3.14 PUBLIC HEALTH AND SAFETY

This section identifies potential public health and safety issues related to the construction, operation and maintenance, and decommissioning of the project. On the basis of expected major activities associated with the project, the following section identifies issues such as occupational hazards related to the construction of the turbines and associated facilities and operational hazards that have the potential to occur throughout the life of the project such as tower or rotor failures, exposure to electromagnetic fields (EMFs), aviation safety interference and electromagnetic interference (EMI), shadow effects, ice shedding, and lightning strikes. EMF calculations were calculated by Tri-Axis Engineering and are presented in Appendix Q.

Discussions regarding hazards, hazardous materials and substances are addressed in Section 3.10, Hazards and Hazardous Materials. Further discussions regarding hazards due to fire are discussed in Section 3.7, Fire and Fuels Management.

3.14.1 Affected Environment/Environmental Setting

The project area is 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 area surrounding 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.

Operating wind turbines are located to the west of the proposed project on the Campo Indian Reservation. A San Diego Gas & Electric (SDG&E) transmission line (Sunrise Powerlink) will be built through and adjacent to the project site. The proposed Sunrise Powerlink transmission line is an overhead single-circuit 230 kilovolt (kV) transmission line from the existing Imperial Valley Substation that will connect to a new 500/230 kV substation referred to as the Central East County Substation.

According to the California Department of Energy, no natural gas pipelines are located in the eastern portion of San Diego County and the project area. Therefore, the Boulevard area does not have natural gas available for delivery, and the area is supported by propane gas, as well as electricity. According to the Bureau of Land Management (BLM) Resource Management Plan and Record of Decision (RMP/ROD), the area of McCain Valley has been identified as having abandoned or inactive mines. Mine locations are shown on **Figure 3.8-6** in the Geology, Soils and Minerals section of this environmental document.

Due to the proximity of the Mexico Border, the Boulevard area is subject to high rates of drug and human trafficking. The U.S. Border Patrol regularly monitors activities in the McCain Valley area for criminal activity.

Low impact noise effects and health impacts due to wind turbines are discussed in the Noise Section 3.12.

3.14.2 Regulatory Setting

Federal

BLM Wind Energy Development Policy Instructional Memorandum (IM 2009-043)

The BLM policy on wind energy development includes Best Management Practices (BMPs) adopted as required elements of project-specific Plans of Development (POD) and/or as right-of-way (ROW) authorization stipulations. The BMPs are broken down into three aspects as they relate to the project

timeline: development of the POD, Construction, and Operation. The BMPs for development of the POD identify required elements of the POD needed to address potential impacts associated with subsequent phases of development. The project-specific BMPs that relate to human health and safety are included in Section 2.0, Proposed Action and Alternatives of this environmental document (**Table 2.0-6).** Health and safety plans incorporating these BMPs will be prepared, appended to the POD, and implemented for the Tule Wind Project.

Eastern San Diego County Resource Management Plan and Record of Decision

The Eastern San Diego County RMP/ROD and its associated Programmatic Environmental Impact Statement, were prepared in accordance with the Federal Land Policy and Management Act (FLPMA), the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations for implementing NEPA (40 Code of Federal Regulations [CFR] 1500-1508), and BLM regulations (NEPA Handbook [H1790-1] and Land Use Planning Handbook [H-1601-1]).

The Eastern San Diego County RMP/ROD Public Health and Safety section identifies goals, objectives and management actions associated with abandoned mines, unexploded ordnance, and international border issues. The following are applicable to the proposed project:

Abandoned Mines

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.

UXO-01: Promote pubic and/or environmental safety from unexploded ordnance (UXO).

UXO-02: In cooperation with the U.S. Army Corps of Engineers (USACE), identify the locations on BLM-administered lands that are potential areas of UXO concern.

International Border Issues

IBI-01: Ensure that borderlands are safe for public and agency use.

IBI-02: In performance of border management duties, Department of Homeland Security Customs and Border Protection (USBP) is authorized to use all BLM routes as they are designated. In emergency situations, where greater access may be required, BLM will coordinate with USBP to minimize impacts to resources.

State

California Division of Occupational Safety & Health

The California Department of Industrial Relations Division of Occupational Safety and Health (Cal-OSHA) contains regulations for the health and safety of workers throughout the state. Title 8 contains regulations that are applicable to all construction and maintenance personnel for the project. The POD for the project should include all appropriate safety measures and instructions for construction staff to avoid injuries on the job site.

Local

County of San Diego

The County of San Diego has established minimum required setbacks for large wind turbine systems from residences, public roads, and adjacent property lines to provide safety buffers. Large wind turbine systems are permitted on a parcel of at least five acres and considered a Major Impact Services and Utilities use type requiring a Major Use Permit approved in accordance with the Use Permit Procedure commencing at Section 7350 of the County Zoning Ordinance. Section 6951 of the County Zoning Ordinance provides direction for the development of large wind turbine systems with the following regulations:

Setbacks. The wind turbines shall observe the following setbacks measured from the closest point on the base or support structure. For purposes of calculating setbacks, the height of the wind turbines shall be equivalent to the distance from ground to the top of blade in vertical position:

6. From property lines or public road setback, four times the height.
7. From all existing residences or buildings occupied by civic use type setback, eight times the height.
8. From the furthermost property line of adjacent parcels which are vacant, setback nine times the total height.
9. Setbacks for experimental wind turbines (those which are not produced by an established wind turbine manufacturer on a production basis) may be greater than those specified above based on the discretion of the permit granting authority.
10. Setbacks may be reduced up to a maximum of 50 percent with the written consent to the granting of a setback reduction signed by the owner or owners of each lot or parcel affected by the proposed setback reduction.

Fencing. Public access shall be restricted through the use of a fence with locked gates, non-climbable towers or other suitable methods.

Signs. Suitable warning signs containing a telephone number and an address for emergency calls and informational inquiries shall face all approaches to the project. Individual signs shall be between 5 and 16 square feet.

Noise. The project shall meet the sound level limits of Title 3, Division 6, Chapter 4 of the San Diego County Code (Noise Abatement and Control).

Height. For the purposes of calculating height, the height of the wind turbines shall mean the distance from ground to the top of the blade in vertical position. The system shall not exceed 80 feet.

The proposed project is pursuing approval of a Major Use Permit from the County of San Diego to develop the project in accordance with local regulations on wind energy development.

The requirements set forth above are the current zoning regulations per the County of San Diego Zoning Ordinance. However, County staff is currently working on amendments to the County Zoning which would: (1) update existing County regulations pertaining to wind turbine systems, and (2) add new provisions related to the siting and permitting of solar energy systems and facilities. The draft Renewable Energy Ordinance and CEQA Negative Declaration prepared by the County should be available for public review in February 2010. The ordinance will be presented to the County Board of Supervisors in 2010. Once adopted, the regulations set forth in this ordinance would be applicable to all renewable energy projects in the unincorporated portions of the County.

3.14.3 Environmental Consequences/Impact Analysis

California Environmental Quality Act Significance Criteria

Appendix G of the *California Environmental Quality Act* (*CEQA) Guidelines* requires analysis for hazards and hazardous materials that may result in potential impacts to human health and safety. In order to satisfy CEQA significance thresholds, this environmental document includes Section 3.9, Hazards and Hazardous Materials, which provides an analysis of impacts related to typical hazards and hazardous materials as defined by CEQA. In addition, Section 3.7, Fire/Fuels Management, contains further analysis that addresses the effects on fire and fuels management that would be caused by the proposed project.

Wind projects have potential hazards which are not addressed in Appendix G of the State *CEQA Guidelines*. The following are potential hazards to public health and safety that are applicable to wind projects (BLM FPEIS 2005):

- Tower/rotor failures;
- Exposure to EMF;
- Aviation safety interference and EMI (e.g., impacts to radar, microwave, television, and radio transmissions);
- Shadow effects; and
- Lightning strikes.

The following section addresses potential hazards to public health and safety (as described above) that are unique to wind projects and discusses the potential impacts that may result from the construction, operation and maintenance, and decommissioning of the proposed project and alternatives.

Tower or Rotor Failures

Construction

Construction areas will be temporarily closed to limit the potential of hazards to the public. Temporary fencing will be utilized to restrict transient traffic, off-highway vehicle (OHV) use, and the general public

from accessing areas while under construction. The implementation of construction and worker safety plans on the ground, impacts related to the construction of the project related to human health and safety are anticipated to be less than significant.

Operation and Maintenance

Although unlikely, potential hazards to public health and safety could occur during the operational phase of the project. One of the primary safety hazards of wind turbines are if a rotor blade breaks and parts fall or are thrown to the ground. Several turbine safety incidents have occurred in the surrounding vicinity, and do pose a potential hazard to public safety. According to the Draft Mountain Empire Subregional Plan, in 2007 the Kumeyaay Wind Facility located on the Campo Indian Reservation experienced a turbine blade shatter, although no injuries were reported. Additionally, in the 1980s, the Buckeye Wind Farm located on Tierra Del Sol Road suffered brake failure on multiple turbines causing the shredding of blades resulting in one death.

Although rare, mechanical failure of wind turbines does occur. Areas where the turbines are located are primarily located on BLM land which is a recreational area and not heavily populated. Iberdrola Renewables will prepare and implement a multi-agency Fire Prevention Memorandum of Understanding (MOU) with the CAL Fire San Diego Unit, Bureau of Land Management, and other agencies as appropriate to coordinate all aspects of agency and utility fire prevention plans and practices. In addition a Draft Fire Protection Plan (FPP) has been completed to reduce impacts due to the operation and maintenance of the proposed project. The FPP (Appendix P) outlines measures Iberdrola Renewables will take to reduce the risk of fire caused by mechanical failure. With these measures in place, fire is less likely to occur, but a potential impact to public health and safety remains since public access to turbines located on BLM land remains.

A large majority of the proposed turbine locations are in remote areas. However, the portions of the project located on BLM land are accessible to the general public. The project will require access roads for the maintenance crew to drive to the turbine locations for maintenance. It is proposed that the roadways located on BLM land will not be gated or locked so not to limit off-highway vehicles. This public access could expose people to areas that have the potential for equipment failure.

Adequate setbacks for proposed turbines will be incorporated into the design phase to limit the amount of public exposure to the turbines. Improved wind turbine design and engineering make the likelihood of turbine equipment failure extremely remote. Although equipment failure is considered a rare event, there is a potential impact to public health and safety. In areas where possible, turbine access roadways will be gated to limit the amount of public access to the area. In the BLM portion of the project where gating is not an option, impacts would be considered significant.

Decommissioning

Prior to the termination of the ROW authorization, a decommissioning plan will be developed for approval by interested agencies. The plan will include a site reclamation plan and monitoring program. It is anticipated that requirements in effect at that time will require that all turbines and ancillary structures be removed from the site. All management plans, BMPs, and stipulations developed for the construction phase will be applied to similar activities during the decommissioning phase. During the decommissioning phase of the project, impacts would be similar as to the construction phase of the project. 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. Impacts are less that significant.

Exposure to Electromagnetic Fields

Construction, Operation and Maintenance, and Decommissioning

EMFs emanate from any wire carrying electricity. Members of the general public are routinely exposed to these fields in their everyday lives. Possible effects associated with the electric and magnetic fields from transmission lines (or similar electrical sources) fall into two categories:

- Short-term effects that can be perceived and may represent a nuisance; and
- Possible long-term health effects.

Electric and magnetic fields of power systems are not regulated by localities, the State of California, or the U.S. Government. However, the California Public Utilities Commission (CPUC) ruled in General Order 131-D that major electric power construction projects should be designed to reduce magnetic fields in a cost-effective manner (CPUC 1995).

EMF will 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 will produce a field that reduces much quicker than overhead circuits. The EMF from any project electrical line will be reduced below measurable levels at a distance of 200 to 300 feet. **Appendix Q** includes EMF calculations for the 138 kV and the 34.5 kV lines associated with the project.

The issue of whether there are long-term health effects associated with exposure to EMF from transmission lines and other sources has been investigated for several decades. There is little evidence that EMF causes long-term health effects (AWEA 2008). Research in this area is continuing to determine whether such associations might reflect a causal relationship. Impacts due to the proposed project to exposure to EMF are considered less than significant.

Aviation Safety Interference/Electromagnetic Interference

Construction, Operation and Maintenance, and Decommissioning

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

The project will be planned to minimize electromagnetic noise (e.g., impacts to radar, microwave, television, and radio transmissions) and comply with Federal Communications Commission (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 non-federal government microwave telecom systems was performed. The area was shown to have no potential conflicts between microwave paths and the proposed turbines (Comsearch 2009).

Per Federal Aviation Administration (FAA) requirements, approximately one-third to one-half of the turbine structures will be lit with synchronized red flashing lights that may be visible from the state

highways at night. These lights will be mounted at the nacelle of the wind turbine, and located at the ends and middles of the turbine strings. Additional lighting at the substation and O&M facility will be limited to reduce nighttime light pollution (e.g., motion detector lights and downcast lighting).

A desktop analysis was conducted and according to the FAA preliminary screening tool, the project area is located within an area with minimal to no impact to Weather Surveillance Radar or impacts to military airspace. However, National Telecommunications & Information Administration (NTIA) notification was advised. The project area is identified as a "red" area, highly likely to impact Air Defense and Homeland Security radars, of which an Aeronautical study is required. Turbine coordinates were provided to the Navy in 2009 for comments and consideration. In addition, a Notice of Proposed Construction (Form 7460-1) Hazard Determination was obtained by Iberdrola Renewables in February 2007 from the FAA. Consultations with other agencies are anticipated to continue. Impacts due to the proposed project to aviation safety and EMI are considered less than significant.

Shadow Effects

Construction, Operation and Maintenance, and Decommissioning

Daily and seasonal lighting conditions can affect the prominence of the wind turbines, and atmospheric conditions (e.g., light blue to overcast skies) combined with the turbine color (i.e., white, non-reflective surface) and their location along ridgelines reduces visibility of the structures with distance. The most evident views will be at similar or lower elevations as the structures, while from higher views the structures will be less visible.

The phenomenon of light "flicker" occurs only temporarily depending on season, tilt, orientation of nacelle, atmospheric conditions, location of observer, and location of sun. Ancillary structures (i.e., operation and maintenance facility, fencing, substations, collector lines, and access roads) will be designed in keeping with applicable regulations and design standards and all reasonable efforts for the public to be involved and informed about visual site design will occur in keeping with local ordinance. Visual simulations from critical views, selected with guidance from County and BLM visual resource professionals, were rendered using modeling software which places 3-dimensional computer designed facilities within a digital model providing a conceptual image of approximately what the facilities will look like within the existing environment.

"Shadow Flicker" is the term used to describe the effect caused by the shadows cast by moving turbine blades when the sun is visible. This can result in alternating changes in light intensity perceived by viewers. Since wind turbines are usually located relatively far from potential shadow receptors, shadow flicker typically occurs only at times and locations of low sun angles; this is most common just after sunrise and just before sunset, and in relatively higher latitudes (e.g., more northerly areas in the Northern Hemisphere). Shadow flicker does not occur when the sun is obscured by clouds or fog, or when turbines are not operating, or when the blades are at a 90º angle to the receptor. While shadow flicker can be perceived outdoors, it tends to be more noticeable in rooms with windows oriented to the shadows. A wind turbine's shadow flicker impact area does not generally extend beyond 1.24 miles, and high-impact durations (less than 200 hours per year) are generally located within approximately 984 feet of the turbine, and typically last less than 20 minutes. The distance from residences to turbines ranges from 2,412 to 11,879 feet. Considering the lack of residences located within the project area and the area generally affected by shadow flicker is greater than 984 feet, impacts are considered less than significant.

Ice Shedding

Construction, Operation and Maintenance, and Decommissioning

Wind turbines are subject to ice build-up on the exposed sections of the turbine in areas of the country that experience freezing precipitation, ice storms, and ice accumulation. Most ice shedding occurs as temperatures rise and ice thaws from the rotor. The western portion of the project area is located on the Ewiiaapaayp Reservation mountain ridge and is located at a 5,000 to 5,600-foot elevation and does experience snow in the winter months, however this geographic area does not experience prolonged weather conditions that would lead to ice shedding hazards, and the area does not contain any residences located adjacent to the wind turbines. The project area is not considered to be in an area that would be subject to ice shedding and impacts due to ice shedding would be considered less than significant.

Lightening Strikes

Construction, Operation and Maintenance, and Decommissioning

Although considered rare, lightening strikes do occur to 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, lightning strikes are possible and lightning protection is engineered in the machine. Furthermore, the metal construction of the turbines would not be susceptible to catching on fire, and spreading to the vegetation below. Impacts due to lightening strikes are considered less than significant. Further discussions regarding fire hazards are discussed in Section 3.7, Fire/Fire Management.

3.14.4 Cumulative Impacts

According to the cumulative research conducted for the general vicinity, found in **Table 2.0-8**, Cumulative Projects List, no projects were identified that pose a significant hazard to the public or the environment. There are three relevant projects that have the potential to increase the project's likelihood of having a cumulative effect to human health and safety to surrounding residents and or recreationists in the area. The Sunrise Powerlink has proposed a 230 kV transmission line to run through and adjacent to the Tule Wind Project, which may increase the likelihood for EMF exposure, fires relating to lightning strikes, as well as other additional hazards related to the construction and operation of a typical transmission line running through the area. The project is proposed east of the Campo Wind Farm which contains 25 turbines with an additional 80 turbines proposed. The proximity of this project increases the potential for human health and safety issues discussed in this chapter to occur in the surrounding area. The East County Substation (ECO) project, which includes the SDG&E proposed Rebuilt Boulevard Substation, which the project will connect and the Energia Sierra Jaurez United States Transmission Generation Tie Line Project (ESJ) is also proposed in the surrounding area south of Interstate 8 (I-8). According to SDG&E, the mechanical and structural design and construction of the 138 kV transmission lines must meet the requirements of the CPUC, General Order No. 95 (GO 95), Rules for Overhead Electric Line Construction. Although energized conductors can create potential for a fire hazard, SDG&E takes into account normal and unusual structural loading in its designs to prevent these fire hazards.

Increased risk to human health and safety could occur during the project operation related to the inherent hazards associated with construction activities and maintenance of turbines. However, these risks would be minimized by the proposed BMPs and safety measures taken on behalf of the project applicant

including, but not limited to, conducting a safety assessment, development of a comprehensive health and safety program and fire management strategy, maintaining adequate safety setbacks to nearest residences, mitigation for EMI, and compliance with FAA regulations. Cumulative impacts to human health and safety are anticipated to be less than significant.

3.14.5 CEQA Levels of Significance Before Mitigation

The project is anticipated to have minimal impacts related to public health and safety. The project will be developed in accordance with all federal, state, and local regulations and laws that are applicable to large scale wind energy developments to reduce or avoid any potential impacts discussed in this section. The types of activities that will occur during construction of the project include a variety of major actions, such as establishing site access; excavating and installing the tower foundations; erecting towers and turbines; constructing the project collector substation and operation and maintenance facility, meteorological towers, and access roads. During all phases of the project, the applicant will comply with OSHA standards and implement a health and safety plan that will allow for worker and public safety and the avoidance or minimization of environmental impacts. Construction and operation workers at any facility are subject to risks of potential injuries and fatalities from physical hazards. While such occupational hazards can be minimized when workers adhere to safety standards and use appropriate protective equipment, fatalities and injuries from on-the-job accidents can still occur.

The general public and construction personnel would potentially be subject to a significant impact or degree of potential hazards due to tower/rotor failure as discussed in Section 3.14-3. Impacts due to exposure to EMF, aviation safety, shadow flicker, and lightening strikes due to the construction, operation and maintenance, and the decommissioning of the proposed project is considered less than significant.

3.14.6 Mitigation Measures

Potential mitigation measures are identified on the basis of the expected major activities, general safety standards, and research specific to wind power generation.

PHS-1 Iberdrola Renewables shall provide signage throughout the project that warns and cautions the public from getting too close to the towers.

PHS-2 In the event the project results in EMI, Iberdrola Renewables (or the operator), should work with the owner of the impacted communications system to resolve the problem. Potential mitigation 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 wind turbines can be quickly recognized.

3.14.7 CEQA Levels of Significance After Mitigation

All potential impacts have been identified as less than significant before or after the implementation of appropriate mitigation measures except one; impacts from tower/rotor failure. Turbines can suffer structural failures that throw nacelle and other heavy parts, some weighing several tons, creating a danger for people occupying the surrounding area. Although adequate setbacks are proposed, and the possibility of equipment failure is considered a rare event, the possibility of equipment failure has the potential to occur. Some areas of the project do not have public access, and limited residences. However, the BLM is required to provide public access to all portions of its land. Mitigation Measure PHS-1 will notify the public to the potential dangers of wind turbine failures. The project can not provide appropriate mitigation

for impacts to the public, particularly recreationists, from the potential hazards of tower/rotor failure. Therefore, this would remain a significant impact.

As mentioned previously, impacts due to exposure to EMFs to the general public is considered less than significant; therefore, no mitigation is required. Mitigation Measure PHS-2 will reduce any potential impacts to EMI to a less than significant level to further project area residents.

3.14.8 Comparison of Alternatives

In developing the alternatives to be addressed in this environmental document, the potential alternatives were evaluated in terms of their ability to meet the basic objectives of the project, while reducing or avoiding the environmental impacts of the project. The alternatives will contain all of the same components and construction corridor as the proposed project except they may vary in number and location.

No Project/No Action Alternative

Selection of the No Project/No Action Alternative would mean that that Tule Wind Project as proposed would not be implemented. The project activities would not occur and the environmental impacts specifically associated with the proposed project would not occur. The 200 MW of renewable electricity that would be generated by the project will not occur. This alternative will not cause impacts to public health and safety.

Alternate Transmission Line Alternative #1

The Alternate Transmission Line Alternative #1 (T-line Alternative #1) would include all of the same components as the proposed project except for an alternate overhead 138 kV transmission line (T-line Alternative #1), as shown in **Figure 2.0-12**. The T-line Alternative #1 would be located parallel to, but in-lieu of, the proposed transmission line. T-line Alternative #1 would be located further west and run from either the proposed or deviant collector substation approximately 5.5 miles south to the Rough Acres Ranch (south of turbine G-19). From Rough Acres Ranch, the line would continue west to Ribbonwood Road. The line would continue south on Ribbonwood Road to Old Highway 80, and east along Old Highway 80 to the SDG&E proposed Rebuilt Boulevard Substation.

This alternative would increase the land disturbance by approximately 7.6 acres, from 772.7 acres to 780.0 acres, utilizing the deviant collector substation. The 138 kV transmission line would increase in distance from 9.7 miles to 11.7 miles and would increase the amount of transmission line poles from 116 poles to 152 poles, utilizing the deviant collector substation. The 34.5 kV overhead collector lines would remain the same distance of 9.4 miles, and would require the same amount of collector line poles (250), and the underground collector lines would also remain the same distance of 29.3 miles, utilizing the deviant collector substation.

Create potential hazards to public health and safety that are unique to wind projects

Construction

This alternative would subject an increased amount of residents and businesses along Ribbonwood Road and Old Highway 80 to temporary public safety impacts related to the construction of the transmission line. This alternative will not create any other potential hazards to public health and safety that are unique to wind projects any greater than the proposed project during the construction phase. A less than significant impact is identified.

Operation and Maintenance

This alternative would subject an increased amount of residents and businesses along Ribbonwood Road and Old Highway 80 to the potential effects of electrical magnetic fields. This alternative will not create any other potential hazards to public health and safety that are unique to wind projects any greater than the proposed project during the operation and maintenance phase. A less than significant impact is identified.

Decommissioning

This alternative will not create any other potential hazards to public health and safety that are unique to wind projects any greater than the proposed project during the decommissioning phase. Temporary impacts would occur similar to the construction phase of the project. A less than significant impact is identified.

This alternative has the same level of impacts to public health and safety as the proposed project.

Alternate Transmission Line #2 and Collector Substation Alternative

The Alternate Transmission Line #2 and Collector Substation Alternative would include the alternate O&M/Substation facility co-located on Rough Acres Ranch (T17S R7E Sec9), the Alternate Transmission Line #2 (138 kV), as well as an alternate overhead collector system, as shown in **Figure 2.0-13**. This alternative would consist of two 34.5 kV lines connecting the turbines to the alternate collector substation location. All other elements of the project including the turbine locations, parking and laydown areas, roadway upgrades, and batch plant would remain as described in the proposed project. The Alternate Transmission Line #2 would run from the alternate collector substation south along McCain Valley Road, and then west along Old Highway 80 until reaching the SDG&E proposed Rebuilt Boulevard Substation.

This alternative would increase the land disturbance by 1.9 acres, from 772.7 acres to 774.6 acres. The 138 kV transmission line would decrease in distance as a result of this alternative from 9.7 miles to 3.8 miles and would decrease the amount of transmission line poles from 116 poles to 44 poles. The 34.5 kV overhead collector lines would increase in distance from 9.4 miles to 17 miles, and would increase the amount of collector line poles from 250 to 452 poles. The underground collector lines would decrease in distance from 29.3 miles to 28.9 miles.

Create potential hazards to public health and safety that are unique to wind projects

Construction

This alternative will not create any other potential hazards to public health and safety that are unique to wind projects any greater than the proposed project during the construction phase. A less than significant impact is identified.

Operation and Maintenance

This alternative will not create any other potential hazards to public health and safety that are unique to wind projects any greater than the proposed project during the O&M phase. A less than significant impact is identified.

Decommissioning

This alternative will not create any other potential hazards to public health and safety that are unique to wind projects any greater than the proposed project during the decommissioning phase. Temporary impacts would occur similar to the construction phase of the project. A less than significant impact is identified.

This alternative has the same level of impacts to public health and safety as the proposed project.

Alternate Transmission Line #3 and Collector Substation Alternative

The Alternate Transmission Line #3 and Collector Substation Alternative would include the alternate O&M/Substation facility co-located on Rough Acres Ranch (T17S R7E Sec9), the Alternate Transmission Line #3 (138 kV), as well as an alternate overhead collector system as shown in **Figure 2.0-14**. This alternative would consist of two 34.5 kV lines connecting the turbines to the alternate collector substation. All other elements including the turbine locations, parking and laydown areas, roadway upgrades, and batch plant would remain as described in the proposed project. The Alternate Transmission Line #3 would run from the alternate collector substation west to Ribbonwood Road, continue south along Ribbonwood Road, and then east along Old Highway 80 until reaching the SDG&E proposed Rebuilt Boulevard Substation.

This alternative would increase the land disturbance by 7.3 acres, from 772.7 acres to 780.0 acres. The 138 kV transmission line would decrease in distance as a result of this alternative from 9.7 miles to 5.4 miles and would decrease the amount of transmission line poles from 116 poles to 60 poles. The 34.5 kV overhead collector lines would increase in distance from 9.4 miles to 17 miles, and would increase the amount of collector line poles from 250 to 452 poles. The underground collector lines would decrease in distance from 29.3 miles to 28.9 miles.

Create potential hazards to public health and safety that are unique to wind projects

Construction

This alternative would subject an increased amount of residents and businesses along Ribbonwood Road and Old Highway 80 to temporary public safety impacts related to the construction of the transmission line. This alternative will not create any other potential hazards to public health and safety that are unique to wind projects any greater than the proposed project during the construction phase. A less than significant impact is identified.

Operation and Maintenance

This alternative would subject an increased amount of residents and businesses along Ribbonwood Road and Old Highway 80 to the potential effects of electrical magnetic fields. This alternative will not create any other potential hazards to public health and safety that are unique to wind projects any greater than the proposed project during the operation and maintenance phase. A less than significant impact is identified.

Decommissioning

This alternative will not create any other potential hazards to public health and safety that are unique to wind projects any greater than the proposed project during the decommissioning phase. Temporary

impacts would occur similar to the construction phase of the project. A less than significant impact is identified.

This alternative has the same level of impacts to public health and safety as the proposed project.

Operation and Maintenance Facility Location #1 Alternative

The O&M Facility Location #1 Alternative would be located on private property (T17S R7E Sec4), north of the alternate collector substation and located west of McCain Valley Road, as shown in **Figure 2.0-13**. This alternative would consist of separating the 5-acre O&M building site from the collector substation; however, both would remain on Rough Acres Ranch property. Alternate Transmission Line #2 would be utilized under this alternative as well as the Alternate Overhead Collector System consisting of two 34.5 kV lines connecting the turbines to the alternate collector substation. All other elements of the project including the turbine locations, parking and laydown areas, and batch plant would remain as described in the proposed project.

This alternative is estimated to have the same land disturbance impacts as the Alternate Transmission Line #2 and Collector Substation Alternative. However, by relocating the O&M building site to the northern portion of Rough Acres Ranch, this alternative would require an approximate 650-foot new access road to be constructed on the west side of McCain Valley Road, thus necessitating an approximate 0.24 acres of temporary disturbance area, and resulting in 0.07 acres of permanently impacted area and a temporary impact of 0.55 acres. In comparison to the proposed project, this alternative would decrease the land disturbance by approximately 2.5 acres, from 772.7 acres to 775.2 acres. The 138 kV transmission line would decrease in distance as a result of this alternative from 9.7 miles to 3.8 miles and would decrease the amount of transmission line poles from 116 poles to 44 poles. The 34.5 kV overhead collector lines would increase in distance from 9.4 miles to 17 miles, and would increase the amount of collector line poles from 250 to 452 poles. The underground collector lines would decrease in distance from 29.3 miles to 28.9 miles.

Create potential hazards to public health and safety that are unique to wind projects

Construction

This alternative will not create any other potential hazards to public health and safety that are unique to wind projects any greater than the proposed project during the construction phase. A less than significant impact is identified.

Operation and Maintenance

This alternative will not create any other potential hazards to public health and safety that are unique to wind projects any greater than the proposed project during the operation and maintenance phase. A less than significant impact is identified.

Decommissioning

This alternative will not create any other potential hazards to public health and safety that are unique to wind projects any greater than the proposed project during the decommissioning phase. Temporary impacts would occur similar to the construction phase of the project. A less than significant impact is identified.

This alternative has the same level of impacts to public health and safety as the proposed project.

Operation and Maintenance Facility Location #2 Alternative

The O&M Facility Location #2 Alternative would be located on private property (T17S R7E Sec 16), south of the alternate collector substation and located west of McCain Valley Road, as illustrated in **Figure 2.0-13**. This alternative would consist of separating the 5-acre O&M building site from the collector substation; however, both would remain on Rough Acres Ranch property. Alternate Transmission Line #2 would be utilized under this alternative as well as the Alternate Overhead Collector System consisting of two 34.5 kV lines connecting the turbines to the alternate collector substation. All other elements of the project including the turbine locations, parking and laydown areas, and batch plant would remain as described in the proposed project.

This alternative is estimated to have the same land disturbance impacts as the Alternate Transmission Line #2 and Collector Substation Alternative. However, by relocating the O&M building site to the southern portion of Rough Acres Ranch, this alternative would result in a very slight difference of 1.0 acre of permanent impacts and 0.08 acres of temporary impacts resulting from the construction of new access roads than those described in **Table 2.0-10**. In comparison to the proposed project, this alternative would increase the land disturbance by approximately 2.0 acres, from 772.7 acres to 774.7 acres. The 138 kV transmission line would decrease in distance as a result of this alternative from 9.7 miles to 3.8 miles and would decrease the amount of transmission line poles from 116 poles to 44 poles. The 34.5 kV overhead collector lines would increase in distance from 9.4 miles to 17 miles, and would increase the amount of collector line poles from 250 to 452 poles. The underground collector lines would decrease in distance from 29.3 miles to 28.9 miles.

Create potential hazards to public health and safety that are unique to wind projects

Construction

This alternative will not create any other potential hazards to public health and safety that are unique to wind projects any greater than the proposed project during the construction phase. A less than significant impact is identified.

Operation and Maintenance

This alternative will not create any other potential hazards to public health and safety that are unique to wind projects any greater than the proposed project during the operation and maintenance phase. A less than significant impact is identified.

Decommissioning

This alternative will not create any other potential hazards to public health and safety that are unique to wind projects any greater than the proposed project during the decommissioning phase. Temporary impacts would occur similar to the construction phase of the project. A less than significant impact is identified.

This alternative has the same level of impacts to public health and safety as the proposed project.