

# CHAPTER 3.5

## PUBLIC HEALTH AND SAFETY

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This section addresses potential public health and safety issues related to construction and operation of Mountain View IV wind energy project. Potential issues to be discussed are handling of hazardous substances, blade throw, tower collapse, and electric and magnetic fields.

### 3.5.1 Affected Environment

Existing wind energy projects represent the primary land use occurring in the project area. Currently operating wind turbines are located adjacent to the site on the north and western boundaries. The remainder of the project vicinity is largely vacant or developed with residential, railroad, utility, industrial and similar uses. A Southern California Edison (SCE) line is located just south of the Union Pacific Railroad, north of the property. This power line is rated at 33 kV and was installed with the express purpose of interconnecting wind energy projects. Numerous underground collection lines deliver power from the existing wind turbines to their points of interconnection on the adjacent properties to the north and west. Existing 500 kV, 230 kV, 115 kV and 34.5kV overhead regional electrical transmission lines and local distribution lines occur throughout the project vicinity. The nearest existing residences from the site are located in the Desert Highland and Mountain View communities, approximately 3,000 feet south of the nearest proposed turbines.

### 3.5.2 Regulatory Environment

#### Federal Guidelines

Proponents of activities on BLM-administered lands, including wind energy projects, are required by BLM policy to provide a comprehensive list of the hazardous and/or extremely hazardous materials that will be produced, used, stored, transported, or disposed of during the proposed action. Proponents must also comply with all applicable federal and state regulations regarding notices to federal and local emergency response authorities and development of 3-21 applicable emergency response plans. For the purposes of this discussion, hazardous materials are defined as those chemicals listed in the EPA Consolidated List of Chemicals Subject to Reporting under Title III of the Superfund Amendments and Reauthorization Act of 1986. Extremely hazardous materials are defined by federal regulation in 40 CFR Part 355.

#### State Guidelines

The Department of Toxic Substances Control (DTSC) is the State agency which regulates the handling, storage and disposal of hazardous materials within local jurisdictions within the State of California. The DTSC has one Hazardous Substances Scientist in each of its four Regional Offices.

### 3.5.3 Environmental Consequences

#### Methodology and Significance Criteria

##### CEQA Significance Criteria

Appendix G of the State CEQA Guidelines (Cal. Code Regs. Title 14 §15000 et seq., 1998) states that the project would have a significant effect on the environment if it would:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;
- Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment;
- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would result in a safety hazard for people residing or working in the project area;
- For a project within the vicinity of a private airstrip, would result in a safety hazard for people residing or working in the project area;
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan;
- Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

#### Project Impacts

##### Hazardous Substances

Hazardous substances are subject to strict handling, storage, disposal, and transportation laws at the Federal, State, and local levels. Facility operators who involve more than 1,320 gallons of petroleum products are required to prepare and observe a Spill Prevention Control and Counter Measure plan, under the recently revised regulations pertaining to 40 CFR 112 of the Clean Water Act. Also, facility operators which utilize hazardous substances are required to prepare a risk management and prevention program (California Health and Safety Code Section 25534, amended 1986).

The nature of the project is such that no substances classified as hazardous will be stored or used on the site. Petroleum products which are not classified as hazardous, including gear box oil and hydraulic fluids, contained within the turbine and used for operation/maintenance of turbines and transformers, will be stored off-site. All production, use, storage, transport, and disposal of petroleum based materials as a result of this project will be in strict accordance with federal, state, and local government regulations and guidelines. No extremely hazardous materials as defined by the EPA in Code of Federal Regulations (CFR) Title 40 would be produced, used, stored, or disposed of as a result of this project.

Construction, operation and maintenance of the proposed project would result in the temporary use and storage of small amounts of hazardous materials. Such materials would mostly include fuels, lubricants and hydraulic fluids associated with construction equipment, and cleaning and maintenance compounds. No hazardous waste would be generated during the associated construction phase. The amount of hazardous materials used/stored on-site during the temporary construction period would not exceed 55 gallons, 500 pounds, or 200 cubic feet. No underground storage tanks are currently located on-site or proposed by the project. The project is subject to the National Pollutant Discharge Elimination System (NPDES) for the protection of surface water quality. Conditions of approval for the project will require the implementation of NPDES Best Management Practices (BMP) during construction including provisions that construction equipment be properly maintained to minimize leaks of motor oils, hydraulic fluids and fuels.

The wind turbines typically use the following lubricating oils and greases: Mobilux 2, Mobilith 5HC 460 grease, Hydro TL 15, and Tribol 1510/320 or equivalents. None of these contain any compounds listed as hazardous by the Environmental Protection Agency (EPA). These are used in moderate quantities (approximately 40 gallons per turbine) and are contained entirely within the spill trap, nacelle and tower to protect accidental leakage. Lubricating oil levels are continuously monitored by a computer data collection system, manually inspected quarterly, filled as needed, and changed every two years. Spent fluids will be recycled with a certified waste contractor. The oil change will be performed up-tower, where any accidental spills will be contained by the nacelle. No oils or greases will be stored on-site.

Electrical transformers, which are located next to each turbine, are equipped with containment structures capable of retaining 125% of the volume of oil in the transformer in the unlikely event of a leak or spill. Transformers will contain approximately 250 gallons of cooling oil, and will not contain PCB's. Inspection of each transformer will be performed on a regular basis, and after any accident or seismic event which could result in transformer damage, in order to detect or prevent leaks. Cooling oil leaks would be automatically detected by a continuously monitored SCADA system (computer data collection system) that would report low cooling oil and shut down the wind turbine until the problem is addressed.

There are no suspected or known hazardous waste contamination sites on or adjacent to the subject property. Given the history and current characteristics of the project sites, it is unlikely that any contamination would be encountered. Therefore, no significant impact from former activities at the property would occur.

The project owner is required to establish and maintain a Spill Prevention Control and Counter Measure plan (SPCC), under the recently revised regulations pertaining to 40 CFR 112 of the Clean Water Act. Under this plan, a procedure and the required equipment would be provided and maintained by the owner or his contractor to respond in the event of a spill. The use of mineral oils and hydraulic fluids, and the use of secondary containment as proposed by the wind project would not result in a significant hazard with respect to chemical or water contamination. All use of hazardous materials, including storage and disposal, would be in compliance with the County of Riverside's enforcement procedures currently in place; and therefore impacts relative to the release of hazardous substances as a result of project implementation would be less than significant.

#### Natural Gas

The proposed above ground power line extension will cross a buried natural gas pipeline in the northern portion of Section 22 as it approaches the proposed substation north of the railroad tracks. Therefore, the project proponent will be required to secure all appropriate Right-of-Way (ROW) encroachments or corresponding instruments from the Southern California Gas Company (SCG). Utility easements of record shall be observed and unauthorized disturbance shall be prohibited as provided by law. The applicant will coordinate with SCG, regarding necessary pipeline crossings to accommodate gravel roads and overhead power lines. SCG requires an amendment to right-of-way as the last step for the process to be fully satisfied. Although no significant issues related to the pipeline crossing are anticipated, an amendment to right-of-way will not be granted until SCG has completed their review of detailed design plans (road sections and locations, number and location of electrical lines, etc.) and agrees to the crossing specifics. The process of issuing the crossing permit is administrative in nature, as long as SCG's design requirements are met, and can be issued in approximately 60 days. Coordination with SCG's field supervising inspectors during the construction phase, as a condition of the crossings, will reduce the potential impact to a less than significant level.

#### Blade Throw

One of the primary safety hazards of wind turbines occurs if a rotor blade breaks and parts are thrown off. This is referred to as "blade throw". This could occur as a result of rotor over speed, although such an occurrence has been extremely rare and happens mostly with older and smaller turbines. Material fatigue can also cause a blade to break. The difficulty of predicting the trajectory of a broken rotor blade makes the quantitative determination of safety risk somewhat uncertain. However, it is known that these types of events are very rare and the probability of a fragment

hitting a person is even lower (FPEIS 2005). A blade or turbine part has rarely traveled farther than 1640 ft from the tower; usually most pieces land within 328 to 656 ft. Today, with proper engineering design and quality control, blade throw should rarely occur. A sufficient safety zone or setback from residences, roads, and other public access areas is often required by permitting agencies (FPEIS 2005) and serves to mitigate impacts of blade throw.

The proposed project has the potential to create a hazard to human safety associated with equipment failure, resulting in blade throw and/or tower collapse. Older turbine designs used light weight blades and rotated at much higher speeds up to 100 rpm. They also contained braking systems which allowed the rotor to “run away” under certain circumstances. When these conditions occurred, a blade failure could result in a significant part of a blade being thrown. Modern turbine designs employ fail-safe, redundant braking mechanisms, slower rotational speed (20 rpm), and heavier blades (6,100 - 7,100 lbs/each) which eliminate this possibility. The proposed project would implement the latest in modern wind turbine technology, which includes a safety system ensuring that the wind turbine is shut down immediately at the onset of mechanical disorders such as nacelle vibration, over speed, grid electrical disorders or loss of grid power. In the event of a mechanical disorder, the controller may keep the wind turbine immobile until the cause of the disorder is identified and removed by the windplant operator or maintenance crew, depending on the nature of the disorder. In the case of electrical disorder, the wind turbine is automatically brought back into service upon elimination of the disorder. Should a grid power failure take place, the wind turbine is designed to be automatically brought safely to a halt without the risk of excessive over speed of the rotor.

In addition, the turbine is protected by two independent brake systems; an aerodynamic brake affected by blade pitch control and a mechanical brake. The aerodynamic brake performs the function of the primary system; the mechanical brake performs the function of the secondary system. In normal operation, the aerodynamic brake is applied first, to keep fatigue stresses at a minimum. In case of a grid power failure the aerodynamic and mechanical brakes are automatically applied simultaneously. If one system fails, the other is still capable of returning the turbine to a safe condition and/or holding it in position.

In addition to the above mentioned safety precautions, the City of Palm Springs and BLM require that safety setback requirements be implemented. The project incorporates these safety setbacks along the perimeter of the project site. These safety setbacks will provide adequate mitigation against this unlikely event, and therefore impacts from “blade throw” are considered to be less than significant.

### Tower Collapse

Tower collapse is also extremely unlikely, as the towers and foundations are designed to withstand extreme earth shaking (magnitude 8.0), 100-year flood erosion (including drainage scour), and high

winds up to 130 mph. Winds equaling this wind velocity have never been recorded in the project vicinity since detailed monitoring was initiated more than 20 years ago. Additionally, long-term wind data has been correlated back additional decades which suggests these wind speeds have never occurred in the project vicinity (SeaWest Consulting, 2002). Therefore, since the location of project turbines will comply with the city's and BLM's safety setback criterion, and will employ a modern turbine design, which includes a safety system ensuring that the wind turbine is shut down immediately at the onset of mechanical disorders (such as nacelle vibration, over speed, grid electrical disorders or loss of grid power), and proposes turbine towers which incorporate structural designs capable of withstanding large seismic events, high winds and flooding; the potential hazards associated with tower collapse are less than significant.

#### Electric and Magnetic Fields (EMF)

During the last several years, representatives of the public have expressed concern about the potential health risk associated with power electric and magnetic fields (EMF). Numerous internationally recognized scientific organizations and independent regulatory advisory groups have conducted scientific reviews of the EMF research literature. The results of this research are inconclusive and public concern and scientific uncertainty remain regarding the potential health effects of EMF exposure.

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).

Exposure of individuals to electromagnetic fields generated by the proposed project will be minimal due to the low voltage (34.5 kV) and since the closest residence is located approximately 2950 feet to the nearest turbine. Also, distribution lines (34.5 kV) for the project will be underground and will cross areas which are not inhabited or used on a regular basis and therefore, regular long term exposure of individuals to EMF will not occur. Because of these circumstances, impacts from electromagnetic fields are less than significant.

### **3.5.4 Mitigation Measures**

No significant impacts have been identified; therefore, no mitigation measures are recommended beyond those environmental commitments incorporated into the project as described below:

- 3.5-1. The project is subject to the National Pollutant Discharge Elimination System (NPDES) for the protection of surface water quality. Conditions of approval for the project will require the implementation of NPDES Best Management Practices (BMP) during construction

- 3.5-2. The project will implement the City's and BLM's safety setbacks (except at the internal boundary between Sections 27 and 28), and employ a modern turbine structurally designed to withstand large seismic events (magnitude 8.0), high winds (up to 130 mph), and flooding.
- 3.5-3. Prior to the issuance of grading permits, the project proponent shall secure all appropriate amendments to right-of-ways or corresponding instruments from the Southern California Gas Company.
- 3.5-4. Contract specifications shall require the grading contractor to contact the Southern California Gas Company prior to the issuance of grading permits to ensure that pipelines are properly located, and to coordinate and cooperate with SCG on-site inspectors during the associated construction phase.
- 3.5-5. If the facility exceeds the 1,320 gallons threshold for petroleum products, the operator shall be required to prepare and observe a Spill Prevention Control and Counter Measure plan, under the recently revised regulations pertaining to 40 CFR 112 of the Clean Water Act.

### **3.5.5 Reduced Development Alternative**

The reduced development alternative would develop fewer turbines onsite than the proposed project. However, this would not serve to reduce impacts as there would still be turbines onsite so the associated hazards, use of petroleum products, blade throw, tower collapse and EMF would remain. The project, under this alternative, would still be required to comply with federal, state, and local laws regulating the use of hazardous materials. Therefore, the reduced development alternative is not considered to be environmentally superior to the proposed project (preferred alternative).

### **3.5.6 No Action Alternative**

All transport, handling, use, and disposal of substances such as paint, fuel, petroleum products, and solvents would be required to comply with all federal, state, and local laws regulating the management and use of hazardous materials. Therefore, impacts associated with the long-term operation of the site would not result in significant impacts related to hazardous materials use, transport, storage or disposal. The No Action alternative may be viewed as slightly superior to the project in that no usage of hazardous materials would occur at the site. There would be no risk of blade throw, tower collapse, or EMF since there would be no turbines located onsite.