,000 feet from the proposed ECO Substation; 5 residences are adjacent to the relocated Boulevard Substation at unspecified distances; and 25 residential structures are located within approximately 1,000 feet of the proposed 138 kV transmission line (SDG&E 2009). Approximate distances from the transmission line range from 115 to 950 feet (SDG&E 2009, Table 4.9.2). An additional residence and related buildings presently on the proposed Boulevard Substation Rebuild site would be removed.

Magnetic fields and possible magnetic field management measures were evaluated for the proposed ECO Substation Project along the existing and proposed circuit locations associated with the project. The results of the evaluation were provided in a Detailed Magnetic Field Management Plan, which was prepared to assess magnetic field potential and reduction measures for the new 138 kV transmission line (Gerald Bennett and Environmental Services 2009).

The proposed 138 kV transmission line would traverse land that is primarily privately owned and/or undeveloped; however, it would cross approximately 1.5 miles of BLM-managed land. For purposes of modeling magnetic field strength and assessing magnetic field reduction potential in the Detailed Magnetic Field Management Plan, the 138 kV transmission line was divided into three segments.

- **Segment 1** starts at the Boulevard Substation and heads in a southerly direction for approximately 4 miles to a location where the 138 kV transmission line would meet the

north side of the SWPL ROW near structure "Z50147." This segment consists solely of the twin-circuit 138 kV transmission line located in the center of a 100-foot ROW.

- **Segment 2** includes a 3-mile section heading east from SWPL pole "Z50147" toward the proposed ECO Substation. It includes the 138 kV transmission line in the center of a 100-foot ROW, which is north of and adjacent to the existing SWPL 200-foot ROW, making it 50 feet from the north ROW edge and 250 feet from the south ROW edge.
- **Segment 3** begins where the 138 kV transmission line would cross under the 500 kV SWPL line near structure "Z50163" and continues an additional 6 miles east to the proposed ECO Substation 138 kV yard. The twin-circuit tie-line would be situated in the center of a 100-foot ROW, which is now south of and adjacent to the existing SWPL 200-foot ROW, making it 50 feet from the south SWPL ROW edge and 250 feet from the north SWPL ROW edge.

Initial design of the 138 kV transmission line and review of existing phasing of the proposed 138 kV transmission line were modeled. The magnetic field values were calculated at the edges of the ROW for each segment; however, as Segment 1 would consist solely of the 138 kV circuit on the centerline of the 100-foot easement, and changing the phasing for this segment would not alter the modeling results, this segment was not modeled. As summarized in the Detailed Magnetic Field Management Plan prepared for the ECO Substation Project, under the initial design of the 138 kV transmission line, the magnetic field strength for Segment 2 would be about 66.24 mG at the left ROW and 62.43 mG at the right ROW. The expected magnetic strength for Segment 3 under the initial design of the 138 kV transmission line would be approximately 61.0 mG at the left ROW and 53.40 mG at the right ROW.

The CPUC requires SDG&E to apply its EMF Design Guidelines for Electrical Facilities to all new electric transmission projects in order to reduce public exposure to EMFs. Consistent with the SDG&E guidelines, the Detailed Magnetic Field Management Plan prepared for the project evaluated the effectiveness of phase arrangement as a field-reduction technique by calculating anticipated magnetic field values for a given phasing technique and comparing the values to the calculations for the design without the technique. Each of the three segments described previously was reviewed for suitable application of magnetic field reduction measures. To avoid an additional phase change between the proposed Boulevard and ECO substations, Segment 1 was assumed to be the same phase configuration as Segment 2.

The calculations of the Detailed Magnetic Field Management Plan show a significant reduction of magnetic fields at the edge of the combined ROW for the recommended change in phasing to C-A-B (top-to-bottom) for both circuits of the 138 kV transmission line in Segments 1 and 2. The recommended phasing in Segment 3 is B-A-C (top-to-bottom) for both circuits of the 138

kV transmission line. The recommended phasing is a no-cost implementation of CPUC policy that achieves the goals of a significant magnetic field reduction. Altering the phasing arrangement for the 138 kV transmission line along both sides of Segment 2 would provide optimal magnetic field reduction, resulting in an approximately 32% reduction in magnetic field strength on the left ROW and a 2.6% reduction from the right ROW. Changing the phasing arrangement of the 138 kV transmission line along both sides of Segment 3 would also provide optimal magnetic field reduction, with a 0.4% reduction in magnetic field strength on the left ROW and a 15.7% reduction in magnetic field strength on the right ROW.

Tule Wind Project

The Tule Wind Project is located on both publicly and privately owned lands, portions of which are administered by the BLM, California State Lands Commission (CSLC), Ewiiaapaayp Band of Kumeyaay Indians Reservation, and County of San Diego. A 138 kV, single-circuit transmission line would connect the Proposed Tule Wind Project's 34.5 kV/138 kV substation to Boulevard Substation. A number of private residences and camps are located in the general vicinity of the Tule Wind Project, including residences within 1,000 feet of the proposed 138 kV transmission line. Mapping of receptors indicates few or no residences within 1,000 feet of the Tule Wind Project transmission line.

The proposed 138 kV transmission line would cross an easterly portion of the California Conservation camp and run parallel to the eastern edge of the Rough Acres Ranch. EMFs would be produced from the collection circuits and the transmission line associated with the project. EMF produced is a function of current and distance between the conductors. Tight bundles of 34.5 kV conductors buried together would produce a field that reduces much more quickly than overhead circuits. The EMFs from any project electrical line would be reduced below measureable levels at a distance of approximately 200 to 300 feet. EMF calculations were prepared by Tri-Axis Engineering for the 138 kV and 34.5 kV transmission lines associated with the Tule Wind Project (Iberdrola Renewables, Inc. 2010, Appendix Q).

ESJ Gen-Tie Project

The ESJ Gen-Tie Project site is in the General Plan Regional Category 1.4 Rural Development Area and has the land use designation "Multiple Rural Use." Zoning for the Proposed ESJ Gen-Tie Project site is "General Rural (S-92)." The project also occupies land in the Southwest Area National Corridor of the National Interest Electric Transmission Corridor (as designated by the U.S. Department of Energy). The project applicant identifies residential use based on recreational vehicles or trailers on land west of the project site and 0.25 mile north of the international border (ESJ 2010).

Impacts from EMFs associated with the ESJ Gen-Tie Project alternative transmission lines were evaluated based on reported information on the health effects of EMF and the distances to potentially sensitive receptors. The potential for tower failure and outages was evaluated based on the project's compliance with regulatory safety criteria; impacts would be similar for both lattice towers and monopoles.

Once energized, the transmission line would generate EMFs, as do all alternating current circuits. The typical magnetic field strength for a 230 kV transmission line at a distance of 65 feet (20 meters) from the line is about 29.6 mG. The ROW for the double-circuit, 230 kV route would be a total of about 130 feet (39.6 meters) centered on the transmission line, and therefore 29.6 mG is the approximate strength expected at the edge of the ROW. Beyond that distance, the strength of the field would decrease rapidly and would be at about the same level of household magnetic fields between about 200 and 300 feet (61 and 91 meters) from the transmission line. Maintenance personnel and members of the public who are present in the immediate vicinity of the transmission line would be temporarily exposed to EMFs from the project. However, there are no public trails, recreational areas, or other developments to cause visitors to linger in the vicinity of the transmission lines; thus, little public exposure is expected, and exposure that does occur would be brief.

The project would be located in an undeveloped area, which would minimize the potential for public exposure. The nearest potential residence is an unoccupied mobile home approximately 1,600 feet (490 meters) to the west. EMF levels at this distance would be below typical household levels.

D.10.8.5 EMF Issues Applicable to Alternatives

The EMF field levels for alternatives evaluated in this EIR/EIS would be similar to those described for the Proposed PROJECT in Section D.10.8.4. As each alternative evaluated in this EIR/EIS would occur within substantially the same alignment as the Proposed PROJECT, the EMF issues applicable to the alternatives would not differ substantially from the Proposed PROJECT.

ECO Substation Project Alternatives

ECO Substation Alternative Site

Locating the ECO Substation 700 feet east of the proposed ECO Substation site would require relocating the SWPL Loop-In, 138 kV transmission line, and ESJ Gen-Tie line to reach the alternatively located substation. The following are the effects on EMFs resulting from the relocation of these components:

- Addition of approximately 700 feet (0.13 mile) to the length of the 138 kV, twin-circuit transmission line. This would represent a change of 1% in total line length with a corresponding change in the area in which environmental magnetic fields are altered by the proposed 138 kV transmission line. There would be no substantial change in magnitude of EMFs due to the greater length of the 138 kV transmission line. It is possible there could be differences in certain span lengths and line sags that would affect EMFs at certain locations as a result of altered tower positions, but these are likely to be minor and of no significance.
- Relocation of the substation would introduce EMFs at the alternate site to the same extent as at the proposed site. As there are no residences within 0.5 mile of the alternative substation site, and as the land use category remains an undeveloped environment that is zoned for "General Rural" use, the EMF considerations for the site are not substantially different from those for the proposed site.
- Relocation of the SWPL Loop-In would introduce EMFs in the alternate easement to the same extent as at the proposed easement. As there are no residences within 0.5 mile of the alternative easement, and as the land use category remains an undeveloped environment that is zoned for "General Rural" use, the EMF considerations for the relocated SWPL Loop-In transmission lines are not substantially different from those for the proposed SWPL Loop-In.
- Relocation of the ESJ Gen-Tie to the alternative ECO Substation site would introduce EMFs at the alternate site and along the transmission line easement to the same extent as for the ESJ Gen-Tie at the proposed ECO Substation site. As there are no residences within 0.5 mile of the alternative easement, and as the land use category remains an undeveloped environment that is zoned for "General Rural" use, the EMF considerations for the relocated easement of the ESJ Gen-Tie are not substantially different from those for the proposed easement.

In summary, none of the changes resulting from relocation of the ECO Substation to an alternative site 700 feet east of the proposed site creates a substantial change in EMFs with respect to the magnitude of power frequency magnetic fields at any location, or for the overall extent of EMF in the environment near the alternative project in comparison with EMF of the Proposed PROJECT.

ECO Partial Underground 138 kV Transmission Route Alternative

The alternative of undergrounding the approximately 4-mile-long section of the proposed 138 kV transmission line between the SWPL Loop-In and Boulevard Substation, rather than placing conductors overhead, would possibly increase magnetic fields at 3 feet above ground within several feet of the transmission line centerline and considerably reduce magnetic fields (at that

height above ground) for distances greater than several feet from the centerline when compared to an overhead line as was proposed. Various underground systems can be used. Design options include a single- or double-circuit, single- or three-phase cables, solid dielectric cable, and oil-filled pipe cable. The magnitude and extent of any increases and decreases depend on the type of underground cable system used, precision of current balance among the three phases, spacing and arrangement of the phases in a single-phase system, total load on the line, and depth at which the cable conductors are buried. Electric fields of underground transmission lines are very much lower than for overhead lines, and CPUC guidelines do not address electric fields.

In general, EMFs would be substantially reduced for an underground transmission line in comparison with an overhead transmission line carrying the same power, except within a zone several feet wide along the transmission line. EMFs on other parts of the project would not be affected by the underground section.

ECO Highway 80 138 kV Transmission Route Alternative

Placement of the 138 kV transmission line along Old Highway 80 would reduce the length of the 138 kV transmission line by 2.7 miles, representing approximately a 20% change in total line length, with a corresponding change in the area along the line in which environmental magnetic fields are altered by the 138 kV transmission line. It is probable there also would be changes in the magnitude of EMF as a result of the changed design for the 138 kV transmission line supporting structures. There is the potential to have some cancelation or enhancement of magnetic fields as a result of phasing and physical arrangement of the under-built distribution line. In addition, changes in EMFs that are likely to be minor and insignificant may occur as a result of differences in span lengths and line sags for the twin-circuit 138 kV transmission line with under-built 12 kV distribution line.

Land use along Old Highway 80 and potential residential, public, or commercial structures, if any, may affect the extent to which this alternative changes EMFs in the environment with respect to CPUC guidelines calling for consideration of steps to reduce EMFs in the environment.

ECO Highway 80 Underground 138 kV Transmission Route Alternative

This alternative also would represent a 20% reduction in the length and area affected by transmission line EMFs. EMFs in the environment along the 10.6-mile, 138 kV transmission line are likely to be reduced overall in comparison with the Proposed PROJECT because of the lower magnitude of magnetic fields created by the underground transmission line. In addition, placement of the 12 kV distribution line underground would reduce EMF magnitude compared to the Proposed PROJECT. Physical arrangement of the 138 kV and 12 kV cables can affect magnetic fields at 3 feet above ground, although such effects are likely to be minor.

In general, EMFs would be substantially reduced for the underground transmission line segment in comparison with an overhead transmission line carrying the same power, except within several feet along the transmission line and on both sides of the line. EMFs on other parts of the project would not be affected by the alternative underground section.

Tule Wind Project Alternatives

The Tule Wind Project description gives three alternate routes for the 138 kV single-circuit transmission line (i.e., Alternate Transmission Line 1, Alternate Transmission Line 2, and Alternate Transmission Line 3) and three possible locations for the 34.5/138 kV substation. The proposed route places the 138 kV transmission line at different distances from existing residences and camp facilities. Of the three alternative routes identified in the Applicant's Environmental Document for Tule Wind, Routes 2 and 3 are considered in the following as alternatives. Magnetic fields calculations were provided for the selected 138 kV transmission line design carrying maximum load current, but a field management plan specific for the alternatives was not given in the project description.

Tule Wind Alternative 1, Gen-Tie Route 2 with Collector Substation/O&M Facility on Rough Acres Ranch

Route 2 for the 138 kV transmission line appears to cross the Rough Acres Ranch within 1,000 feet of receptors on the ranch at the location where the line would turn eastward from the alternate site for the 34.5/138 kV substation to meet McCain Valley Road, where it turns south to meet Old Highway 80 before reaching the rebuilt Boulevard Substation. EMFs for this alternative may be increased at residences or permanent facilities on Rough Acres Ranch, and EMFs associated with the 138 kV transmission line would be eliminated for receptors north of Rough Acres Ranch along McCain Valley Road. These receptors appear to be a private residence and the Lark Canyon OHV staging area and campground on BLM land. EMFs from the 138 kV transmission line, but not the collector system, would be eliminated throughout the region designated for the transmission line in the Proposed Project, representing a reduction that is in proportion to the reduction of 138 kV transmission line length by 5 miles out of an original length of 19 miles.

Relocation of the collector substation to a site on the Rough Acres Ranch would increase EMFs in the area surrounding the substation compared to the Proposed Tule Wind Project, for which the substation is located several miles away. In addition, EMFs along the collector system would be likely to increase over EMF levels of the Proposed Tule Wind Project. This follows because the southerly location of the substation is effectively at the end of a long string of turbines. Consequently, all electric current produced by turbines north of the substation would flow together toward the substation in an additive manner, resulting in higher-summed current over

more of the collector system than if the substation were located at the center of a string of turbines. The magnitude of such an effect on EMFs over the project area depends on the relative amount of overhead and underground collector lines and the distribution of currents along the collector lines. The fact that there is an increase in overhead line length by 8 miles compared to a reduction by 1 mile in length of the underground lines, for which environmental magnetic fields are generally lower, also suggests an overall increase in EMFs.

Relocation of the O&M structure would not have a substantial effect on EMFs.

Tule Wind Alternative 2, Gen-Tie Route 2 Underground with Collector Substation/O&M Facility on Rough Acres Ranch

In general, EMFs would be substantially reduced for an underground transmission line in comparison with an overhead transmission line carrying the same power, except that EMFs may be greater within a zone several feet wide along the transmission line centerline. EMFs of this Alternative Route 2 would be reduced at locations along and on both sides of the underground section of the 138 kV transmission line for the entire distance from the alternative site of the collector substation site on Rough Acres Ranch to the rebuilt Boulevard Substation.

EMFs on other parts of the Proposed PROJECT would not be affected by this underground section.

The considerations given previously for Route 2 with respect to the relocation of the substation to a site on Rough Acres Ranch and elimination of a 138 kV transmission line north of Rough Acres Ranch apply for this alternative. The region where magnetic field strength is lower than for the overhead transmission line occurs outside a zone several feet wide on both sides of the centerline of the transmission line. The region of lower EMFs would extend over the entire length of the underground segment from the collector substation to the rebuilt Boulevard Substation.

Tule Wind Alternative 3, Gen-Tie Route 3 with Collector Substation/O&M Facility on Rough Acres Ranch

Route 3 has the same effects related to relocation of the 34.5/138 kV substation onto Rough Acres Ranch as described previously for Route 2. Placement of the 138 kV transmission line along an alternative route along Ribbonwood Road reduces line length by 4 miles. This represents an approximately 44% change in line length with a corresponding reduction in the total area over which the alternative gen-tie 138 kV transmission line affects environmental magnetic fields. Alternative Route 3 would eliminate EMF exposure from the Tule Wind Project 138 kV transmission line for any receptors located along the proposed route along McCain Valley Road and Old Highway 80. However, this alternative places a portion of the 138 kV

transmission line along Ribbonwood Road within approximately 1,000 feet of nine private residences. In addition, there appear to be roads typical of residential neighborhoods for the route along Ribbonwood Road and Jewel Valley Road and Old Highway 80 to the rebuilt Boulevard Substation, but for the segment south of the identified private residences, residences, if any, are not identified. EMF exposure may increase for receptors along Ribbonwood Road, including several identified private residences, and along Jewel Valley Road and Old Highway 80.

Present and future land uses along Ribbonwood Road and the potential for additional residential, public, or commercial structures, if any, could affect the overall change in EMF exposures to the public under Alternative Route 3.

Tule Wind Alternative 4, Gen-Tie Route 3 Underground with Collector Substation/O&M Facility on Rough Acres Ranch

In general, EMFs would be substantially reduced for an underground transmission line in comparison with an overhead transmission line carrying the same power, except that EMFs may be greater within a zone several feet wide along the transmission line centerline. Under this alternative, EMFs outside that zone would be reduced along the entire 5-mile underground section of the 138 kV transmission line that runs from the alternate collector substation west to Ribbonwood Road, south along Ribbonwood Road, and along Old Highway 80 to the rebuilt Boulevard Substation.

EMFs on other parts of the Proposed PROJECT would not be affected by this underground section.

Tule Wind Alternative 5, Reduction in Turbines

A reduction of 62 turbines would have a specific effect on EMFs along the route of the associated 34.5 kV collector system, causing a total elimination of EMFs for the affected section of the collector system. There also would be a reduction in EMFs along the route of the Tule Wind Project transmission line, along the route of the 138 kV transmission line connecting Boulevard and ECO substations, and along the SWPL route. These EMF reductions would reflect a reduction in current on the various transmission lines and in the substations proportional to the power that would have been generated by the removed 62 turbines in comparison with the Tule Wind Project's 134 turbines. The numerical change in EMFs would depend on the difference in power with all 134 turbines versus a project with 72 turbines.

The maximum and average power produced by individual turbines depends on turbine-generator capacity and wind conditions at the turbine location. Therefore, the proportional effect on the Tule Wind Project and its related EMFs by removing 62 turbines from the project is not accurately obtained by division of 62 by 134. Insofar as the maximum power that could be

generated by the Tule Wind Project is 200 megawatts, and this is a relatively small fraction of the total power that can be carried by the SWPL, the reduction in number of turbines would not cause a substantial change in EMFs of the SWPL. The reduction in EMFs of the 138 kV transmission line and 138 kV twin-circuit between Boulevard and ECO Substations would be minor, and the reduction in EMFs at the ECO Substation also would be minor.

ESJ Gen-Tie Project Alternatives

ESJ 230 kV Gen-Tie Underground Alternative

The alternative of undergrounding the 230 kV gen-tie line rather than placing it overhead along the same path as in the proposed ESJ Gen-Tie Project would reduce EMFs outside a zone several feet wide for all locations along the gen-tie line from its crossing of the international border to ECO Substation.

In general, EMFs would be substantially reduced for an underground transmission line in comparison with an overhead transmission line carrying the same power, except that EMFs may be greater within a zone several feet wide along the transmission line centerline. EMFs on other parts of the project would not be affected by the underground section.

ESJ Gen-Tie Overhead Alternative Alignment

Relocation of the easement of the ESJ gen-tie is not expected to introduce any substantial EMF differences on or near the easement leading to the proposed ECO Substation site as discussed previously under D.10.8.5.1, ECO Substation Alternative Site.

ESJ Gen-Tie Underground Alternative Alignment

In general, EMF would be substantially reduced for an underground transmission line in comparison with an overhead transmission line carrying the same power, except that EMF may be greater within a zone several feet wide along the transmission line centerline. If, in addition to relocation of the ECO Substation 700 feet to the east, the 230 kV ESJ gen-tie were placed underground, EMFs outside the zone surrounding the centerline would be substantially reduced for the entire length of the undergrounded section. The change in EMF would occur from the crossing at the international border to the ECO Substation. EMF on other parts of the project would not be affected by the underground section.

D.10.8.6 Summary Regarding EMF and Health Effects

After several decades of study regarding potential public health risks from exposure to power line EMF, research results remains inconclusive. Several national and international panels have conducted reviews of data from multiple studies and state that there is not sufficient evidence to

conclude that EMF causes cancer. In recent years, the IARC and the California DHS (Neutra et al. 2002) both classified EMF as a possible carcinogen. The WHO's Environmental Health Criteria Monograph 238 concluded that evidence for a link between Extremely Low Frequency (50 to 60 Hz) magnetic fields and childhood leukemia "is not strong enough to be considered causal, but [it is] sufficiently strong to remain a concern" (WHO 2007).

For other diseases, the WHO found there is inadequate or no evidence of health effects at low exposure levels. The information included in preceding sections identifies existing EMF exposures within North American environments, including California, which are widespread and cover a very broad range of field intensities and durations; and provides information on the EMF sources of the Proposed PROJECT. Presently there are no applicable regulations related to EMF levels from power lines; however, the CPUC has implemented and recently reconfirmed (CPUC 2006a) a decision requiring utilities to incorporate "low-cost" or "no-cost" measures for managing EMF from power lines. The proposed ECO Substation Project incorporates no-cost measures to mitigate magnetic fields and indicates the feasibility of a low-cost method for mitigation of magnetic fields along portions of the ROW near residences.

D.10.9 Other Field-Related Public Concerns

Additional concerns regarding the Proposed PROJECT related to power line fields include nuisance (e.g., corona and audible noise), EMI (e.g., impacts to radar, radio, television, and electrical equipment), potential health risk impacts (e.g., induced currents, shock hazards, and effects on cardiac pacemakers), and weather occurrences or natural disasters (e.g., wind, lightning). This section includes a discussion of the environmental impacts for these issues and mitigation measures, if appropriate. Effects of audible corona noise are evaluated in Section D.8, Noise.

D.10.9.1 CEQA Significance Criteria/Indicators under NEPA and Approach to Impact Assessment – Safety and Non-Magnetic Field Electric Power Field Issues

Definition and Use of CEQA Significance Criteria/Indicators under NEPA

Radio/Television/Electronic Equipment Interference

There are no local, state, or federal regulations with specific limits on high-frequency emissions from electric power facilities. Federal Communications Commission (FCC) regulations require that transmission lines be operated so that no harmful interference is produced (47 CFR 15, Section 15.5).

Induced Currents and Shock Hazards

The National Electrical Safety Code (NESC) specifies that transmission lines be designed to limit short-circuit current from vehicles or large objects near the line to no more than 5 milliampere. CPUC General Order 95 and the NESC also address shock hazards to the public by providing guidelines on minimum clearances to be maintained for practical safeguarding of persons during the installation, operation, or maintenance of overhead transmission lines and their associated equipment.

Cardiac Pacemakers

An area of concern related to electric fields from transmission lines has been the possibility of interference with cardiac pacemakers. In 2004, EPRI produced a report about EMF interference to implanted cardiac pacemakers and defibrillators in the frequency range of 1 Hz to 3 kHz (EPRI 2004). The report found that electric and magnetic fields could alter the function of pacemakers and implantable cardioverter defibrillators, but electric fields appear to be the most likely source of interference. The magnitude or intensity of the magnetic field required to alter the function of these devices varies widely with frequency and waveform.

There are two general types of pacemakers: asynchronous and synchronous. The asynchronous pacemaker pulses at a predetermined rate. It is generally immune to interference because it has no sensing circuitry and is not exceptionally complex. The synchronous pacemaker, however, pulses only when its sensing circuitry determines that pacing is necessary. Interference from a transmission line electric field may cause a spurious signal on the pacemaker's sensing circuitry. However, when these pacemakers detect a spurious signal, such as a 60 Hz signal, they are programmed to revert to an asynchronous or fixed-pacing mode of operation, returning to synchronous operation within a specified time after the signal is no longer detected. Cardiovascular specialists do not consider prolonged asynchronous pacing a problem, since some pacemakers are designed to operate that way. Periods of operation in this mode are commonly induced by cardiologists to check pacemaker performance. So, while transmission line electric fields may interfere with the normal operation of some of the older model pacemakers, the result of the interference is not harmful and is of short duration (EPRI 1985, 1979).

It has been reported that synchronous pacemakers can be affected by electric fields between 2 and 9 kV/m (EPRI 1985, 1979, 2004). As described previously, when a synchronous pacemaker is in a field in this range, a few older model pacemakers may revert to an asynchronous mode.

Wind, Fire, and Lightning

Transmission line structures used to support overhead transmission lines must meet the requirements of the CPUC (General Order No. 95). This design code and the NESC include loading requirements related to wind conditions.

Intentional Destructive Acts

Acts of sabotage or terrorism are rare. In the past, the relatively few sabotage acts have typically been carried out against electrical equipment and structures in remote areas, typically by domestic radical environmental groups. In today's geopolitical climate, attacks on the nation's electrical infrastructure by international terrorist groups or their allies are entirely possible. Protection of widely dispersed electrical generation equipment, substations, and thousands of miles of transmission lines from destructive acts is not practical. Damaged equipment and transmission lines may be quickly repaired or replaced in the same manner that storm-damaged equipment is returned to service.

D.10.9.2 Direct and Indirect Effects – Safety and Non-Magnetic Field Electric Power Field Issues

Table D.10-12, Safety and Non-Magnetic Field Electric Power Field Issue Impacts Identified for the ECO Substation, Tule Wind, and ESJ Gen-Tie Projects, lists the impacts identified for the Proposed PROJECT, along with the classification of each impact under CEQA. Detailed discussions of each impact and the specific locations where each is identified are presented in the following sections. Cumulative effects are analyzed in Section F of this EIR/EIS. Note that fire hazards are addressed separately in Section D.15, Fire and Fuels Management, and earthquakes and faults are addressed in Section D.13, Geology, Mineral Resources, and Soils.

Table D.10-12
Safety and Non-Magnetic Field Electric Power Field Issue Impacts

Impact No.	Description	Classification
ECO Substation – Safety and Non-Magnetic Field Electric Power Field Issue Impacts		
ECO-PS-1	Operation could result in EMI, including interference with radar, radio, television, and electrical equipment.	Class II
ECO-PS-2	Operation could result in induced currents and shock hazards in joint use corridors.	Class II
ECO-PS-3	Electric fields could affect cardiac pacemakers.	Class III
ECO-PS-4	Project structures could be affected by wind or lightning hazards.	Class III
ECO-PS-5	Facilities could suffer an outage from intentional destruction or terrorism.	Class III
Tule Wind – Safety and Non-Magnetic Field Electric Power Field Issue Impacts		
Tule-PS-1	Operation could result in EMI, including interference with radar, radio, television, and electrical equipment.	Class II
Tule-PS-2	Operation could result in induced currents and shock hazards in joint use corridors.	Class II

Table D.10-12 (Continued)

Impact No.	Description	Classification
Tule-PS-3	Electric fields could affect cardiac pacemakers.	Class III
Tule-PS-4	Project structures could be affected by wind or lightning hazards.	Class III
Tule-PS-5	Facilities could suffer an outage from intentional destruction or terrorism.	Class III
ESJ Gen-Tie – Safety and Non-Magnetic Field Electric Power Field Issue Impacts		
ESJ-PS-1:	Operation could result in EMI, including interference with radar, radio, television, and electrical equipment.	Class II
ESJ-PS-2	Operation could result in induced currents and shock hazards in joint use corridors.	Class II
ESJ-PS-3	Electric fields could affect cardiac pacemakers.	Class III
ESJ-PS-4	Project structures could be affected by wind or lightning hazards.	Class III
ESJ-PS-5	Facilities could suffer an outage from intentional destruction or terrorism.	Class III
Proposed PROJECT (COMBINED- including Campo, Manzanita, and Jordan Wind Energy)		
PS-1	Operation could result in EMI, including interference with radar, radio, television, and electrical equipment.	Class II
PS-2	Operation could result in induced currents and shock hazards in joint use corridors.	Class II
PS-3	Electric fields could affect cardiac pacemakers.	Class III
PS-4	Project structures could be affected by wind or lightning hazards.	Class III
PS-5	Facilities could suffer an outage from intentional destruction or terrorism.	Class III

Impact PS-1: Operation could result in EMI, including interference with radar, radio, television, and electrical equipment.

ECO Substation Project

High-frequency radio and television interference impacts are dependent upon several factors, including the strength of broadcast signals, and are anticipated to be very localized if they occur. Individual sources of adverse radio/television interference impacts can be located and corrected on the power lines. Conversely, magnetic field interference with electronic equipment such as computer monitors can be corrected through the use of software, shielding, or changes at the monitor location. Implementation of Mitigation Measures PS-1a, PS-1b, and PS-1c would mitigate the potential impacts of interference. Identified impacts would be adverse; therefore, mitigation has been provided that would mitigate these impacts. Under CEQA, impacts would be significant but can be mitigated to a level that is considered less than significant (Class II).

MM PS-1a: Minimize electromagnetic and public safety communications. The project shall be designed to minimize EMI (e.g., impacts to radar, microwave, television, and radio transmissions) and comply with FCC regulations. Signal strength studies shall be completed prior to construction and conducted when proposed locations have the potential to impact transmissions. Potential interference with

public safety communications systems (e.g., radio traffic related to emergency activities) shall be avoided.

In the event the project results in EMI, the applicant or the facility operator shall work with the owner of the impacted communications system to resolve the problem. Potential measures may include realigning the existing antenna or installing relays to transmit the signal around the project. Additional warning information may also need to be conveyed to aircraft with onboard radar systems so that echoes from project equipment can be quickly recognized.

MM PS-1b: **Limit conductor surface potential.** Prior to construction, the applicant or applicant's contractor(s) shall specify and implement designs that limit the conductor surface electric gradient in accordance with the Institute of Electrical and Electronic Engineers (IEEE) Radio Noise Design Guide.

MM PS-1c: **Document complaints of broadcast interference.** After energizing the transmission line, the applicant shall respond to and document all radio/television/equipment interference complaints received and the responsive actions taken. These records shall be made available to the appropriate regulatory agency for review upon request. The applicant shall refer all unresolved disputes to the approving agency.

Tule Wind Project

The Tule Wind Project may impact communication signals in two ways: (1) the wind turbines and their associated transmission lines may generate electromagnetic noise, which can interfere with telecommunications services such as radar, microwave, television, and radio transmissions; or, more commonly, (2) the wind turbines would create physical obstructions that distort communications signals. The types of communications systems that may be affected include microwave systems, off-air television broadcast signals, land mobile radio operations, and mobile telephone services.

As provided in APM TULE-PHS-4, the project would be planned to minimize electromagnetic noise (e.g., impacts to radar, microwave, television, and radio transmissions) and comply with FCC regulations. Potential interference with public safety communication systems (e.g., radio traffic related to emergency activities) is not anticipated to occur. An analysis to evaluate the potential effect of the project on existing nonfederal government microwave telecommunications systems was performed. The area was shown to have no potential conflicts between microwave paths and the proposed turbines.

The FAA and DOD have developed a preliminary screening tool to provide developers a preview of potential impacts to long-range and weather radar, military training routes, and special airspace. This internet-based tool requires users to input the latitude and longitude of the project area and then generates a map relating the area to any of the resources of the DOD, Department of Homeland Security, and National Oceanic and Atmospheric Administration listed previously. According to Pacific Wind Development, the Tule Wind Project area is identified on the DOD map as follows:

- A "Red" area, with a high likelihood to impact air defense and Department of Homeland Security radars, of which an aeronautical study is required
- A "Green" area, with minimal to no impact to Weather Surveillance Radar-1988 Doppler radar weather operation. National Telecommunication and Information Administration notification is advised.

The project's likelihood to impact air defense and Department of Homeland Security radars would be a significant impact. Implementation of Mitigation Measure PS-1d would require the preparation of an aeronautical study in order to evaluate potential impacts to air defense and Department of Homeland Security radars.

Through incorporation of APM TULE-PHS-4, which is clarified and superseded by Mitigation Measure PS-1a, the project would minimize EMI, conduct signal strength studies when proposed locations have the potential to impact transmissions, and avoid potential interference with public safety communication systems. Implementation of Mitigation Measures PS-1a, PS-1b, PS-1c, and PS-1d would mitigate impacts related to EMI. Identified impacts would be adverse; therefore, mitigation has been provided that would mitigate these impacts. Under CEQA, impacts would be significant but can be mitigated to a level that is considered less than significant (Class II).

MM PS-1d: **Aeronautical study.** During preliminary design of the wind turbines, the applicant shall prepare an aeronautical study in consultation with the FAA and DOD in order to evaluate potential impacts to air defense and Department of Homeland Security radars. As part of the study, the applicant shall submit to the FAA specific coordinates, heights, frequencies, and power measurements related to each proposed turbine in order for the FAA to evaluate whether any of the turbines would exceed obstruction standards for flight operations or result in a significant hazard to air navigation in the area during construction or operation. The applicant shall coordinate with the FAA and DOD to resolve any issues related to the project's potential to impact the aforementioned radar systems, which may involve the incorporation of appropriate design considerations,

including but not limited to, markings and lighting in accordance with FAA regulations. The applicant shall incorporate into the final design plans all conditions coordinated with the FAA and DOD for a determination of no hazard to air navigation.

ESJ Gen-Tie Project

As with the proposed ECO Substation Project, the ESJ Gen-Tie Project may result in high-frequency radio and television interference impacts, depending upon several factors, including the strength of broadcast signals. Interference is anticipated to be very localized if it occurs. Individual sources of adverse radio/television interference impacts can be located and corrected on the power lines. Conversely, magnetic field interference with electronic equipment such as computer monitors can be corrected through the use of software, shielding, or changes at the monitor location. Implementation of Mitigation Measures PS-1a, PS-1b, and PS-1c would mitigate the potential impacts of interference. Identified impacts would be adverse; therefore, mitigation has been provided that would mitigate these impacts. Under CEQA, impacts would be significant but can be mitigated to a level that is considered less than significant (Class II).

Proposed PROJECT

The Proposed PROJECT including the Campo, Manzanita, and Jordan wind energy projects may result in high frequency radio and television interference impacts, depending upon several factors including the strength of broadcast signals. Interference is anticipated to be very localized if it occurs. Individual sources of adverse radio/television interference impacts can be located and corrected on the power lines. Conversely, magnetic field interference with electronic equipment such as computer monitors can be corrected through the use of software, shielding, or changes at the monitor location.

The proposed wind turbines may impact communication signals in two ways: (1) the wind turbines and their associated transmission lines may generate electromagnetic noise, which can interfere with telecommunications services such as radar, microwave, television, and radio transmissions; or, more commonly, (2) the wind turbines would create physical obstructions that distort communications signals. The Tule Wind Project area is identified as having a high likelihood to impact Air Defense and Homeland Security radars and minimal to no impact to Weather Surveillance Radar-1988 Doppler radar weather operation. These are significant impacts. Potential interference with public safety communication systems (e.g., radio traffic related to emergency activities) is not anticipated to occur, and there are no potential conflicts between the paths of nongovernment microwave telecom systems and the proposed turbines.

Through incorporation of Mitigation Measure PS-1a, the Proposed PROJECT would minimize EMI, comply with FCC regulations, conduct signal strength studies when proposed locations

have the potential to impact transmissions, and avoid potential interference with public safety communication systems. Due to the potential for the wind turbines to impact Air Defense and Homeland Security radars, an aeronautical study would be prepared as provided for in Mitigation Measure PS-1d. Additional measures as provided in Mitigation Measures PS-1b and PS-1c would limit conductor surface potential and document complaints of broadcast interference. Implementation of Mitigation Measures PS-1a, PS-1b, PS-1c, and PS-1d would mitigate impacts related to EMI. Identified impacts would be adverse; therefore, mitigation has been provided that would mitigate these impacts. Under CEQA, impacts would be significant but can be mitigated to a level that is considered less than significant (Class II).

Impact PS-2: Operation could result in induced currents or shock hazards in joint use corridors.

ECO Substation Project

Induced currents and voltages on conducting objects near the proposed transmission lines represent a potential significant impact that can be mitigated. These impacts do not pose a threat in the environment if the conducting objects are properly grounded; therefore, implementation of Mitigation Measure PS-2 would mitigate the potential impacts of induced currents. Identified impacts would be adverse; therefore, mitigation has been provided that would mitigate these impacts. Under CEQA, impacts would be significant but can be mitigated to a level that is considered less than significant (Class II).

MM PS-2: **Determine proper grounding procedures and implement appropriate grounding measures.** As part of the project siting and construction process, the applicant or applicant's contractor(s) shall identify objects (such as fences, conductors, and pipelines) that have the potential for induced voltages and work with the affected parties to determine proper grounding procedures (Note: CPUC General Order 95 and the NESC do not have specific requirements for grounding). The applicant shall install all necessary grounding measures prior to energizing the line. At least 30 days prior to energizing the line, the applicant or applicant's contractor(s) shall notify in writing all property owners within and adjacent to the project's ROW regarding the date the line is to be energized, subject to the review and approval of the appropriate regulatory agency.

The written notice shall provide a contact person and telephone number for answering questions regarding the line and guidelines on what activities should be limited or restricted within the ROW. The written notice shall describe the nature and operation of the line, and the applicant's responsibilities with respect to grounding all conducting objects. In addition, the notice shall describe the

property owner's responsibilities with respect to notification for any new objects that may require grounding and guidelines for maintaining the safety of the ROW.

The applicant shall respond to and document all complaints received and the responsive action taken. These records shall be made available to the appropriate regulatory agency for review upon request. The applicant shall refer all unresolved disputes to the approving agency for resolution.

Tule Wind Project

Induced currents and voltages on conducting objects near the proposed transmission lines represent a potential significant impact that can be mitigated. These impacts do not pose a threat in the environment if the conducting objects are properly grounded; therefore, implementation of Mitigation Measure PS-2 would mitigate the potential impacts of induced currents. Identified impacts would be adverse; therefore, mitigation has been provided that would mitigate these impacts. Under CEQA, impacts would be significant but can be mitigated to a level that is considered less than significant (Class II).

ESJ Gen-Tie Project

Induced currents and voltages on conducting objects near the proposed transmission lines represent a potential significant impact that can be mitigated. These impacts do not pose a threat in the environment if the conducting objects are properly grounded; therefore, implementation of Mitigation Measure PS-2 would mitigate the potential impacts of induced currents. Identified impacts would be adverse; therefore, mitigation has been provided that would mitigate these impacts. Under CEQA, impacts would be significant but can be mitigated to a level that is considered less than significant (Class II).

Proposed PROJECT

Induced currents and voltages on conducting objects near the proposed transmission lines represent a potential significant impact that can be mitigated. These impacts do not pose a threat in the environment if the conducting objects are properly grounded; therefore, the Proposed PROJECT's implementation of Mitigation Measure PS-2, which requires that proper grounding procedures are identified and appropriate grounding measures are implemented, would mitigate potential impacts of induced currents. Appropriate grounding procedures and implementation measures would be required for any transmission line proposed under the Campo, Manzanita, and Jordan wind energy projects and therefore, impacts related to induced currents associated with these project would be similar. Identified impacts would be adverse; therefore, mitigation has been provided that would mitigate these impacts. Under CEQA, impacts would be significant but can be mitigated to a level that is considered less than significant (Class II).

Impact PS-3: Electric fields could affect cardiac pacemakers.

ECO Substation Project

The electric fields associated with the project's transmission lines may be of sufficient magnitude to impact operation of a few older model pacemakers, resulting in an asynchronous pacing of the unit. Cardiovascular specialists do not consider prolonged asynchronous pacing to be a problem; periods of operation in this mode are commonly induced by cardiologists to check pacemaker performance. Therefore, while the transmission line's electric field may impact operation of some older model pacemakers, the result of the interference is of short duration and identified impacts would not be adverse. Under CEQA, impacts would be considered less than significant (Class III).

Tule Wind Project

Similar to the proposed ECO Substation Project, the electric fields associated with the Tule Wind Project's transmission lines may be of sufficient magnitude to impact operation of a few older model pacemakers, resulting in an asynchronous pacing of the unit. Cardiovascular specialists do not consider prolonged asynchronous pacing to be a problem; periods of operation in this mode are commonly induced by cardiologists to check pacemaker performance. Therefore, while the transmission line's electric field may impact operation of some older model pacemakers, the result of the interference is of short duration and identified impacts would not be adverse. Under CEQA, impacts would be considered less than significant (Class III).

ESJ Gen-Tie Project

Once operational, the electric fields associated with the ESJ Gen-Tie Project may be of sufficient magnitude to impact the operation of pacemakers, but would not combine with the impacts of other projects because the impact would only occur in the immediate area of the ESJ Gen-Tie Project. The addition of other new lines (e.g., Sunrise Powerlink, SDG&E 138 kV transmission line) would not change the level of effect at any specific location. Similarly, impacts associated with EMF exposure from transmission lines would only occur in the immediate vicinity of the line. The ESJ Gen-Tie Project would not contribute to any cumulative public health impacts associated with EMFs due to its distance away from any potential receptors. Identified impacts would not be adverse. Under CEQA, impacts would be considered less than significant (Class III).

Proposed PROJECT

The electric fields associated with the Proposed PROJECT's transmission lines (including those of the Campo, Manzanita, and Jordan wind energy projects) may be of sufficient magnitude to impact operation of a few older model pacemakers, resulting in an asynchronous pacing of the unit. Cardiovascular specialists do not consider prolonged asynchronous pacing to be a problem;

periods of operation in this mode are commonly induced by cardiologists to check pacemaker performance. Therefore, while the transmission line's electric field may impact operation of some older model pacemakers, the result of the interference is of short duration and identified impacts would not be adverse. Under CEQA, impacts would be considered less than significant (Class III).

Impact PS-4: Project structures could be affected by wind or lightning hazards.

ECO Substation Project

SDG&E is required to design the transmission line in accordance with safety requirements of the CPUC's General Order 95 and other applicable requirements. Based on the conservative nature of these specifications, operation of transmission line towers, poles, and associated hardware would not pose a significant impact for hazards precipitated by high winds or fires initiated by arcing of downed conductors or lightning; therefore, identified impacts would not be adverse. Under CEQA, impacts would be considered less than significant (Class III). Substations have similar equipment and also transformers, capacitors, reactors, switches, buses, and line breakers that are located in a locked, fenced enclosure. Substation equipment impacts identified would not be adverse. Under CEQA, impacts would be considered less than significant for these hazards (Class III).

Staging areas containing equipment fuel and petroleum products, construction activities, and routine operations and maintenance activities (including driving vehicles in wildlands areas) would increase the potential risk of fire hazard in the area, however. Potential fire hazards are addressed in Section D.15, Fire and Fuels Management, of this EIR/EIS.

Tule Wind Project

Although considered rare, lightning strikes do occur to wind turbines due to their height and metal composition. Industry standards require wind turbines to withstand lightning strikes. Turbines are grounded and shielded to protect against lightning. Rotor blades are equipped with a strike sensor mounted in the blade tip. Additionally, a solid copper conductor from the blade tip to root provides a grounding path that leads to the grounding system at the base of the tower foundation. Although lightning is an unpredictable force of nature, lightning strikes are possible, and lightning protection is engineered in the equipment. Furthermore, the metal construction of the turbines would not be susceptible to catching fire and spreading to the vegetation below. Impacts due to high winds or lightning strikes are not adverse and would be considered less than significant under CEQA (Class III). Safety hazards related to failure or damage of the proposed wind towers are addressed in Impact HAZ-7 (see Section D.10.3.3). Further discussions regarding fire hazards are discussed in Section D.15 of this EIR/EIS.

ESJ Gen-Tie Project

The project would be designed in accordance with safety requirements similar to the CPUC's General Order 95 and other applicable requirements. Based on the conservative nature of these specifications, operation of transmission line towers, poles, and associated hardware would not pose an adverse impact for hazards precipitated by high winds or fires initiated by arcing of downed conductors or lightning. Under CEQA, impacts would be considered less than significant (Class III).

Proposed PROJECT

Although considered rare, lightning strikes do occur to wind turbines due to their height and metal composition. Industry standards require wind turbines to withstand lightning strikes. Turbines are grounded and shielded to protect against lightening. Rotor blades are equipped with a strike sensor mounted in the blade tip. Additionally, a solid copper conductor from the blade tip to root provides a grounding path that leads to the grounding system at the base of the tower foundation. Although lightning is an unpredictable force of nature, the potential for lightning strikes has necessitated that lightning protection is engineered in the equipment. Furthermore, the metal construction of the turbines would not be susceptible to catching fire and spreading to the vegetation below. Impacts due to high winds or lightning strikes would not be adverse. Under CEQA, impacts would be considered less than significant (Class III).

Impact PS-5: Facilities could suffer an outage from intentional destruction or terrorism.

ECO Substation Project

Acts of vandalism and theft are far more likely to occur to project facilities than sabotage or terrorism. Theft usually involves equipment at substations and switchyards that contain salvageable metal when metal prices are high. Vandalism usually occurs in remote areas and is more likely to involve spontaneous acts such as damaging equipment.

Protections against theft include basic security measures such as security lighting, fencing, and surveillance. The presence of workers, security guards, or local residents also discourages theft, but substations, wind generators, and other equipment are increasingly remotely controlled and are unmanned. The presence of high-voltage electricity also presents a certain deterrent to theft. Prosecution of thieves and monitoring of metal recycling operations may also deter theft of metals and equipment. Similarly, prosecution of vandals damaging transmission system equipment may discourage vandalism if it should become a problem. Potential impacts to transmission or substation facilities from outages resulting from intentional destruction would not be adverse. Under CEQA, impacts would be considered less than significant (Class III).

Tule Wind Project

Wind generation projects can be the subject of intentional destructive acts ranging from random vandalism and theft to sabotage and acts of terrorism intended to disable the facility. Acts of vandalism and theft are far more likely to occur than sabotage or terrorism. Theft usually involves equipment at substations and switchyards that contain salvageable metal when metal prices are high. Vandalism usually occurs in remote areas and is more likely to involve spontaneous acts such as damaging equipment. The project would incorporate theft deterrent and security mechanisms similar to the ECO Substation Project, including security lighting, fencing, and surveillance. Potential impacts to transmission or substation facilities from outages resulting from intentional destruction would not be adverse. Under CEQA, impacts would be considered less than significant (Class III).

ESJ Gen-Tie Project

Protections against vandalism would include surveillance, as appropriate. Potential impacts to transmission facilities from outages resulting from intentional destruction would not be adverse. Under CEQA, impacts would be considered less than significant (Class III).

Proposed PROJECT

The risk of damage to the Proposed PROJECT including the Campo, Manzanita, and Jordan wind energy projects from intentional destructive acts would be considered very low, in line with or less than the risk to similar generation facilities in the United States. Theft or opportunistic vandalism is more likely to occur than sabotage or terrorist acts, which are considered a negligible risk. The results of any such acts could be expensive to repair, but no substantial impacts to continued electrical service would be anticipated. Impacts expected from physical damage to the Proposed PROJECT or from loss of power delivery would not be adverse. Under CEQA, impacts would be considered less than significant (Class III).

D.10.9.3 Other Field-Related Concerns Applicable to Alternatives

Safety and non-EMF concerns for alternatives evaluated in this EIR/EIS would be similar to those described for the Proposed PROJECT in Section D.10.9.2. As each alternative evaluated in this EIR/EIS would occur within substantially the same alignment as the Proposed PROJECT, safety and non-EMF issues applicable to the alternatives would not differ significantly from the Proposed PROJECT.

D.10.10 Mitigation Monitoring, Compliance, and Reporting

Table D.10-13 presents the mitigation monitoring, compliance, and reporting program for hazards and public health/safety impacts for the ECO Substation, Tule Wind, and ESJ Gen-Tie projects. Section D.10.11 provides residual effects.

The proposed Campo, Manzanita, and Jordan wind energy projects would require preparation of a mitigation monitoring, compliance, and reporting program following project-specific environmental review and evaluation under all applicable environmental regulations once sufficient project-level information has been developed. By including these projects as components of the Proposed PROJECT, it allows the lead agencies to further consider broad policy options and develop mitigation measures that may be required for the project-specific impacts at an early stage in the process for the Campo, Manzanita, and Jordan wind energy projects.

Table D.10-13
Mitigation Monitoring, Compliance, and Reporting–ECO Substation, Tule Wind, and ESJ Gen-Tie Projects–Public Health and Safety

ECO Substation Project	
Mitigation Measure	**HAZ-1a. Hazardous Materials Management Plan.** Prior to approval of final construction plans, SDG&E shall prepare an HMMP for the construction phase of the project, which shall be reviewed and approved by the appropriate agency, and shall include the following components: • The plan shall identify all hazardous materials that will be present on any portion of the construction site, including, but not limited to, fuels, solvents, and petroleum products. The plan shall address storage, use, transportation, and disposal of each hazardous material anticipated to be used at the site. The plan shall establish inspection procedures, storage requirements, storage quantity limits, inventory control, nonhazardous product substitutes, and disposition of excess materials. • The plan shall identify secondary containment and spill prevention countermeasures, as well as a contingency plan to identify potential spill hazards, how to prevent their occurrence, and responses for different quantities of spills that may occur. Secondary containment and countermeasures shall be in place throughout construction so that if any leaks or spills occur, responses will be made immediately. • The plan shall identify materials (and their locations) that will be on site and readily accessible to clean up small spills (i.e., spill kit, absorbent pads, and shovels). Such emergency spill supplies and equipment shall be clearly marked and located adjacent to all areas of work and in construction staging areas. The plan shall identify the spill-response materials that must be maintained in vehicles and substation sites during construction and procedures for notification to the appropriate authorities. • The plan shall identify adequate safety and fire suppression devices for construction-related activities involving toxic, flammable, or explosive materials (including refueling construction vehicles and equipment). Such devices shall be readily accessible on the project site, as specified by the County's Fire Department and per the Uniform Building Code and Uniform Fire Code. The plan shall be included as part of all contractor specifications and final construction plans to the satisfaction of the appropriate agency. The plan shall also identify requirements for notices to federal and local emergency

Table D.10-13 (Continued)

	response authorities and shall include emergency response plans. Prior to construction, all contractor and subcontractor personnel shall receive training regarding the components of the HMMP, as well as applicable environmental laws and regulations related to hazardous materials handling, storage, and spill prevention and response measures. SDG&E shall designate an environmental field representative who shall be on site to observe, enforce, and document adherence to the plan for all construction activities. The plan shall be submitted to BLM and CPUC at least 30 days prior to construction.
Location	ECO Substation Project site and all project components
Monitoring/Reporting Action	CPUC and BLM will ensure that these measures are carried out throughout construction.
Responsible Agency	CPUC/BLM
Timing	Plan in effect throughout construction
Mitigation Measure	**HAZ-1b. Health and Safety Program.** Prior to approval of final construction plans, SDG&E shall prepare a Health and Safety Program for each applicable phase of the project (i.e., construction, operation, and decommissioning). The program shall be developed to protect both workers and the general public during all phases of the project. The program shall be developed to protect both workers and the general public during all phases of the project. The program shall be implemented to educate construction workers about the hazards associated with the particular project site and the safety measures that must be taken to prevent injury. The program shall include standards regarding occupational safety, safe work practices for each task, hazard training requirements for workers, and mechanisms for documentation and reporting. Regarding occupational health and safety, the program shall identify all applicable federal and state occupational safety standards; establish safe work practices for each task (e.g., requirements for personal protective equipment and safety harnesses; OSHA standard practices for safe use of explosives and blasting agents; and measures for reducing occupational EMF exposures); establish fire safety evacuation procedures; and define safety performance standards (e.g., electrical system standards and lightning protection standards). The program shall include a training program to identify hazard training requirements for workers for each task and establish procedures for providing required training to all workers. The program shall include worker training regarding how to identify potentially contaminated soils and/or groundwater. Documentation of training and a mechanism for reporting serious accidents to appropriate agencies shall be established. The program shall identify requirements for temporary fencing around staging areas, storage yards, and excavation areas during construction or decommissioning activities. Such fencing shall be designed to restrict transient traffic, off-highway vehicle (OHV) use, and the general public from accessing areas under construction and shall be removed once construction or decommissioning activities are complete. The program shall also identify appropriate measures to be taken during operation of the project to limit public access to hazardous facilities (e.g., permanent fencing, locked access). SDG&E shall designate an environmental field representative who shall be on site to observe, enforce, and document adherence to the program for all construction activities. The program shall be submitted to BLM and CPUC at least 30 days prior to construction.
Location	ECO Substation Project site and all project components
Monitoring/Reporting Action	CPUC and BLM will ensure that these measures are carried out throughout construction.
Responsible Agency	CPUC and BLM
Timing	Program in effect throughout construction

Table D.10-13 (Continued)

Mitigation Measure	**HAZ-1c. Waste Management Plan.** Prior to approval of final construction plans, SDG&E shall prepare a Waste Management Plan, which shall determine waste procedures, waste storage locations, waste-specific management and disposal requirements, inspection procedures, and waste minimization procedures. SDG&E shall designate an environmental field representative who shall be on site to observe, enforce, and document adherence to the plan for all construction activities. The plan shall be submitted to CPUC and BLM at least 30 days prior to construction.
Location	ECO Substation Project site and all project components
Monitoring/Reporting Action	CPUC and BLM will ensure that these measures are carried out throughout construction.
Responsible Agency	CPUC/BLM
Timing	Plan in effect throughout construction
Mitigation Measure	**HAZ-1d. Testing for environmental hazards associated with demolition.** Prior to demolition of the existing Boulevard Substation and surrounding buildings, soil, conduit, equipment, and structures shall be tested for environmental hazards, including oil, lead-based paint, and asbestos. An asbestos and lead-based paint survey shall be performed by a Cal/OSHA certified Asbestos Consultant/Site Surveillance Technician and a California Department of Public Health (CDPH) certified Inspector/Assessor, Sampling Technician, or Program Monitor. The survey shall be performed in accordance with the applicable state guidance to identify asbestos containing materials (ACM), asbestos containing construction materials (ACCM), and lead-based paint (LBP) as defined in the California Code of Regulations. If ACM, ACCM, or LBP is identified, abatement and disposal of all regulated materials shall be performed by a Cal/OSHA/CDPH certified abatement contractor prior to or during the demolition process.
Location	ECO Substation Project site and all project components
Monitoring/Reporting Action	CPUC and BLM will ensure that these measures are carried out throughout construction.
Responsible Agency	CPUC/BLM
Timing	Program in effect throughout construction
APM	**ECO-HAZ-2. Phase II Environmental Site Assessment.** A Phase II Environmental Site Assessment (ESA) shall be conducted on the existing Boulevard Substation parcel after the equipment has been removed in order to determine if there is any subsurface contamination. If required by the Phase II ESA investigation, remediation shall occur in accordance with all applicable federal, state, and local regulations.
Location	Existing Boulevard Substation site
Monitoring/Reporting Action	CPUC will ensure that these measures are carried out at the appropriate time.
Responsible Agency	CPUC
Timing	After equipment is removed from existing Boulevard Substation parcel
APM	**ECO-HAZ-3. Boulevard Substation Dismantling.** During the Boulevard Substation dismantling process, the existing equipment to be dismantled shall be tested in accordance with applicable federal, state, and local standards to determine appropriate recycle, reuse, or disposal alternatives for the equipment.
Location	Existing Boulevard Substation site
Monitoring/Reporting Action	CPUC will ensure that these measures are carried out at the appropriate time.
Responsible Agency	CPUC
Timing	During the Boulevard Substation dismantling process
Mitigation Measure	**HAZ-2a. Test for pesticides/herbicides on currently or historically farmed land.** In areas where the land has been or is currently being farmed, soil samples shall be collected

Table D.10-13 (Continued)

	and tested for herbicides, pesticides, and fumigants to determine the presence and extent of any contamination. The sampling and testing shall be prepared in consultation with the County Agricultural Commission, conducted by an appropriate California licensed professional, and sent to a California Certified Laboratory. A report documenting the areas proposed for sampling and the process used for sampling and testing shall be submitted to the CPUC and BLM for review and approval at least 60 days prior to construction. Results of the laboratory testing and recommended resolutions for handling and excavating materials found to exceed regulatory requirements shall be submitted to the CPUC and BLM at least 30 days prior to construction. If soil or groundwater contamination is confirmed as a result of soil sampling, SDG&E shall immediately stop work and notify the designated environmental field representative. All work in the contaminated area shall cease, the work shall be cordoned off, and the environmental field representative shall implement appropriate health and safety procedures. Work outside the contaminated area may continue as determined by the environmental field representative. Excavated materials containing elevated levels of pesticides or herbicides would require special handling and disposal according to procedures established by the regulatory agencies. Effective dust control suppression procedures shall be used in construction areas to reduce airborne emissions of these contaminants and reduce the risk of exposure to workers and the public. SDG&E shall contact the appropriate regulatory agencies for the State of California (e.g., DTSC or RWQCB) and the County to plan options for handling, treating, and/or disposing of materials.
Location	ECO Substation Project site and all project components
Monitoring/Reporting Action	CPUC and BLM will ensure that these measures are carried out at the appropriate time.
Responsible Agency	CPUC/BLM
Timing	Measures in effect throughout construction
Mitigation Measure	**HAZ-2b. Contingency plan for encountering contaminated soils.** If soil or groundwater contamination is suspected or encountered during grading or excavation activities (e.g., unusual soil discoloration or strong odor), SDG&E's contractors or subcontractors shall immediately stop work and notify the designated environmental field representative. All work in the area of suspected contamination shall cease, the work area shall be cordoned off, and the environmental field representative shall implement appropriate health and safety procedures. Work outside the suspected area may continue as determined by the environmental field representative. Preliminary samples of the soil, groundwater, or suspected material shall be taken by OSHA-trained individuals and sent to a California Certified Laboratory for characterization. If the sample testing determines that contamination is not present, work shall continue at the previously suspected site. If contamination is found above regulatory limits, however, the appropriate regulatory agency (e.g., RWQCB or Certified Unified Program Agency (CUPA)) responsible for responding to and providing environmental oversight of the region shall be notified in accordance with state or local regulations. In addition, SDG&E shall contact the appropriate regulatory agencies for the State of California (e.g., DTSC or RWQCB) and the County to plan options for handling, treating, and/or disposing of materials. Documentation of the suspected contamination shall be made in the form of a report, identifying the location and potential contamination, as well as the process used for sampling. Results of laboratory testing and recommended resolutions for handling and excavating materials found to exceed regulatory requirements shall be submitted to the BLM and CPUC for review and approval.
Location	ECO Substation Project site and all project components

Table D.10-13 (Continued)

Monitoring/Reporting Action	CPUC and BLM will ensure that these measures are carried out at the appropriate time.
Responsible Agency	CPUC/BLM
Timing	Plan in effect throughout construction
Mitigation Measure	**HAZ-3. Soil testing for lead contamination.** Soil samples shall be collected and tested from all excavation sites within 500 feet of any area identified as a current or historical shooting range to determine the presence of lead and extent of any contamination. The sampling and testing shall be conducted by a California licensed professional and sent to a California Certified Laboratory. A report documenting the areas proposed for sampling and the process used for sampling and testing shall be submitted to the project's lead agency for review and approval at least 60 days prior to excavation. Results of the laboratory testing and recommended resolutions for handling and excavating any materials found to exceed regulatory requirements shall be submitted to the project's lead agency 30 days prior to excavation. In addition, a Soil/Lead Contamination Handling Plan shall be prepared to address appropriate procedures in the event that lead contamination is discovered as a result of soil testing. This plan shall contain provisions for a lead-awareness program for workers, as well as guidelines for the identification, removal, transport, and disposal of lead-impacted materials. This plan shall also emphasize that all activities within, or in close proximity to, contaminated areas must follow applicable environmental and hazardous waste laws and regulations. This plan shall be submitted to the project's lead agency 30 days prior to excavation. Documentation of any confirmed or suspected contamination identified during testing or excavation shall be made in the form of a report identifying the location and potential contamination, as well as the process used for sampling. Results of laboratory testing and recommended resolutions for handling and excavating materials found to exceed regulatory requirements shall be submitted to the CPUC and BLM for review and approval.
Location	ECO Substation Project site
Monitoring/Reporting Action	CPUC and BLM will ensure that these measures are carried out at the appropriate time.
Responsible Agency	CPUC/BLM
Timing	Prior to initiating excavation or grading activities within 500 feet of any area identified as a current or historical shooting range; plan in effect throughout construction
Mitigation Measure	**HAZ-4a. Safety Assessment.** Prior to commencing construction activities, SDG&E shall conduct a safety assessment to describe potential safety issues associated with the project, how safety prevention measures would be implemented, where medical aid kits would be located, the appropriate response action for each safety hazard, and procedures for notifying the appropriate authorities. The assessment shall address issues such as site access, construction hazards, safe work practices, security, heavy equipment transportation, traffic management, emergency procedures, and fire control.
Location	ECO Substation Project site and all project components
Monitoring/Reporting Action	CPUC and BLM will ensure that these measures are carried out at the appropriate time.
Responsible Agency	CPUC/BLM
Timing	Plan in effect throughout construction
Mitigation Measure	**HAZ-4b. Blasting Plan.** If blasting is deemed necessary for the construction of project components, SDG&E shall conduct a pre-blast survey and prepare a blasting plan. A written report of the pre-blast survey and final blasting plan shall be provided to the appropriate regulatory agency and approved prior to any rock removal using explosives. In addition to any other requirements established by the appropriate regulatory agencies, the pre-blast survey and blasting plan shall meet the following conditions:

Table D.10-13 (Continued)

	The pre-blast survey shall be conducted for structures within a minimum radius of 1,000 feet from the identified blast site to be specified by SDG&E. Sensitive receptors that could reasonably be affected by blasting shall be surveyed as part of the pre-blast survey. Notification that blasting would occur shall be provided to all owners of the identified structures to be surveyed prior to commencement of blasting. The pre-blast survey shall be included in the final blasting plan. The final blasting plan shall address air-blast limits, ground vibrations, and maximum peak particle velocity for ground movement, including provisions to monitor and assess compliance with the air-blast, ground vibration, and peak particle velocity requirements. The blasting plan shall meet criteria established in Chapter 3 (Control of Adverse Effects) in the Blasting Guidance Manual of the U.S. Department of Interior Office of Surface Mining Reclamation and Enforcement. The blasting plan shall outline the anticipated blasting procedures for the removal of rock material at the proposed turbine foundation locations. The blasting procedures shall incorporate line control to full depth and controlled blasting techniques to create minimum breakage outside the line control and maximum rock fragmentation within the target area. Prior to blasting, all applicable regulatory measures shall be met. SDG&E, its general contractor, or its subcontractor (as appropriate) shall keep a record of each blast for at least 1 year from the date of the last blast.
Location	ECO Substation Project site and all project components
Monitoring/Reporting Action	CPUC and BLM will ensure that these measures are carried out at the appropriate time.
Responsible Agency	CPUC/BLM
Timing	Plan in effect throughout construction
Mitigation Measure	**HAZ-5a. Spill Prevention Control and Countermeasure Plan.** Prior to the facility going online and becoming operational, SDG&E shall prepare an SPCC plan to address proper procedures for storage, handling, spill response, and disposal of hazardous materials for the ongoing operation of the project. The SPCC plan shall meet all requirements outlined in Title 40 of the Code of Federal Regulations, Part 112 (40 CFR Part 112). The SPCC plan shall be reviewed and approved by the appropriate agency's engineering department and certified by a Registered Professional Engineer. The SPCC plan shall identify operating procedures that the facility will implement to prevent oil spills; control measures installed to prevent oil from leaving the project site; and countermeasures to contain, clean up, and mitigate the effects of an oil spill. A copy of the plan shall be kept on site at the facility and made available for review by the U.S. EPA Regional Administrator during normal business hours. The plan shall be amended as required under 40 CFR Part 112. The plan shall be reviewed, evaluated, and updated (if necessary) every 5 years.
Location	ECO Substation Project site and all project components
Monitoring/Reporting Action	CPUC and BLM will ensure that these measures are carried out at the appropriate time.
Responsible Agency	CPUC/BLM
Timing	Plan in effect throughout operation of facility
Mitigation Measure	**HAZ-5b. Hazardous Materials Business Plan.** Prior to the facility going online and becoming operational, SDG&E shall prepare an HMBP in accordance with all related requirements in California Health and Safety Code, Chapter 6.95, Articles 1 and 2. The HMBP shall contain basic information on the location, type, and quantity of hazardous materials stored or used by the facility, as well as the health risks associated with each hazardous material. The HMBP shall include three components: an inventory and site map, emergency response plan, and employee training. The plan shall be reviewed and recertified

Table D.10-13 (Continued)

	every year and amended as required by California Health and Safety Code, Chapter 6.95, Articles 1 and 2.
Location	ECO Substation Project site
Monitoring/Reporting Action	CPUC will ensure that these measures are carried out at the appropriate time.
Responsible Agency	CPUC
Timing	Plan in effect throughout operation of facility
Mitigation Measure	**PS-1a. Minimize electromagnetic and public safety communications.** The project shall be designed to minimize EMI (e.g., impacts to radar, microwave, television, and radio transmissions) and comply with FCC regulations. Signal strength studies shall be completed prior to construction and conducted when proposed locations have the potential to impact transmissions. Potential interference with public safety communications systems (e.g., radio traffic related to emergency activities) shall be avoided. In the event the project results in EMI, SDG&E or the facility operator shall work with the owner of the impacted communications system to resolve the problem. Potential measures may include realigning the existing antenna or installing relays to transmit the signal around the project. Additional warning information may also need to be conveyed to aircraft with onboard radar systems so that echoes from project equipment can be quickly recognized.
Location	ECO Substation Project site and all project components
Monitoring/Reporting Action	CPUC and BLM will ensure that these measures are carried out at the appropriate time.
Responsible Agency	CPUC/BLM
Timing	Measures in effect throughout construction and operation
Mitigation Measure	**PS-1b. Limit conductor surface potential.** Prior to construction, SDG&E shall specify and implement designs that limit the conductor surface electric gradient in accordance with the Institute of Electrical and Electronic Engineers (IEEE) Radio Noise Design Guide.
Location	ECO Substation Project site and all project components
Monitoring/Reporting Action	CPUC and BLM will ensure that these measures are carried out at the appropriate time.
Responsible Agency	CPUC/BLM
Timing	Measures in effect throughout construction and operation
Mitigation Measure	**PS-1c. Document complaints of broadcast interference.** After energizing the transmission line, SDG&E shall respond to and document all radio/television/equipment interference complaints received and the responsive actions taken. These records shall be made available to the appropriate regulatory agency for review upon request. SDG&E shall refer all unresolved disputes to the approving agency.
Location	ECO Substation Project site and transmission line
Monitoring/Reporting Action	CPUC and BLM will ensure that these measures are carried out at the appropriate time.
Responsible Agency	CPUC/BLM
Timing	Plan in effect throughout operation of facility
Mitigation Measure	**PS-2. Determine proper grounding procedures and implement appropriate grounding measures.** As part of the project siting and construction process, SDG&E's contractor(s) shall identify objects (such as fences, conductors, and pipelines) that have the potential for induced voltages and work with the affected parties to determine proper grounding procedures (Note: CPUC General Order 95 and the NESC do not have specific requirements for grounding). SDG&E shall install all necessary grounding measures prior to energizing the line. At least 30 days prior to energizing the line, SDG&E shall notify in writing all property owners within and adjacent to the project's ROW regarding the date the line is to be energized, subject to the review and approval of the appropriate regulatory agency.

Table D.10-13 (Continued)

	The written notice shall provide a contact person and telephone number for answering questions regarding the line and guidelines on what activities should be limited or restricted within the ROW. The written notice shall describe the nature and operation of the line, and SDG&E's responsibilities with respect to grounding all conducting objects. In addition, the notice shall describe the property owner's responsibilities with respect to notification for any new objects that may require grounding and guidelines for maintaining the safety of the ROW. SDG&E shall respond to and document all complaints received and the responsive action taken. These records shall be made available to the appropriate regulatory agency for review upon request. SDG&E shall refer all unresolved disputes to the approving agency for resolution.
Location	ECO Substation Project site and all project components
Monitoring/Reporting Action	CPUC and BLM will ensure that these measures are carried out at the appropriate time.
Responsible Agency	CPUC/BLM
Timing	As part of project siting and construction process, but prior to approval of final construction plans; plan in effect throughout construction and operation
Tule Wind Project	
Mitigation Measure	**HAZ-1a. Hazardous Materials Management Plan.** Prior to approval of final construction plans, Pacific Wind Development shall prepare an HMMP for the construction phase of the project, which shall be reviewed and approved by the appropriate agency, and shall include the following components: • The plan shall identify all hazardous materials that will be present on any portion of the construction site, including, but not limited to, fuels, solvents, and petroleum products. The plan shall address storage, use, transportation, and disposal of each hazardous material anticipated to be used at the site. The plan shall establish inspection procedures, storage requirements, storage quantity limits, inventory control, non-hazardous product substitutes, and disposition of excess materials. • The plan shall identify secondary containment and spill prevention countermeasures, as well as a contingency plan to identify potential spill hazards, how to prevent their occurrence, and responses for different quantities of spills that may occur. Secondary containment and countermeasures shall be in place throughout construction so that if any leaks or spills occur, responses will be made immediately. • The plan shall identify materials (and their locations) that will be on site and readily accessible to clean up small spills (i.e., spill kit, absorbent pads, and shovels). Such emergency spill supplies and equipment shall be clearly marked and located adjacent to all areas of work and in construction staging areas. The plan shall identify the spill-response materials that must be maintained in vehicles and substation sites during construction and procedures for notification to the appropriate authorities. • The plan shall identify adequate safety and fire suppression devices for construction-related activities involving toxic, flammable, or explosive materials (including refueling construction vehicles and equipment). Such devices shall be readily accessible on the project site, as specified by the County's Fire Department and per the Uniform Building Code and Uniform Fire Code. The plan shall be included as part of all contractor specifications and final construction plans to the satisfaction of the appropriate agency. The plan shall also identify requirements for notices to federal and local emergency response authorities, and shall include emergency response plans. Prior to construction, all contractor and subcontractor personnel shall receive training regarding the components of the HMMP, as well as applicable environmental laws and regulations related to hazardous materials handling, storage, and spill prevention and

Table D.10-13 (Continued)

	response measures. Pacific Wind Development shall designate an environmental field representative who shall be on site to observe, enforce, and document adherence to the plan for all construction activities. The plan shall be submitted to BLM, San Diego County, CSLC, BIA, and/or the Ewiiaapaayp Band of Kumeyaay Indians at least 30 days prior to construction.
Location	Tule Wind Project site
Monitoring/Reporting Action	BLM, San Diego County, CSLC, BIA, and/or the Ewiiaapaayp Band of Kumeyaay Indians, depending on the jurisdiction where the construction activities are completed, will ensure that the measures are implemented throughout construction.
Responsible Agency	BLM/San Diego County/CSLC/BIA/Ewiiaapaayp Band of Kumeyaay Indians
Timing	Plan in effect throughout construction
Mitigation Measure	**HAZ-1b. Health and Safety Program.** Prior to approval of final construction plans, Pacific Wind Development shall prepare a Health and Safety Program for each applicable phase of the project (i.e., construction, operation, and decommissioning). The program shall be developed to protect both workers and the general public during all phases of the project. The program shall be implemented to educate construction workers about the hazards associated with the particular project site and the safety measures that must be taken to prevent injury. The program shall include standards regarding occupational safety, safe work practices for each task, hazard training requirements for workers, and mechanisms for documentation and reporting. Regarding occupational health and safety, the program shall identify all applicable federal and state occupational safety standards; establish safe work practices for each task (e.g., requirements for personal protective equipment and safety harnesses; OSHA standard practices for safe use of explosives and blasting agents; and measures for reducing occupational EMF exposures); establish fire safety evacuation procedures; and define safety performance standards (e.g., electrical system standards and lightning protection standards). The program shall include a training program to identify hazard training requirements for workers for each task and establish procedures for providing required training to all workers. The program shall include worker training regarding how to identify potentially contaminated soils and/or groundwater. Documentation of training and a mechanism for reporting serious accidents to appropriate agencies shall be established. The program shall identify requirements for temporary fencing around staging areas, storage yards, and excavation areas during construction or decommissioning activities. Such fencing shall be designed to restrict transient traffic, off-highway vehicle (OHV) use, and the general public from accessing areas under construction and shall be removed once construction or decommissioning activities are complete. The program shall also identify appropriate measures to be taken during operation of the project to limit public access to hazardous facilities (e.g., permanent fencing, locked access). Pacific Wind Development shall designate an environmental field representative who shall be on site to observe, enforce, and document adherence to the program for all construction activities. The program shall be submitted to BLM, San Diego County, CSLC, BIA, and/or the Ewiiaapaayp Band of Kumeyaay Indians at least 30 days prior to construction.
Location	Tule Wind Project site
Monitoring/Reporting Action	BLM, San Diego County, CSLC, BIA, and/or the Ewiiaapaayp Band of Kumeyaay Indians, depending on the jurisdiction where the construction activities are completed, will ensure that the measures are implemented throughout construction.
Responsible Agency	BLM/ San Diego County/CSLC/BIA/Ewiiaapaayp Band of Kumeyaay Indians
Timing	Program in effect throughout construction

Table D.10-13 (Continued)

Mitigation Measure	**HAZ-1c. Waste Management Plan.** Prior to approval of final construction plans, Pacific Wind Development shall prepare a Waste Management Plan, which shall determine waste procedures, waste storage locations, waste-specific management and disposal requirements, inspection procedures, and waste minimization procedures. Pacific Wind Development shall designate an environmental field representative who shall be on site to observe, enforce, and document adherence to the plan for all construction activities. The plan shall be submitted to BLM, San Diego County, CSLC, BIA, and/or the Ewiiaapaayp Band of Kumeyaay Indians, depending on the jurisdiction where the construction activities are completed, at least 30 days prior to construction.
Location	Tule Wind Project site
Monitoring/Reporting Action	BLM, San Diego County, CSLC, BIA, and/or the Ewiiaapaayp Band of Kumeyaay Indians, depending on the jurisdiction where the construction activities are completed, will ensure that these measures are carried out at the appropriate time.
Responsible Agency	BLM/San Diego County/CSLC/BIA/Ewiiaapaayp Band of Kumeyaay Indians
Timing	Plan in effect throughout construction
Mitigation Measure	**HAZ-2a. Test for pesticides/herbicides on currently or historically farmed land.** In areas where the land has been or is currently being farmed, soil samples shall be collected and tested for herbicides, pesticides, and fumigants to determine the presence and extent of any contamination. The sampling and testing shall be prepared in consultation with the County Agricultural Commission, conducted by an appropriate California licensed professional, and sent to a California Certified Laboratory. A report documenting the areas proposed for sampling and the process used for sampling and testing shall be submitted to BLM, San Diego County, CSLC, BIA, and/or the Ewiiaapaayp Band of Kumeyaay Indians, depending on the jurisdiction where the construction activities are completed, for review and approval at least 60 days prior to construction. Results of the laboratory testing and recommended resolutions for handling and excavating materials found to exceed regulatory requirements shall be submitted to BLM, San Diego County, CSLC, BIA, and/or the Ewiiaapaayp Band of Kumeyaay Indians, depending on the jurisdiction where the construction activities are completed, at least 30 days prior to construction. If soil or groundwater contamination is confirmed as a result of soil sampling, Pacific Wind Development shall immediately stop work and notify the designated environmental field representative. All work in the contaminated area shall cease, the work shall be cordoned off, and the environmental field representative shall implement appropriate health and safety procedures. Work outside the contaminated area may continue as determined by the environmental field representative. Excavated materials containing elevated levels of pesticides or herbicides would require special handling and disposal according to procedures established by the regulatory agencies. Effective dust control suppression procedures shall be used in construction areas to reduce airborne emissions of these contaminants and reduce the risk of exposure to workers and the public. Pacific Wind Development shall contact the appropriate regulatory agencies for the State of California (e.g., DTSC or RWQCB) and the County to plan options for handling, treating, and/or disposing materials.
Location	Tule Wind Project site and all project components
Monitoring/Reporting Action	BLM, San Diego County, CSLC, BIA, and/or the Ewiiaapaayp Band of Kumeyaay Indians, depending on the jurisdiction where the construction activities are completed, will ensure that these measures are carried out at the appropriate time.
Responsible Agency	BLM/San Diego County/CSLC/BIA/Ewiiaapaayp Band of Kumeyaay Indians
Timing	Measures in effect throughout construction

Table D.10-13 (Continued)

Mitigation Measure	**HAZ-2b. Contingency plan for encountering contaminated soils.** If soil or groundwater contamination is suspected or encountered during grading or excavation activities (e.g., unusual soil discoloration or strong odor), Pacific Wind Development shall immediately stop work and notify the designated environmental field representative. All work in the area of suspected contamination shall cease, the work area shall be cordoned off, and the environmental field representative shall implement appropriate health and safety procedures. Work outside the suspected area may continue as determined by the environmental field representative. Preliminary samples of the soil, groundwater, or suspected material shall be taken by OSHA-trained individuals and sent to a California Certified Laboratory for characterization. If the sample testing determines that contamination is not present, work shall continue at the previously suspected site. If contamination is found above regulatory limits, however, the appropriate regulatory agency (e.g., RWQCB or Certified Unified Program Agency (CUPA)) responsible for responding to and providing environmental oversight of the region shall be notified in accordance with state or local regulations. In addition, Pacific Wind Development shall contact the appropriate regulatory agencies for the State of California (e.g., DTSC or RWQCB) and the County to plan options for handling, treating, and/or disposing of materials. Documentation of the suspected contamination shall be made in the form of a report, identifying the location and potential contamination, as well as the process for sampling. Results of laboratory testing and recommended resolutions for handling and excavating materials found to exceed regulatory requirements shall be submitted to BLM, San Diego County, CSLC, BIA, and/or the Ewiiaapaayp Band of Kumeyaay Indians, depending on the jurisdiction where the construction activities are completed, for review and approval.
Location	Tule Wind Project site and all project components
Monitoring/Reporting Action	BLM, San Diego County, CSLC, BIA, and/or the Ewiiaapaayp Band of Kumeyaay Indians, depending on the jurisdiction where the construction activities are completed, will ensure that these measures are carried out at the appropriate time.
Responsible Agency	BLM/San Diego County/CSLC/BIA/Ewiiaapaayp Band of Kumeyaay Indians
Timing	Plan in effect throughout construction
Mitigation Measure	**HAZ 3. Soil testing for lead contamination.** Soil samples shall be collected and tested from all excavation sites within 500 feet of any area identified as a current or historical shooting range to determine the presence of lead and extent of any contamination. The sampling and testing shall be conducted by a California licensed professional and sent to a California Certified Laboratory. A report documenting the areas proposed for sampling and the process used for sampling and testing shall be submitted to the project's lead agency for review and approval at least 60 days prior to excavation. Results of the laboratory testing and recommended resolutions for handling and excavating any materials found to exceed regulatory requirements shall be submitted to the project's lead agency 30 days prior to excavation. In addition, a Soil/Lead Contamination Handling Plan shall be prepared to address appropriate procedures in the event that lead contamination is discovered as a result of soil testing. This plan shall contain provisions for a lead-awareness program for workers, as well as guidelines for the identification, removal, transport, and disposal of lead-impacted materials. This plan shall also emphasize that all activities within, or in close proximity to, contaminated areas must follow applicable environmental and hazardous waste laws and regulations. This plan shall be submitted to the project's lead agency 30 days prior to excavation. Documentation of any confirmed or suspected contamination identified during testing or excavation shall be made in the form of a report identifying the location and potential

Table D.10-13 (Continued)

	contamination, as well as the process used for sampling. Results of laboratory testing and recommended resolutions for handling and excavating materials found to exceed regulatory requirements shall be submitted to BLM, San Diego County, CSLC, BIA, and/or the Ewiiaapaayp Band of Kumeyaay Indians, depending on the jurisdiction where the construction activities are completed, for review and approval.
Location	Tule Wind Project site
Monitoring/Reporting Action	BLM, San Diego County, CSLC, BIA, and/or the Ewiiaapaayp Band of Kumeyaay Indians, depending on the jurisdiction where the construction activities are completed, will ensure that these measures are carried out at the appropriate time.
Responsible Agency	BLM/San Diego County/CSLC/BIA/Ewiiaapaayp Band of Kumeyaay Indians
Timing	Plan in effect throughout construction
Mitigation Measure	**HAZ-4a. Safety Assessment.** Prior to commencing construction activities, Pacific Wind Development shall conduct a safety assessment to describe potential safety issues associated with the project, how safety prevention measures would be implemented, where medical aid kits would be located, the appropriate response action for each safety hazard, and procedures for notifying the appropriate authorities. The assessment shall address issues such as site access, construction hazards, safe work practices, security, heavy equipment transportation, traffic management, emergency procedures, and fire control.
Location	Tule Wind Project site and all project components
Monitoring/Reporting Action	BLM, San Diego County, CSLC, BIA, and/or the Ewiiaapaayp Band of Kumeyaay Indians, depending on the jurisdiction where the construction activities are completed, will ensure that these measures are carried out at the appropriate time.
Responsible Agency	BLM/San Diego County/CSLC/BIA/Ewiiaapaayp Band of Kumeyaay Indians
Timing	Plan in effect throughout construction
Mitigation Measure	**HAZ-4b. Blasting Plan.** If blasting is deemed necessary for the construction of project components, Pacific Wind Development shall conduct a pre-blast survey and prepare a blasting plan. A written report of the pre-blast survey and final blasting plan shall be provided to the appropriate regulatory agency and approved prior to any rock removal using explosives. In addition to any other requirements established by the appropriate regulatory agencies, the pre-blast survey and blasting plan shall meet the following conditions: The pre-blast survey shall be conducted for structures within a minimum radius of 1,000 feet from the identified blast site to be specified by Pacific Wind Development. Sensitive receptors that could reasonably be affected by blasting shall be surveyed as part of the pre-blast survey. Notification that blasting would occur shall be provided to all owners of the identified structures to be surveyed prior to commencement of blasting. The pre-blast survey shall be included in the final blasting plan. The final blasting plan shall address air-blast limits, ground vibrations, and maximum peak particle velocity for ground movement, including provisions to monitor and assess compliance with the air-blast, ground vibration, and peak particle velocity requirements. The blasting plan shall meet criteria established in Chapter 3 (Control of Adverse Effects) in the Blasting Guidance Manual of the U.S. Department of Interior Office of Surface Mining Reclamation and Enforcement. The blasting plan shall outline the anticipated blasting procedures for the removal of rock material at the proposed turbine foundation locations. The blasting procedures shall incorporate line control to full depth and controlled blasting techniques to create minimum breakage outside the line control and maximum rock fragmentation within the target area. Prior to blasting, all applicable regulatory measures shall be met. Pacific Wind Development, its general contractor, or its subcontractor (as appropriate) shall keep a record of each blast for at least 1 year from the date of the last blast.

Table D.10-13 (Continued)

Location	Tule Wind Project site and all project components
Monitoring/Reporting Action	BLM, San Diego County, CSLC, BIA, and/or the Ewiiaapaayp Band of Kumeyaay Indians, depending on the jurisdiction where the construction activities are completed, will ensure that these measures are carried out at the appropriate time.
Responsible Agency	BLM/San Diego County/CSLC/BIA/Ewiiaapaayp Band of Kumeyaay Indians
Timing	Plan in effect throughout construction
Mitigation Measure	**HAZ-5a. Spill Prevention Control and Countermeasure Plan.** Prior to the facility going online and becoming operational, Pacific Wind Development shall prepare an SPCC plan to address proper procedures for storage, handling, spill response, and disposal of hazardous materials for the ongoing operation of the project. The SPCC plan shall meet all requirements outlined in Title 40 of the Code of Federal Regulations, Part 112 (40 CFR Part 112). The SPCC plan shall be reviewed and approved by the appropriate agency's engineering department and certified by a Registered Professional Engineer. The SPCC plan shall identify operating procedures that the facility will implement to prevent oil spills; control measures installed to prevent oil from leaving the project site; and countermeasures to contain, clean up, and mitigate the effects of an oil spill. A copy of the plan shall be kept on site at the facility and made available for review by the U.S. EPA Regional Administrator during normal business hours. The plan shall be amended as required under 40 CFR Part 112. The plan shall be reviewed, evaluated, and updated (if necessary) every 5 years.
Location	Tule Wind Project site
Monitoring/Reporting Action	BLM, San Diego County, CSLC, BIA, and/or the Ewiiaapaayp Band of Kumeyaay Indians, depending on the jurisdiction where the construction activities are completed, will ensure that these measures are carried out at the appropriate time.
Responsible Agency	BLM/San Diego County/CSLC/BIA/Ewiiaapaayp Band of Kumeyaay Indians
Timing	Plan in effect throughout operation of facility
Mitigation Measure	**HAZ-5b. Hazardous Materials Business Plan.** Prior to the facility going online and becoming operational, Pacific Wind Development shall prepare an HMBP in accordance with all related requirements in California Health and Safety Code, Chapter 6.95, Articles 1 and 2. The HMBP shall contain basic information on the location, type, and quantity of hazardous materials stored or used by the facility, as well as the health risks associated with each hazardous material. The HMBP shall include three components: an inventory and site map, emergency response plan, and employee training. The plan shall be reviewed and recertified every year and amended as required by California Health and Safety Code, Chapter 6.95, Articles 1 and 2.
Location	Tule Wind Project site
Monitoring/Reporting Action	BLM, San Diego County, CSLC, BIA, and/or the Ewiiaapaayp Band of Kumeyaay Indians, depending on the jurisdiction where the construction activities are completed, will ensure that these measures are carried out at the appropriate time.
Responsible Agency	BLM/San Diego County/CSLC/BIA/Ewiiaapaayp Band of Kumeyaay Indians
Timing	Plan in effect throughout operation of facility
Mitigation Measure	**HAZ-6. Wind Turbine Safety Zone and Setbacks.** Prior to approval of final construction plans and as part of the Health and Safety Program for the project described in Mitigation Measure HAZ-1b, Pacific Wind Development shall establish a safety zone or setback for wind turbine generators from residents and occupied buildings, roads, ROWs, transmission lines, and other public access areas sufficient to prevent accidents from the operation of wind turbine generators. A plan detailing the proposed setbacks and safety zone shall be submitted to BLM, San Diego County, CSLC, BIA, and/or the Ewiiaapaayp Band of

Table D.10-13 (Continued)

	Kumeyaay Indians, depending on the jurisdiction where the construction activities are completed, for review and approval at least 30 days prior to construction. The plan shall include a graphic depicting each turbine and the associated buffer safety zone. The industry standard safety setback is 1.25 times the total height for wind turbines and 1.0 times the total height for towers that do not contain moving parts. The safety setback shall be measured from the center of the wind turbine or tower to the edge of the ROW or easement, or if no ROW or easement is established, to the line or structure in question. The applicant shall ensure that all towers and structures comply with appropriate safety zones and setbacks. Pacific Wind Development or its contractor shall designate an environmental field representative who shall be on site to observe, enforce, and document adherence to approved setbacks and safety zones.
Location	Tule Wind Project site
Monitoring/Reporting Action	BLM, San Diego County, CSLC, BIA, and/or the Ewiiaapaayp Band of Kumeyaay Indians, depending on the jurisdiction where the construction activities are completed, will ensure that these measures are carried out during project construction.
Responsible Agency	BLM/San Diego County/CSLC/BIA/Ewiiaapaayp Band of Kumeyaay Indians
Timing	Plan in effect throughout construction
Mitigation Measure	**PS-1a. Minimize electromagnetic and public safety communications.** The project shall be designed to minimize EMI (e.g., impacts to radar, microwave, television, and radio transmissions) and comply with FCC regulations. Signal strength studies shall be completed prior to construction and conducted when proposed locations have the potential to impact transmissions. Potential interference with public safety communications systems (e.g., radio traffic related to emergency activities) shall be avoided. In the event the project results in EMI, Pacific Wind Development or the facility operator shall work with the owner of the impacted communications system to resolve the problem. Potential measures may include realigning the existing antenna or installing relays to transmit the signal around the project. Additional warning information may also need to be conveyed to aircraft with onboard radar systems so that echoes from project equipment can be quickly recognized.
Location	Tule Wind Project site
Monitoring/Reporting Action	BLM, San Diego County, CSLC, BIA, and/or the Ewiiaapaayp Band of Kumeyaay Indians, depending on the jurisdiction where the construction activities are completed, will ensure that these measures are carried out during project construction.
Responsible Agency	BLM/San Diego County/CSLC/BIA/Ewiiaapaayp Band of Kumeyaay Indians
Timing	Measures in effect throughout construction and operation
Mitigation Measure	**PS-1b. Limit conductor surface potential.** Prior to construction, Pacific Wind Development shall specify and implement designs that limit the conductor surface electric gradient in accordance with the Institute of Electrical and Electronic Engineers (IEEE) Radio Noise Design Guide.
Location	Tule Wind Project site
Monitoring/Reporting Action	BLM, San Diego County, CSLC, BIA, and/or the Ewiiaapaayp Band of Kumeyaay Indians, depending on the jurisdiction where the construction activities are completed, will ensure that these measures are carried out during project construction.
Responsible Agency	BLM/San Diego County/CSLC/BIA/Ewiiaapaayp Band of Kumeyaay Indians
Timing	Prior to construction; measures in effect throughout construction and operation
Mitigation Measure	**PS-1c. Document complaints of broadcast interference.** After energizing the transmission line, Pacific Wind Development shall respond to and document all

Table D.10-13 (Continued)

	radio/television/equipment interference complaints received and the responsive actions taken. These records shall be made available to the appropriate regulatory agency for review upon request. Pacific Wind Development shall refer all unresolved disputes to the approving agency.
Location	Tule Wind Project site
Monitoring/Reporting Action	BLM, San Diego County, CSLC, BIA, and/or the Ewiiaapaayp Band of Kumeyaay Indians, depending on the jurisdiction where the construction activities are completed, will ensure that these measures are carried out during project construction.
Responsible Agency	BLM/San Diego County/ CSLC/BIA/Ewiiaapaayp Band of Kumeyaay Indians
Timing	Plan in effect throughout operation of facility
Mitigation Measure	**PS-1d. Aeronautical study.** During preliminary design of the wind turbines, Pacific Wind Development shall prepare an aeronautical study in consultation with the FAA and DOD in order to evaluate potential impacts to air defense and Department of Homeland Security radars. As part of the study, Pacific Wind Development shall submit to the FAA specific coordinates, heights, frequencies, and power measurements related to each proposed turbine in order for the FAA to evaluate whether any of the turbines would exceed obstruction standards for flight operations or result in a significant hazard to air navigation in the area during construction or operation. Pacific Wind Development shall coordinate with the FAA and DOD to resolve any issues related to the project's potential to impact the aforementioned radar systems, which may involve the incorporation of appropriate design considerations, including but not limited to, markings and lighting in accordance with FAA regulations. Pacific Wind Development shall incorporate into the final design plans all conditions coordinated with the FAA and DOD for a determination of no hazard to air navigation.
Location	Tule Wind Project site
Monitoring/Reporting Action	BLM, San Diego County, CSLC, BIA, and/or the Ewiiaapaayp Band of Kumeyaay Indians, depending on the jurisdiction where the construction activities are completed, will ensure that these measures are carried out during project construction.
Responsible Agency	BLM/San Diego County/CSLC/BIA/Ewiiaapaayp Band of Kumeyaay Indians
Timing	During preliminary design of the proposed wind turbines
Mitigation Measure	**PS-2. Determine proper grounding procedures and implement appropriate grounding measures.** As part of the project siting and construction process, Pacific Wind Development shall identify objects (such as fences, conductors, and pipelines) that have the potential for induced voltages and work with the affected parties to determine proper grounding procedures (Note: CPUC General Order 95 and the NESC do not have specific requirements for grounding). Pacific Wind Development shall install all necessary grounding measures prior to energizing the line. At least 30 days prior to energizing the line, Pacific Wind Development shall notify in writing all property owners within and adjacent to the project's ROW regarding the date the line is to be energized, subject to the review and approval of the appropriate regulatory agency. The written notice shall provide a contact person and telephone number for answering questions regarding the line and guidelines on what activities should be limited or restricted within the ROW. The written notice shall describe the nature and operation of the line, and the applicant's responsibilities with respect to grounding all conducting objects. In addition, the notice shall describe the property owner's responsibilities with respect to notification for any new objects that may require grounding and guidelines for maintaining the safety of the ROW. Pacific Wind Development shall respond to and document all complaints received and the

Table D.10-13 (Continued)

	responsive action taken. These records shall be made available to the appropriate regulatory agency for review upon request. Pacific Wind Development shall refer all unresolved disputes to the approving agency for resolution.
Location	Tule Wind Project site
Monitoring/Reporting Action	BLM, San Diego County, CSLC, BIA, and/or the Ewiiaapaayp Band of Kumeyaay Indians, depending on the jurisdiction where the construction activities are completed, will ensure that these measures are carried out during project construction.
Responsible Agency	BLM/San Diego County/CSLC/BIA/Ewiiaapaayp Band of Kumeyaay Indians
Timing	As part of project siting and construction process, but prior to approval of final construction plans; plan in effect throughout construction and operation
ESJ Gen-Tie Project	
Mitigation Measure	**HAZ-1a. Hazardous Materials Management Plan.** Prior to approval of final construction plans, Energia Sierra Juarez U.S. Transmission, LLC, shall prepare an HMMP for the construction phase of the project, which shall be reviewed and approved by the appropriate agency, and shall include the following components: The plan shall identify all hazardous materials that will be present on any portion of the construction site, including, but not limited to, fuels, solvents, and petroleum products. The plan shall address storage, use, transportation, and disposal of each hazardous material anticipated to be used at the site. The plan shall establish inspection procedures, storage requirements, storage quantity limits, inventory control, nonhazardous product substitutes, and disposition of excess materials. The plan shall identify secondary containment and spill prevention countermeasures, as well as a contingency plan to identify potential spill hazards, how to prevent their occurrence, and responses for different quantities of spills that may occur. Secondary containment and countermeasures shall be in place throughout construction so that if any leaks or spills occur, responses will be made immediately. The plan shall identify materials (and their locations) that will be on site and readily accessible to clean up small spills (i.e., spill kit, absorbent pads, and shovels). Such emergency spill supplies and equipment shall be clearly marked and located adjacent to all areas of work and in construction staging areas. The plan shall identify the spill-response materials that must be maintained in vehicles and substation sites during construction and procedures for notification to the appropriate authorities. The plan shall identify adequate safety and fire suppression devices for construction-related activities involving toxic, flammable, or explosive materials (including refueling construction vehicles and equipment). Such devices shall be readily accessible on the project site, as specified by the County's Fire Department and per the Uniform Building Code and Uniform Fire Code. The plan shall be included as part of all contractor specifications and final construction plans to the satisfaction of the appropriate agency. The plan shall also identify requirements for notices to federal and local emergency response authorities, and shall include emergency response plans. Prior to construction, all contractor and subcontractor personnel shall receive training regarding the components of the HMMP, as well as applicable environmental laws and regulations related to hazardous materials handling, storage, and spill prevention and response measures. Energia Sierra Juarez U.S. Transmission, LLC, shall designate an environmental field representative who shall be on site to observe, enforce, and document adherence to the plan for all construction activities. The plan shall be submitted to the County at least 30 days prior to construction.
Location	ESJ Gen-Tie Project site

Table D.10-13 (Continued)

Monitoring/Reporting Action	San Diego County will ensure that these measures are carried out throughout construction.
Responsible Agency	San Diego County
Timing	Plan in effect throughout construction
Mitigation Measure	**HAZ-1b. Health and Safety Program.** Prior to approval of final construction plans Energia Sierra Juarez U.S. Transmission, LLC, shall prepare a Health and Safety Program for each applicable phase of the project (i.e., construction, operation, and decommissioning). The program shall be developed to protect both workers and the general public during all phases of the project. The program shall be implemented to educate construction workers about the hazards associated with the particular project site and the safety measures that must be taken to prevent injury. The program shall include standards regarding occupational safety, safe work practices for each task, a training program to identify hazard training requirements for workers and establish procedures for providing training to all workers, and mechanisms for documentation and reporting. Regarding occupational health and safety, the program shall identify all applicable federal and state occupational safety standards; establish safe work practices for each task (e.g., requirements for personal protective equipment and safety harnesses; OSHA standard practices for safe use of explosives and blasting agents; and measures for reducing occupational EMF exposures); establish fire safety evacuation procedures; and define safety performance standards (e.g., electrical system standards and lightning protection standards). The program shall include a training program to identify hazard training requirements for workers for each task and establish procedures for providing required training to all workers. The program shall include worker training regarding how to identify potentially contaminated soils and/or groundwater. Documentation of training and a mechanism for reporting serious accidents to appropriate agencies shall be established. The program shall identify requirements for temporary fencing around staging areas, storage yards, and excavation areas during construction or decommissioning activities. Such fencing shall be designed to restrict transient traffic, off-highway vehicle (OHV) use, and the general public from accessing areas under construction and shall be removed once construction or decommissioning activities are complete. The program shall also identify appropriate measures to be taken during operation of the project to limit public access to hazardous facilities (e.g., permanent fencing, locked access). Energia Sierra Juarez U.S. Transmission, LLC, shall designate an environmental field representative who shall be on site to observe, enforce, and document adherence to the program for all construction activities. The program shall be submitted to the County at least 30 days prior to construction.
Location	ESJ Gen-Tie Project site
Monitoring/Reporting Action	San Diego County will ensure that these measures are carried out throughout construction.
Responsible Agency	San Diego County
Timing	Program in effect throughout construction.
Mitigation Measure	**HAZ-3. Soil testing for lead contamination.** Soil samples shall be collected and tested from all excavation sites within 500 feet of any area identified as a current or historical shooting range to determine the presence of lead and extent of any contamination. The sampling and testing shall be conducted by a California licensed professional and sent to a California Certified Laboratory. A report documenting the areas proposed for sampling and the process used for sampling and testing shall be submitted to the project's lead agency for review and approval at least 60 days prior to excavation. Results of the laboratory testing and recommended resolutions for handling and excavating any materials found to exceed regulatory requirements shall be submitted to the project's lead agency 30 days prior to excavation.

Table D.10-13 (Continued)

	In addition, a Soil/Lead Contamination Handling Plan shall be prepared to address appropriate procedures in the event that lead contamination is discovered as a result of soil testing. This plan shall contain provisions for a lead1awareness program for workers, as well as guidelines for the identification, removal, transport, and disposal of lead-impacted materials. This plan shall also emphasize that all activities within, or in close proximity to, contaminated areas must follow applicable environmental and hazardous waste laws and regulations. This plan shall be submitted to the project's lead agency 30 days prior to excavation. Documentation of any confirmed or suspected contamination identified during testing or excavation shall be made in the form of a report identifying the location and potential contamination, as well as the process used for sampling. Results of laboratory testing and recommended resolutions for handling and excavating materials found to exceed regulatory requirements shall be submitted to the County of San Diego for review and approval.
Location	ESJ Gen-Tie Project site
Monitoring/Reporting Action	San Diego County will ensure that these measures are carried out during the appropriate time.
Responsible Agency	San Diego County
Timing	Plan in effect throughout construction
Mitigation Measure	**HAZ-4a. Safety Assessment.** Prior to commencing construction activities, Energia Sierra Juarez U.S. Transmission, LLC, shall conduct a safety assessment to describe potential safety issues associated with the project, how safety prevention measures would be implemented, where medical aid kits would be located, the appropriate response action for each safety hazard, and procedures for notifying the appropriate authorities. The assessment shall address issues such as site access, construction hazards, safe work practices, security, heavy equipment transportation, traffic management, emergency procedures, and fire control.
Location	ESJ Gen-Tie Project site
Monitoring/Reporting Action	San Diego County will ensure that these measures are carried out during the appropriate time.
Responsible Agency	San Diego County
Timing	Plan in effect throughout construction
Mitigation Measure	**HAZ_5a. Spill Prevention Control and Countermeasure Plan.** Prior to the facility going online and becoming operational, Energia Sierra Juarez U.S. Transmission, LLC, shall prepare an SPCC plan to address proper procedures for storage, handling, spill response, and disposal of hazardous materials for the ongoing operation of the project. The SPCC plan shall meet all requirements outlined in Title 40 of the Code of Federal Regulations, Part 112 (40 CFR Part 112). The SPCC plan shall be reviewed and approved by the appropriate agency's engineering department and certified by a Registered Professional Engineer. The SPCC plan shall identify operating procedures that the facility will implement to prevent oil spills; control measures installed to prevent oil from leaving the project site; and countermeasures to contain, clean up, and mitigate the effects of an oil spill. A copy of the plan shall be kept on site at the facility and made available for review by the U.S. EPA Regional Administrator during normal business hours. The plan shall be amended as required under 40 CFR Part 112. The plan shall be reviewed, evaluated, and updated (if necessary) every 5 years.
Location	ESJ Gen-Tie Project site
Monitoring/Reporting Action	San Diego County will ensure that these measures are carried out during the appropriate time.

Table D.10-13 (Continued)

Responsible Agency	San Diego County
Timing	Plan in effect throughout operation of facility
Mitigation Measure	**HAZ_5b. Hazardous Materials Business Plan.** Prior to the facility going online and becoming operational, Energia Sierra Juarez U.S. Transmission, LLC, shall prepare an HMBP in accordance with all related requirements in California Health and Safety Code, Chapter 6.95, Articles 1 and 2. The HMBP shall contain basic information on the location, type, and quantity of hazardous materials stored or used by the facility, as well as the health risks associated with each hazardous material. The HMBP shall include three components: an inventory and site map, emergency response plan, and employee training. The plan shall be reviewed and recertified every year and amended as required by California Health and Safety Code, Chapter 6.95, Articles 1 and 2.
Location	ESJ Gen-Tie Project site
Monitoring/Reporting Action	San Diego County will ensure that these measures are carried out during the appropriate time.
Responsible Agency	San Diego County
Timing	Plan in effect throughout operation of facility
Mitigation Measure	**PS-1a. Minimize electromagnetic and public safety communications.** The project shall be designed to minimize EMI (e.g., impacts to radar, microwave, television, and radio transmissions) and comply with Federal Communications Commission (FCC) regulations. Signal strength studies shall be completed prior to construction and conducted when proposed locations have the potential to impact transmissions. Potential interference with public safety communications systems (e.g., radio traffic related to emergency activities) shall be avoided. In the event the project results in EMI, Energia Sierra Juarez U.S. Transmission, LLC, or the facility operator shall work with the owner of the impacted communications system to resolve the problem. Potential measures may include realigning the existing antenna or installing relays to transmit the signal around the project. Additional warning information may also need to be conveyed to aircraft with onboard radar systems so that echoes from project equipment can be quickly recognized.
Location	ESJ Gen-Tie Project site
Monitoring/Reporting Action	San Diego County will ensure that these measures are carried out during the appropriate time.
Responsible Agency	San Diego County
Timing	Measures in effect throughout construction and operation
Mitigation Measure	**PS-1b. Limit conductor surface potential.** Prior to construction, Energia Sierra Juarez U.S. Transmission, LLC, shall specify and implement designs that limit the conductor surface electric gradient in accordance with the Institute of Electrical and Electronic Engineers (IEEE) Radio Noise Design Guide.
Location	ESJ Gen-Tie Project site
Monitoring/Reporting Action	San Diego County will ensure that these measures are carried out during the appropriate time.
Responsible Agency	San Diego County
Timing	Measures in effect throughout construction and operation
Mitigation Measure	**PS-1c. Document complaints of broadcast interference.** After energizing the transmission line, Energia Sierra Juarez U.S. Transmission, LLC, shall respond to and document all radio/television/equipment interference complaints received and the responsive actions taken. These records shall be made available to the appropriate

Table D.10-13 (Continued)

	regulatory agency for review upon request. The applicant shall refer all unresolved disputes to the approving agency.
Location	ESJ Gen-Tie Project site
Monitoring/Reporting Action	San Diego County will ensure that these measures are carried out during the appropriate time.
Responsible Agency	San Diego County
Timing	Plan in effect throughout operation of facility
Mitigation Measure	**PS-2. Determine proper grounding procedures and implement appropriate grounding measures.** As part of the project siting and construction process, Energia Sierra Juarez U.S. Transmission, LLC,shall identify objects (such as fences, conductors, and pipelines) that have the potential for induced voltages and work with the affected parties to determine proper grounding procedures (Note: CPUC General Order 95 and the NESC do not have specific requirements for grounding). Energia Sierra Juarez U.S. Transmission, LLC, shall install all necessary grounding measures prior to energizing the line. At least 30 days prior to energizing the line, Energia Sierra Juarez U.S. Transmission, LLC, shall notify in writing all property owners within and adjacent to the project's ROW regarding the date the line is to be energized, subject to the review and approval of the appropriate regulatory agency. The written notice shall provide a contact person and telephone number for answering questions regarding the line and guidelines on what activities should be limited or restricted within the ROW. The written notice shall describe the nature and operation of the line, and the applicant's responsibilities with respect to grounding all conducting objects. In addition, the notice shall describe the property owner's responsibilities with respect to notification for any new objects that may require grounding and guidelines for maintaining the safety of the ROW. Energia Sierra Juarez U.S. Transmission, LLC, shall respond to and document all complaints received and the responsive action taken. These records shall be made available to the appropriate regulatory agency for review upon request. Energia Sierra Juarez U.S. Transmission, LLC, shall refer all unresolved disputes to the approving agency for resolution.
Location	ESJ Gen-Tie Project site
Monitoring/Reporting Action	San Diego County will ensure that these measures are carried out during the appropriate time.
Responsible Agency	San Diego County
Timing	Plan in effect throughout construction and operation

D.10.11 Residual Effects

Implementation of the mitigation measures presented in Section D.10.10 would mitigate all impacts. Under CEQA, all impacts would be mitigated to a level that is considered less than significant; therefore, no residual impacts would occur for the Proposed PROJECT or alternatives.

D.10.12 References

3 CCR 6700 et seq. Title 3. Food and Agriculture; Division 6: Pesticides and Pest Control Operations; Chapter 3: Pest Control Operations; Subchapter 3: Pesticide Worker Safety; Article 1: General Scope and Purpose.

8 CCR 337–340. Title 8: Industrial Relations; Division 1: Department of Industrial Relations; Chapter 3.2: California Occupational Safety and Health Regulations (Cal/OSHA); Subchapter 1: Regulations of The Director Of Industrial Relations; Article 5: Hazardous Substances Information and Training.

8 CCR 5194. Title 8: Industrial Relations; Division 1: Department of Industrial Relations; Chapter 4: Division of Industrial Safety; Subchapter 7: General Industry Safety Orders; Article 109: Hazardous Substances and Processes. Hazard Communication.

14 CCR 15000–15387 and Appendix A–L. Guidelines for Implementation of the California Environmental Quality Act, as amended.

14 CFR 77. Federal Aviation Regulations: Objects Affecting Navigable Airspace.

15 U.S.C. 2601–2671. Toxic Substances Control Act of 1976. Public Law 94-469.

19 CCR 2620–2734. Hazardous Material Release Reporting, Inventory, and Response Plans.

22 CCR 66261. Title 22: Social Security; Division 4.5: Environmental Health Standards for the Management of Hazardous Waste; Chapter 11: Identification and Listing of Hazardous Waste; Article 1: General.

29 CFR 110.119. Occupational Safety and Health Administration Process Safety Management of Highly Hazardous Chemicals.

29 CFR 1910. Title 29: Labor; Subtitle B: Regulations Relating to Labor; Chapter XVII: Occupational Safety and Health Administration, Department of Labor; Part 1910: Occupational Safety and Health Standards.

40 CFR 68.130. Chemical Accident Prevention Provisions: List of Substances.

40 CFR 112. Title 40: Protection of Environment; Chapter I: Environmental Protection Agency; Subchapter D: Water Programs; Part 112: Oil Pollution Prevention.

40 CFR 261.31–261.33. Hazardous Wastes from Non-Specific Sources; Discarded Commercial Chemical Products, Off-Specification Species, and Spill Residue Thereof.

42 U.S.C. 6901 et seq. Resource Conservation and Recovery Act (RCRA) of 1976.

42 U.S.C. 7401 et seq. Federal Clean Air Act, as amended.

42 U.S.C. 9601–9675. Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980

47 CFR 15. FCC Regulations: Telecommunication, Radio Frequency Devices.

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