# 3.7 FIRE AND FUELS MANAGEMENT

This section addresses the effects on fire and fuels management that would be caused by the proposed Tule Wind Project. The following discussion describes the existing environmental setting in the surrounding area, analyses the impacts of the proposed project, and recommends mitigation measures to avoid or reduce impacts due to the construction, operation and maintenance, and decommissioning of the proposed project and alternatives. A Conceptual Draft Fire Protection Plan (FPP) was prepared by RC Biological Consulting, Inc. (May 2010, revised September 2010) for the project and was used in the preparation of this section. The Draft FPP can be viewed in its entirety in Appendix J.

## 3.7.1 Affected Environment/Environmental Setting

The proposed project area lies in McCain Valley in the In-Ko-Pah Mountains. It is north of Interstate 8 (I-8) and the community of Boulevard. The topography of the area is gently-to- steeply sloping with an elevation ranging between about 3,600 and 5,600 feet above mean sea level (AMSL). Tule Creek is the primary drainage in the project area and drains the central portion of McCain Valley. The existing vegetation was mapped by HDR Engineering, Inc. , approximately 96 percent of project area include the following vegetation communities: upper Sonoran sub-shrub scrub; montane buckwheat scrub; big sagebrush scrub; northern mixed chaparral; semi-desert chaparral; chamise chaparral; redshank chaparral; scrub oak chaparral; upper Sonoran manzanita chaparral; southern north slope chaparral; coast live oak woodland; mule fat scrub; southern willow scrub; southern riparian woodland; and non-native grassland. The remaining four percent of the project area supports land use in the form of rural residential development, agriculture, heavily disturbed land, roads, and non-vegetated channels. Accumulation of fuels in these shrubland systems is a natural process.

### *3.7.1.1 Wildland Fire History in San Diego County*

In the County of San Diego, fire hazards represent a high level threat to personal injury and property damage. The fire risk in San Diego County is high due to an extremely fire-prone landscape. San Diego County is dominated by a Mediterranean-type climate with mild, wet winters and hot, dry summers. The County is divided into five climate zones from the coast to the desert. These climate zones are determined by several factors: proximity to the ocean, terrain, elevation, and latitude. The site is located within the interior and desert climate zones. Rainfall averages 11 to 18 inches a year with the lowest amount occurring in the eastern portion of the project.

The climate in central San Diego County supports dense, drought-adapted shrublands that are highly flammable, especially in the fall as fuel moistures reach very low levels. The combination of the climate and drought adapted shrubs results in a fire season that is year around. Most critically, winds originating from the Great Basin, locally known as Santa Anas, which create extreme fire weather conditions characterized by low humidity, sustained high-speed winds, and extremely strong gusts. Santa Ana winds typically blow from the northeast over the Peninsular Range. As the air is forced through coastal mountain passes, wind speeds of 40 miles per hour (mph) measured at ground level can be maintained for hours with gusts from 70 to 115 mph possible (Schroeder et al., 1964). Santa Ana winds create extremely dangerous fire conditions and have been the primary driver of most of Southern California's catastrophic wildfires.

The project area is mapped as being located within an area of high and very high fire hazard severity as identified by CAL FIRE. Fire history information was derived from CAL FIRE and the San Diego Geographic Information Source (SanGIS) Data Warehouse, July 2008. The assessment includes most

fires greater than 10 acres in size, however not all historic fires may be documented. No fires have been mapped within the project area.

A review of the 2003 and 2007 Fire Storms in San Diego County are enough to illustrate the result of a wildland fire during extreme fire conditions. Within San Diego County, these fires include the Paradise, Otay, Cedar, Witch, Guejito, Rice, Harris, and Poomacha fires. Extreme weather conditions in the height of fire season drove the wildfires to expand rapidly into major events.

### *3.7.1.2 Fire Sheds*

"Firesheds" are defined as regional landscapes that are delineated based on a number of fire-related features including fire history, fire regime, vegetation, topography, and potential wildfire behavior (CPUC and BLM 2008a). The fireshed concept is one way to evaluate fire risk across a given landscape and in relation to proposed projects. As defined in the Sunrise Powerlink EIR/EIS, the Tule Wind Project is primarily in the La Posta Fireshed with southern portions in the Boulevard Fireshed. The following sections describe the firesheds.

**Boulevard Fireshed Description**

The Boulevard Fireshed is located in the extreme southeastern corner of San Diego County. Nearby communities include Boulevard, Manzanita, and Jacumba, all receiving designation as communities at risk of wildfire (California Fire Alliance 2010; CAL FIRE 2001). Terrain varies throughout the fireshed with elevations ranging from below 1,700 feet amsl to nearly 4,700 feet amsl. Vegetation throughout the fireshed varies, but large portions are dominated by sparse, semi-arid vegetation including desert scrub, chaparral, juniper woodland, and oak woodland. Land ownership within the fireshed includes BLM lands, State lands, tribal lands, and private holdings. Population density is a sparse 34 people per square mile.

***Fire History***

Fire history within the Boulevard Fireshed indicates that over the last roughly 50 years, 29 wildfires have been recorded. Most fires have been small, either due to lack of fuel or quick response and control. Only three fires have grown to 500 to 1,000 acres and another three fires are considered "major" fires of over 1,000 acres. Large portions of the fireshed have not burned in the last 50 years. The xeric environment within the fireshed supports sparse vegetation, which is likely the primary limiting factor for wildfire ignition and spread. However, invasive annual grasses are establishing throughout the fireshed and may over time cause a shift to more frequent and larger fires (CPUC and BLM. 2008a). Recorded ignitions within the fireshed include a variety of sources, including equipment use, vehicles, campfires (including fires from illegal immigrants), debris burning, lightning, smoking, and powerline-related ignitions.

***Fire Suppression***

The Boulevard Fireshed is divided between the San Diego Rural Fire Protection District (SDRFPD), CAL FIRE, and the San Diego County Fire Authority (SDCFA), Boulevard and Campo Fire Stations. The Boulevard Fireshed is covered by the CAL FIRE Whitestar Station, Boulevard Fire Station, Campo Fire Department, and Jacumba Fire Station. Between these agencies, there are significant firefighting resources to serve the area's wildfire potential, especially with CAL FIRE's air attack capabilities that can reach the area within 20 minutes.

### *Wildfire Modeling Results*

The Boulevard Fireshed was modeled (CPUC and BLM. 2008a) for fire behavior, burn probability, and escape potential. Based on those results, and independent San Diego County fire behavior modeling confirmations, the fireshed includes vegetation, topography, and weather that are favorable to wildfire spread. Large expanses of naturally vegetated areas occur throughout the fireshed and could result in large-scale wildfire from an ignition, regardless of source. Supporting this conclusion is CAL FIRE's Fire Threat ranking, which indicates the level of fire threat based on the potential fire behavior (fuel rank) and expected fire frequency (fire rotation). The proposed project occurs in varying classification areas, but generally occurs within areas ranked high, very high, or extreme (CAL FIRE 2010).

## La Posta Fireshed Description

The La Posta Fireshed is located directly to the west of the Boulevard Fireshed in southeastern San Diego County and includes the northern portion of the Tule Wind Project. Nearby communities include Boulder Grove, Live Oak Springs, Cuyapaipe, and La Posta, all receiving designation as communities at risk of wildfire (California Fire Alliance 2010; CAL FIRE 2001). The La Posta Fireshed is generally at higher elevations than the Boulevard Fireshed, with elevations ranging from nearly 4,000 feet amsl to nearly 6,000 feet amsl. Vegetation throughout the fireshed varies, with coniferous forests at the higher elevations and sparse chaparral and sagebrush communities in the eastern portions of the fireshed. Land ownership within the fireshed includes USFS lands, BLM lands, State lands, City of San Diego lands, SDG&E lands, County of San Diego lands, and private holdings. Population density is higher than the Boulevard Fireshed at 56 people per square mile.

### *Fire History*

Fire history within the La Posta Fireshed indicates that over the last 50 years, 36 wildfires have been recorded. Most fires have been small, either due to lack of continuous fuels or quick response and control. A total of five fires have grown to 500 to 1,000 acres and another four fires are considered "major" fires of over 1,000 acres. Of note, the 1970 Laguna Fire in this fireshed was ignited by a downed electrical distribution line. Over the 13-year period between 1995 and 2008, there have been 419 reported ignitions. Lightning, campfire, equipment use, vehicle fires, and arson are among the primary causes.

### *Fire Suppression*

Fire suppression responsibilities are tasked to SDRFPD, CAL FIRE, SDCFA and USFS within the La Posta Fireshed. These agencies include significant firefighting resources to serve the area's wildfire potential, especially with the combined CAL FIRE and USFS air attack capabilities that can reach the area within 20 minutes or less.

### *Wildfire Modeling Results*

The La Posta Fireshed was modeled (CPUC and BLM 2008a) for fire behavior, burn probability, and escape potential. Based on those results, and independent San Diego County fire behavior modeling confirmations, the fireshed includes vegetation, topography, and weather that are favorable to wildfire spread. Large expanses of naturally vegetated areas occur throughout the fireshed and could result in large-scale wildfire from an ignition, regardless of source. Supporting this conclusion is CAL FIRE's Fire Threat ranking, which indicates the level of fire threat based on the potential fire behavior (fuel rank) and expected fire frequency (fire rotation). Fire Threat classifications vary over the project extent and include rankings of high, very high, or extreme (CAL FIRE 2007a).

### *3.7.1.3 Fire Agency Jurisdiction*

The responsibility for fire suppression within the project area is shared by the SDCFA, SDRFPD, CAL FIRE, BLM and Tribal governments. The portions of the project located on privately-owned lands fall within the jurisdiction of the SDCFA CSA 111 and 135, SDRFPD, and CAL FIRE. CAL FIRE has the primary responsibility for wildfire protection within SRAs. Fire Responsibility Areas and fire stations are shown in **Figure 3.7-1**.

**San Diego County Fire Authority**

The San Diego County Fire Authority was created by the County Board of Supervisors in July 2008 to improve fire protection and emergency medical services in the region. The goal of the SDCFA is to unify the administrative support, communications and training of 15 rural fire agencies and extend around the clock protection to 1.5 million acres of the unincorporated County lands that previously had either limited, or part-time on-call protection, by 2012.

**San Diego Rural Fire Protection District**

The San Diego Rural Fire Protection District was formed on May 18, 1983 through the consolidation of 13 East County volunteer fire departments. SDFPD, under a cooperative fire protection agreement with CAL FIRE, protects an area of approximately 720 square miles and provides emergency medical services, structural fire protection and rescue services. SDRFPD also responds to wildland fires; although wildland fire protection within this area is primarily the responsibility of CAL FIRE and the United States Forest Service (USFS).

**California Department of Forestry and Fire Protection**

CAL FIRE is the state's largest fire protection organization, whose fire protection team includes extensive ground forces, supported by a variety of fire-fighting equipment. CAL FIRE has joined with federal and local agencies to form a statewide mutual aid system. This system insures a rapid response of emergency equipment by being able to draw on all available resources regardless of jurisdiction.

**County Service Areas**

CSAs are organized under the authority of the Board of Supervisors to provide a level of emergency response within a defined jurisdictional boundary by using volunteers. CSAs have defined boundaries and most participate in the Fire Mitigation Fee program, which funds facilities and equipment, but the CSAs lack the authority to adopt a fire code or provide official response to planning and building projects. A portion of the project is located within CSAs 135 and CSA 111.

**Figure 3.7-1. Fire Facilities and Fire District Areas**

**Bureau of Land Management**

The BLM has land use jurisdiction throughout the majority of the project area. However, the BLM has no local emergency response resources.

The BLM maintains several programs in the disciplines of fire suppression, preparedness, fuels management, prevention and education, community assistance, and protection and safety, all of which are intended to safely protect the public, natural landscape, and wildlife habitat from fire-related damage. The various programs of the BLM are discussed briefly below.

- The Fire and Aviation Directorate Program is tasked with providing aerial firefighting support for fires occurring on BLM lands. Aircraft used by the BLM are BLM-owned and contracted.
- The Community Assistance and Protection Program includes mitigation and prevention, education, and community outreach. Experts within this program are typically deployed to fire-prone areas before a fire starts to educate the community regarding fire management and suppression activities.
- The Fuels Management Program focuses on protecting communities and natural resources while providing for local economic opportunities. Through this program, fuels are effectively managed through collaboration with local communities and agencies in the form of community wildfire protection programs, fuels treatment, biomass utilization, and local fuels management contracts.

It should be noted that in addition to maintaining these programs, the BLM provides funding for firefighting efforts (through Community Assistance Grants) in the rural areas of San Diego County. In the past, funding has been used for wildfire training to local volunteers responsible for responding to fires on BLM lands. In San Diego County, BLM lands are under a Direct Protection Agreement with CAL FIRE, which specifies that CAL FIRE provides fire response resources and is responsible for conducting investigations regarding the recovery of fire suppression costs (CPUC and BLM 2008a).

The project is located within the California Desert District Planning Area and in the El Centro Fire Management Zone (FMZ) of the BLM. The current Fire Management Plan (FMP) for the California Desert District was developed in 1998 and was designed around a “fire management zone” concept based on distinct vegetation communities and the strategies for fire suppression within each of those communities. The intent was for objectives and constraints identified for fire-suppression activities to be developed by Land Use Plan decisions associated with resources. The FMP categorized the Planning Area as FMZ 6, which is a CAL FIRE Direct Protection Area. CAL FIRE is the primary fire protection agency for BLM-administered lands in the area (CPUC and BLM 2008a).

The primary objective of CAL FIRE is to suppress all vegetation fires of 10 acres or less upon initial attack, based on “assets at risk analysis,” which favors protection of structures in the urban interface. CAL FIRE and BLM operate under a Cooperative Fire Protection Plan that implores CAL FIRE to consider BLM’s resource protection standards in order to develop the least-cost/least-damaging suppression strategy possible. BLM is required to send a resource advisor to work directly with the CAL FIRE incident commander to ensure resource values are fully protected or at least mitigated. This requirement is applicable to all vegetation fires occurring in the Planning Area.

**Tribal Lands**

Emergency response to fires on tribal lands is provided by the Campo Indian Reservation Fire Department by agreement with the other tribes. The Fire Department has one Type III brush fire engine,

and staffing is variable from day to day. They are dispatched as part of the first alarm fire assignment to the project area.

### *3.7.1.3 Emergency Services*

Emergency dispatch is handled by the CAL FIRE Monte Vista dispatch center. According to the dispatch center, per the Automatic Aid Agreement the area is located in a SRA and the first alarm dispatched to a vegetation fire is the same whether it is on private, state, federal, or tribal lands. The following describes the identified fire entities providing service for the project area including: response times, travel distance, travel time, and compliance/non-compliance with the Public Facilities Element of the San Diego County General Plan. **Table 3.7-1** describes the agencies, equipment and staffing for fire districts in the vicinity of the project.

**Table 3.7-1. Fire and Emergency Services Agencies, Equipment, and Staff**

| Station/Agency | Equipment | Staff |
|---|---|---|
| CAL FIRE – Whitestar (Campo) | • 5 engines<br>• 1 bulldozer<br>• 2 air tankers<br>• 2 helicopters | • 4 firefighters<br>• 1 battalion chief<br>• 2 hand crews |
| Boulevard Fire Department<br>Station # 87<br>(San Diego County Fire Authority) | • One Type I engine<br>• Two Type II engines,<br>• One Type III engine,<br>• One water tender (1,000 gallons) | • Two stipend firefighters |
| Campo Fire Department | • One water tender; or<br>• One engine company | • Two firefighters |
| Campo Indian Reservation | • One Type III engine | • Day to day staffing varies |
| Jacumba Fire Station<br>Station # 43<br>(San Diego Rural Fire Protection District) | • Engine<br>• 1,500-gallon tender | • Two stipend firefighters |
| Lake Morena Fire Station<br>Station #42<br>(San Diego Rural Fire Protection District) | • One engine or<br>• Water tender | • Two firefighters |
| Bureau of Land Management | • None | • None |
| U.S. Forest Service – Cameron, Cottonwood, or Glencliff | • Two engine companies | • Four firefighters per company |

Source: FPP September 2010.

For a building fire, the dispatch would be:

- Two or three CAL FIRE engine companies;
- Boulevard Fire Department;
- Campo Volunteer Fire Department;
- San Diego Rural Fire Protection District;
- Campo Indian reservation.

Travel times will vary depending on the responding entity, response route and location of the fire. Travel times have been determined for the following responding entities: Boulevard Fire District, CAL FIRE Whitestar station and Cal FIRE Campo station.

Emergency response time standards for residential use categories in Table 1 the County of San Diego's Wildland Fire and Fire Protection Guidelines for Determining Significance are provided in three categories shown in the **Table 3.7-2** below.

**Table 3.7-2. Emergency Response Travel Times**

| Land Use Category | Maximum Travel Time | Land Use Category Defined |
|---|---|---|
| Town | 5 minutes | Single-family residential lots of less than two acres, or more intensive uses such as multi-family residential includes all industrial development and all commercial development except neighborhood commercial. |
| Estate | 10 minutes | Single-family residential lots from two to four acres in size, Includes neighborhood commercial development. |
| Rural | 20 minutes | Large lot single-family residential and agricultural development. Lot sizes of grater than four acres. |

Source: FPP September 2010.

The project areas within the County of San Diego are designated in the County General Plan as General Agriculture 1 du/10, 40 acres (one dwelling unit allowed per 10 or 40 acres), and is zoned as A72 Agricultural, or S80 Open Space. Because neither the "Town" (1 du per 2 ac.) nor "Estate" (1 du per 2-4 ac.) land use categories defined above would apply to the Project area, the closest applicable land use category is "Rural" with a maximum travel time of 20 minutes.

All land uses within the County are classified into a limited number of "use types," based on common functional, product, or compatibility characteristics. The project is considered to be a Civic Use Type– Major Impact Services and Utility per Section 1350 of the County of San Diego Zoning Ordinance. Emergency response travel times, as found in the County General Plan, were intended to apply to habitable development such as residential and commercial. The only portion of the project which will be occupied on a regular basis is the O&M Building. The 20 minute maximum travel time standard applies to the County portions of the Project alone, but not to those portions of the Project that lie on BLM, SLC, or Ewiiaapaayp tribal land.

Travel times for the Project have been calculated from the nearest station to the following points in the Project: (1) the entrance of the Project site (defined as the intersection of McCain Valley Road and Rocky Knoll Road); (2) the northern County boundary of the Project; (3) the O&M Building on BLM land; and (4) turbine J1, which is the furthest turbine at the terminus of the northern-most string of turbines on Ewiiaapaayp tribal land. Travel times were calculated using NFPA 1142 Table C.11 (b), or based on personal conversations between Jim Hunt and the applicable agency personnel.

The nearest fire station to the entrance of the project area is the Boulevard FD. The next nearest fire stations are the Whitestar CAL FIRE station in Boulevard, on Del Sol road, and the SDRFPD fire station in Jacumba. There is also a CAL FIRE station in Campo on Highway 94 and Buckman Springs Road. **Table 3.7-3** identifies the travel times for the stations that would be the first to respond.

**Table 3.7-3. Estimated Travel Time from Nearest Fire Departments**

| Station | Location | Route | Distance (miles) | Rate of Speed (MPH) | Travel Time* (minutes) |
|---|---|---|---|---|---|
| Boulevard FD Station 87 | Entrance | Old Hwy 80/McCain Valley | 2.9 | 35 | 5.75 |
| | Northern County Boundary | Old Hwy 80/ McCain Valley/Turbine Road | 5.65<br>3.7<br>Total 9.35 | 35<br>25 | 10.25<br>9.53<br>Total 19.78 |
| | O&M Building | Via Ribbonwood/McCain Valley | 3.6<br>7.7<br>Total 11.3 | 35<br>25 | 6.77<br>19.13<br>Total 25.9 |
| | Turbine (Turbine J1) | Interstate 8/ Crestwood/Turbine Roads | 5.87<br>9.47<br>Total 15.34 | 35<br>25 | 10.6<br>23.4<br>Total 34 |
| CAL FIRE White Star | Entrance | Tierra Del Sol/Hwy 94/McCain Valley | 6.2 | 35 | 11.2 |
| | Northern County Boundary | Tierra Del Sol/Hwy 94/ McCain Valley/Turbine Road | 8.95<br>3.7<br>Total 12.65 | 35<br>25 | 15.9<br>9.53<br>Total 25.43 |
| | O&M Building | Tierra Del Sol/ Ribbonwood/McCain Valley | 6.2<br>7.7<br>Total 13.9 | 35<br>35 | 11.2<br>19.13<br>Total 30.3 |
| | Turbine (Turbine J1) | Tierra Del Sol/Interstate 8/ Crestwood/ Turbine Roads | 6.39<br>9.47<br>Total 15.86 | 35<br>25 | 11.5<br>23.4<br>Total 34.9 |
| Jacumba Fire Station # 43 | Entrance | Old Hwy 80/McCain Valley | 6.9 | 35 | 12.4 |
| | Northern County Boundary | Old Hwy 80/McCain Valley/ Turbine Road | 9.7<br>3.7<br>Total 13.4 | 35<br>25 | 17.1<br>9.53<br>Total 26.6 |
| | O&M Building | Old Hwy 80/McCain Valley | 9.7<br>7.3<br>Total 17 | 35<br>25 | 17.1<br>18.2<br>Total 35.3 |
| | Turbine (Turbine J1) | Old Hwy 80/Interstate 8 / Crestwood / Turbine Roads | 14<br>9.47<br>Total 23.47 | 35<br>25 | 24.5<br>23.4<br>Total 47.9 |

Source: FPP September 2010.

As shown in **Table 3.7-3**, the portions of the project that occur on County lands comply with the County's travel time requirements. The O&M facility is proposed to be located on BLM land and is not subject to this requirement. Nevertheless, the O&M building will be constructed of enhanced fire resistive materials, have automated and remotely supervised fire detection and suppression systems, and the O&M building is staffed during business hours.

Similarly, the turbines will be constructed of fire resistant materials. Furthermore, the project is performing road improvements to McCain Valley Road and throughout the project area, which will reduce travel times within the general vicinity and provide a community benefit.

As discussed previously, a Fire and Emergency Protection Services Agreement for the project shall be executed between Iberdrola Renewables and the SDRFPD, and other agencies as appropriate. The Agreement shall be executed by all parties prior to commencement of construction of the project. The purpose of the Agreement is to fund the employment and training of personnel, and acquisition and maintenance of equipment to provide fire and emergency protection services for the project. The Agreement will describe the scope of services to be provided by the SDRFPD, and other agencies as appropriate, and will be maintained throughout the life of the project.

#### *3.7.1.4 Project Access*

The project area is accessible via the Crestwood, Ribbonwood, and McCain Valley Road exits off I-8. The primary access routes will be Ribbonwood and McCain Valley Roads. Additional access is provided by Crestwood Road and Old Mine Road and will primarily serve the western portion of the project area including the western ridgeline.

To facilitate construction activity, existing and new access road improvements will include widening from approximately 16 to 20-foot widths to 36-foot widths to accommodate large cranes and equipment delivery. The access roads will be restored from the 36-foot temporary width (accommodates large equipment and deliveries) to the widths identified below, after the turbines have been installed.

Upon completion of construction activities, existing and proposed access roads located on land under the jurisdiction of the County of San Diego will be improved to comply with the Department of Public Works Private Road Standard of 24 feet (28-foot graded extent). The main project roads (Ribbonwood Road and McCain Valley Road) throughout the project site will be improved to a maximum of 20 feet to comply with the California Fire Code Standards on lands outside of the County's jurisdiction. Spur roads to the turbines (on land under any jurisdiction) will be improved to a maximum of 18 feet wide to comply with SRA Fire Safe Regulations. These requirements were provided by the SDCFA (personal communication, James Pine, Fire Marshal).

Thirty feet of fuel management shall occur adjacent to the access roads for the proposed facilities including the turbine roads. This shall be the reduction or where reclaimed of high fuel vegetation to less than 50 percent cover.

### 3.7.2 Sources of Wind Farm Fire Risk and Project Design Features to Minimize Fire Risks

#### *3.7.2.1 Construction*

For purposes of identifying potential sources of fire risk from the proposed project, the following issues have been identified as having the potential to elevate the risk of fire ignition. **Table 3.7-4** below identifies the sources of fire risk associated with particular construction activities, and briefly describes Project Design Features (PDF) that avoid and/or minimize the potential for fire risk associated with the particular construction activities. Detailed discussions of each PDF are provided in more detail below.

**Table 3.7-4. Construction Fire Risk, Project Design Features and Code Requirements**

| Source of Fire Risk | Project Design Feature and Code Requirements |
|---|---|
| Hot Work occurring during a Red Flag Alert. | PDF-1: Hot Work Procedure |
| Pioneering Work (initial brush clearing by bulldozer, which can result in ignition to vegetation from engine sparks or bulldozer blade strikes against rocks) | PDF-2: Construction, Operations, and Maintenance Fire Prevention/Protection Plan. |
| Some areas may require blasting to obtain the required roadway profiles and to install power poles, underground collector cables, and install turbine foundations. | PDF-3: Blasting Plan<br>PDF-4: County of San Diego Consolidated Fire Code, Section 96.1.3301.2, Explosives and Fireworks Applicability. |
| Construction waste, consisting of wood waste from wood forms used for concrete foundation construction, additional wastes, consisting of erosion control materials such as straw bales and silt fencing, and packaging materials for associated turbine parts and other electrical equipment could create a fuel hazard. | PDF-5: Construction Waste Disposal. As a standard practice, IBR does not allow construction waste to accumulate. Waste associated with project construction will be contained in metal containers and/or designated cleared construction staging areas (large items). The metal containers and staging areas will be monitored and emptied on a regular basis. |
| Chemicals such as lubricating oils and cleaners for the turbines create a fuel hazard. | PDF-6: *Storage, Use and Handling of Oils, Flammable Liquids, Hazardous Materials and Vehicle Fuels.* The proper storage, use, and handling of these materials are regulated under the California Fire Code (CFC). |
| Adequate water supply onsite to meet firefighter flow requirements in case of wildfire. | PDF-7: Based on the well pump tests performed at wells on Rough Acres Ranch and the Ewiiaapaayp Native American Reservation and other off-site water source options, an ample water supply exists for the project construction period.<br><br>If a fire were to occur in the project area, during construction activities, construction activities would cease and the groundwater available from these sources could be used to for fire fighting, in addition to the water tanks identified above. In addition, based on informal conversations with the staff members of the various fire agencies, Lake Tule and other sources could be utilized for firefighting purposes (HDR communication with County Fire Authority). |
| Inadequate fire or emergency services capacity. | PDF -8: Fire and Emergency Service Agreement. A Fire and Emergency Protection Services Agreement for the project shall be executed between IBR and the SDRFPD, and other agencies as appropriate. |

***PDF-1 Hot Work –*** Iberdrola Renewables will comply with the applicable sections in NFPA 51-B "Fire prevention during welding, cutting and other hot work" and CFC Chapter 26 "Welding and other Hot Work." During Red Flag Alerts, operations involving cutting, welding, thermit welding, brazing, soldering, grinding, thermal spraying, use of torches, or other similar activity during construction or maintenance activities will be conducted according to NFPA 51-B. Red Flag Warnings are issued by the U.S. National Weather Service based on humidity of less than or equal to 25 percent, temperature greater than 75 F degrees and a sustained wind average of 15 miles per hour or greater. The project area is located in the National Weather Service San Diego Mountain (CA 258) zone.

Iberdrola Renewables will implement a Hot Work Procedure on-site to minimize the potential for fire ignition. Components of the Hot Work Procedure will include:

- Prior to hot work activity commencing, the on-site Iberdrola Renewables fire safety coordinator will monitor daily the National Weather Service Red Flag Alert system.
- In the event of a Red Flag Alert, prior to hot work activity commencing, the on-site Iberdrola Renewables fire safety coordinator will contact the local fire agency to determine the level of alert specific to the project area.
- The on-site Iberdrola Renewables fire safety coordinator will require all hot work to be conducted according to NFPA 51-B.
- Iberdrola Renewables will require all employees and/or sub-contractors who perform hot work during Red Flag Alerts to be trained under the applicable sections of NFPA 51-B.
- The on-site Iberdrola Renewables fire safety coordinator will have the authority to modify hot work activities associated with construction and/or maintenance activities to the degree necessary to prevent fire ignition.

***PDF-2 Construction Activities*** **-** Develop and implement a Construction and Maintenance Fire Prevention/Protection Plan. Iberdrola Renewables shall develop a multi-agency Construction and Maintenance Fire Prevention Plan. Plan reviewers shall include: CPUC, CAL FIRE, BLM, CSLC, and the County of San Diego. Iberdrola Renewables shall provide a draft copy of this Plan to each listed agency at least 90 days before the start of construction activities. Comments on the plan shall be provided by Iberdrola Renewables to all other participants, and Iberdrola Renewables shall resolve each comment in consultation with and to the satisfaction of CAL FIRE, SDRFPD and the SDCFA. The final plan shall be submitted to CAL FIRE, SDRFPD and SDCFA at least 30 days prior to the initiation of construction activities. Iberdrola Renewables shall fully implement the plan during all construction and maintenance activities. All construction work on the project shall follow the Construction Plan guidelines and commitments, and plan contents are to be incorporated into the standard construction contracting agreements for the construction of the project. Primary plan enforcement and implementation responsibility will remain with Iberdrola Renewables.

At a minimum, plan contents will include the requirements of Title 14 of the California Code of Regulations, Article 8 #918 “Fire Protection” and the elements listed below:

1. During the construction phase of the project, Iberdrola Renewables shall implement ongoing fire patrols. Iberdrola Renewables shall maintain fire patrols during construction hours and for 1 hour after end of daily construction, and hotwork.
2. Fire Suppression Resource Inventory – In addition to CCR Title 14, 918.1(a), (b), and (c), Iberdrola Renewables shall update in writing the 24-hour contact information and onsite fire suppression equipment, tools, and personnel list on quarterly basis and provide it to the CAL FIRE, SDRFPD, SDCFA, CPUC, BLM, and to state and federal fire agencies.
3. During Red Flag Warning events, as issued daily by the National Weather Service in SRAs and Local Responsibility Areas (LRA), all non-essential, non-emergency construction and maintenance activities shall cease. Utility and contractor personnel will be informed of changes to the Red Flag event status as stipulated by CAL FIRE.
4. All construction crews and inspectors shall be provided with radio and cellular telephone access that is operational along the entire length of the approved route to allow for immediate reporting

of fires. Communication pathways and equipment shall be tested and confirmed operational each day prior to initiating construction activities at each construction site. The radio shall allow communications with other Iberdrola Renewables vehicles and construction trailer. All fires will be reported immediately upon detection.

5. Each member shall carry at all times a laminated card listing pertinent telephone numbers for reporting fires and defining immediate steps to take if a fire starts. Information on contact cards will be updated and redistributed to all crewmembers as needed and outdated cards destroyed, prior to the initiation of construction activities on the day the information change goes into effect.
6. Each member of the construction crew shall be trained and equipped to extinguish small fires in order to prevent them from growing into more serious threats.
7. Water storage tanks and access roads shall be installed and operational at time of start of construction.

***PDF-3 Blasting*** – As part of the project design, a blasting plan will be prepared. The blasting plan will include identification of planned blasting locations, a description of the planned blasting methods, an inventory of receptors potentially affected by the planned blasting, and to determination the area affected by the planned blasting. Blasting methods will take into consideration the high wildland fire hazard conditions in and surrounding the project area. Precautions to prevent fire will be included in the blasting plan will include requirements to have all blasting charges capped with soil and/or other materials that are not combustible.

Blasting activities are required to be observed by a Blasting Inspector. A Blasting Inspector is a person on the Sheriff's approved list of inspectors authorized to conduct inspections, before and after a blast. To be on the Sheriff's approved list, an inspector shall be certified by or registered with the International Conference of Building Officials, the International Code Counsel/Counsel of American Building Officials, the Building Officials & Code Administrator or the Southern Building Code Congress International.

***PDF-4 County of San Diego Consolidated Fire Code, Section 96.1.3301.2, Explosives and Fireworks Applicability –*** The project will comply with the County of San Diego Consolidated Fire Code, Section 96.1.3301.2, Explosives and Fireworks Applicability. The Fire Code requires a permit application to be issued prior to the start of blasting activities. Blasting activities shall be limited to Monday through Saturday between the hours of 7:00 a.m. and 6:00 p.m. or one-half hour before sunset, whichever occurs first, unless issuance of grant approval. Surrounding residents within 600 feet will be notified in writing within 600 feet of any major blast location or 300 feet from any minor blast location.

***PDF-5 Construction Waste Disposal*** – As a standard practice, Iberdrola Renewables does not allow construction waste to accumulate. Waste associated with project construction will be contained in metal containers and/or designated cleared construction staging areas (large items). The metal containers and staging areas will be monitored and emptied on a regular basis.

***PDF-6 Storage, Use and Handling of Oils, Flammable Liquids, Hazardous Materials and Vehicle Fuels –*** As part of the project construction and operations, chemicals such as oils and cleaners for turbines will be properly storage, used, and handled as regulated under the California Fire Code (CFC). Areas on the project site that store, use or handle these materials will be at least 50 feet from any building or turbine, and will have a fuel modification zone around them of at least 30 feet and will be constructed in compliance with the CFC.

Dispensing of any motor vehicle fuels shall comply with the CFC. Spill control will be provided in all areas, and shall contain the contents of the largest container. Electrical systems shall comply with the CFC and with the National Electrical Code; NFPA 70, and with NFPA 497 where applicable. Grounding and bonding will be provided where necessary. Any transfer or dispensing pumps shall have a remote emergency shut down device 75 feet away. There shall be portable fire extinguishers with a minimum rating of 20 BC, located approximately 50 feet away and mounted on a visible post approximately 4 feet off ground. Safety signage shall be provided for any transfer/dispensing areas and "No Smoking" signs shall be posted.

***PDF-7 Water Availability*** – Based upon the *Estimate of Water Availability* memorandum (Geo-Logic Associates September 7, 2010 – Appendix O), on the conservative peak water use requirements of 250,000 gallons per day (associated with road construction, concrete mixing and dust control activities), an estimated continuous supply of water (24-hours per day, seven days per week) will be required from wells pumping at a cumulative continuous rate of 124 gpm. Although there are several wells on the project site, two wells on the project site have been identified as readily available for project use:

1. One well is located on Rough Acres Ranch approximately one to two miles north of I-8 between Ribbonwood Road and McCain Valley Road. Drilled in 2009, data provided on the well log for this well indicates that the estimated well yield is 60 gallons per minute (gpm); however, with the current pump in this well, the Ranch Manager indicates that the well produces at a rate of 50 gpm. A 72-hour constant rate aquifer pumping test was performed at this well at 50 gpm. Based on the current preliminary test data, there was very little response from pumping in the adjacent observation well, about 30 feet from the pumping well, and therefore it is reasonable to assume that sustained pumping at 50 gpm, at a minimum can be achieved from this well. Further, with a higher volume pump it may be possible to pump at greater volumes without significant impacts to other adjacent groundwater users;

2. One well is located on the Ewiiaapaayp Reservation, about 7 miles north of Interstate 8 on La Posta Road. A 72-hour constant rate aquifer pumping test was conducted at this well at 80 gpm. Based on the preliminary test results it is reasonable to assume that sustained pumping at 80 gpm is feasible at this well location.

Therefore, based on the preliminary data from two recent pumping tests with a combined total pumping rate of 130 gpm, it is likely that the necessary water supply requirements for the project (124 gpm of continuous pumping, seven days a week) can be met from these two wells.

There are four potential additional water supply sources available for the project. The State Correctional Facility is located about one half mile north of Interstate 8 off of McCain Road. This correctional facility maintains two wells with estimated production of 45 and 65 gpm. The Live Oak Springs Resort located south of Interstate 8 on Old Highway 80 about ¾-mile northwest of the intersection with Highway 94 may provide a source of water supply. This resort (and water company) operates a well that pumps about 40,000 gallons per day (25 to 30 gpm) and maintains a 100,000 gallon pond, and two large tanks with an additional 50,000 gallons of storage capacity. They have committed to providing 40,000 for immediate use and up to 80,000 gallons per day with additional storage tanks (pers. comm., September 8, 2010); equivalent to 28 to 55 gpm. The Jacumba Community Service District (CSD) also has indicated that their well produces 200 gpm and they will commit up to 40,000 gallons per day to the project (pers. comm., September 8, 2010); equivalent to about 28 gpm. Finally, the City of El Centro has indicated that they are willing to sell wastewater plant effluent to the project for use during the construction phase.

The available on-site groundwater can provide the required project water requirements through continuous pumping at a rate of 124 gpm. Current pumping test results indicate at least 130 gpm can be achieved from the two tested wells, and potential greater volumes with a higher volume pump at the Rough Acres Ranch test well. However, with off-site water from the State Correctional Facility, Live Oak Springs Resort, and Jacumba CSD for purchase, an additional 80,000 to 120,000 gallons of water per day, or approximately 55 to 83 gpm of water could be available to support the project water supply needs; ample water for the nine-month construction period. With these additional off-site sources, the combined on-site and off-site water could be equivalent to an estimated 213 gpm could be made available in support of the project.

If a fire were to occur in the project area, construction activities utilizing ground water would cease and the groundwater available from these sources could be used for firefighting purposes. In addition, based on informal conversations with the staff members of the various fire agencies and other sources would be utilized for firefighting purposes (HDR staff, Pers. Comm.).

Iberdrola Renewables will provide four (4) additional water tanks to the SDRFPD to place at strategic locations throughout the site. The tanks will be maintained by the SDRFPD. The water tanks will provide a supplemental water source that can be utilized for additional fire suppression for the community of Boulevard and BLM lands that have limited access to water.

The same wells will provide the source of water during operations. When the project turbines become operational, only a limited quantity of water will be required, estimated at 2,500 gallons per day to supply the operations and maintenance building services and support staff.

***PDF-8 Execute a Fire and Emergency Protection Services Agreement*** – A Fire and Emergency Protection Services Agreement for the project shall be executed between Iberdrola Renewables and the SDRFPD, and other agencies as appropriate. The Agreement shall be executed by all parties prior to commencement of construction of the project. The purpose of the Agreement is to fund the employment and training of personnel, and acquisition and maintenance of equipment to provide fire and emergency protection services for the project. The Agreement will describe the scope of services to be provided by the SDRFPD, and other agencies as appropriate, and will be maintained throughout the life of the project.

Iberdrola Renewables will educate the construction crew and maintenance employees as to potential dangers that may occur during construction and maintenance of the project. To reduce the possibility of fire ignition during hot work, Iberdrola Renewables will implement the Hot Work Procedure and coordinate with local fire authority regarding the specific conditions in the project area. The PDFs discussed in Section 3.6 will minimize the risk of ignition sources; therefore the project's contribution to this impact is less than cumulatively considerable.

### *3.7.2.2 Electrical 34.5 kV Collection and 138 kV Transmission System*

The project's electrical system will consist of three key elements: (1) an underground and overhead collector system, which will connect the wind turbines at a voltage of 34.5 kV; (2) the project collector substation, where the voltage will be increased from 34.5 kV to 138 kV; and (3) a 138 kV transmission line that will deliver the electricity to the SDG&E proposed Rebuilt Boulevard Substation.

The electrical collection and distribution system will be designed to be in compliance with Rule 250 of the NESC, which covers all wind and ice loading requirements for overhead lines. Pole design will comply with the Avian Powerline Interaction Committee (APLIC) "Suggested Practices for Avian

Protection on Power Lines" and anti-perching devices will be utilized where poles are within 0.5 miles of turbines.

**34.5 kV Overhead Collector System**

Portions of the project's electrical collector system will be aboveground due to the rugged topography of the project area. The overhead collector system is approximately 9.4 miles in length. The majority of the collector system will be underground. The underground portion of the collector system is approximately 29 miles in length. Only 30 percent of the collector system is planned to be overhead. The 34.5 kV overhead collector system will be supported by a maximum of 250 wood or steel poles that will be 60 to 80 feet in height and 2 feet in diameter, with single and double circuit collectors.

**138 kV Transmission Line**

The overhead 138 kV transmission line will begin at the project collector substation and run south on either side of McCain Valley Road, and across I-8 to the SDG&E proposed Rebuilt Boulevard Substation located on Old Highway 80. The transmission line will be constructed as a single circuit without any under build attachments and would be a maximum of 9.7 miles.

A maximum of 116 steel galvanized or weathered steel finish transmission poles will be necessary to support the 138 kV transmission line. The steel galvanized or weathered steel finish poles supporting the transmission line will be approximately 74.5 feet in height; with typical span length of 600 feet and a maximum length of 700 feet.

The following describes the 138 kV transmission line and 34.5 collector line design:

- 138 kV Transmission and 34.5 kV collector line designs will include longer insulators to support the wires. The long insulators assure adequate conductor separation to prevent arcing during high-wind conditions. This design also protects raptors with wide wingspans.
- No switching devices with moving parts (fused cutouts, switches, reclosers) will be located on the poles. This removes a potential ignition source from arcing.
- The transmission line will be designed so under all load conditions, the line will be no closer to the ground than 25 feet. In areas where a distribution circuit is also placed on the pole at a lower elevation, the minimum clearance for the distribution circuit to the ground is 25 feet. The distance between the transmission and distribution circuits is a minimum of 10 feet, assuming worst case conditions maximum sag for the transmission circuit and minimum sag for the distribution circuit.

Self supporting poles for both 138 kV and 34.5 kV lines will generally be used at locations where the line changes direction rather than guy wires and anchors. If guy wires and anchors are used, they will be rated for a minimum of 150% of expected loading. This design approach eliminates the most likely cause of pole collapse, which is failure of a guy wire and/or anchor.

For purposes of identifying potential sources of fire risk, the following issues have the potential to elevate the risk of fire ignition. The table below identifies the sources of fire risk associated with power lines. Additionally, **Table 3.7-5** identifies PDFs that minimize the potential for fire risk associated with power lines. Detailed discussions of each PDF are provided in more detail below.

**Table 3.7-5. Electrical Collector and Transmission System Fire Risk, Project Design Features and Code Requirements**

| Source of Fire Risk | Project Design Feature and Code Requirements |
|---|---|
| Vegetation contact with conductors resulting in arcing. | PDF-9: The 34.5 kV overhead collector lines as well as the 138 kV transmission lines will be designed in accordance with CPUC GO 95 "Rules For Overhead Electric Line Construction" and the current edition of the NESC to ensure sufficient clearance between conductors and vegetation to prevent contact. For example, the 138kV transmission line will have a minimum clearance from the conductor to the ground of 30 feet and the 34.5 kV overhead collector lines will have a minimum of 18.5 feet. Although, IBR's standard practice is to place the lines at a greater distance apart (e.g., 25 feet). Based on regular visual inspections, vegetation removal and management will be conducted below the lines to ensure this clearance is maintained. |
| Malfunctioning hardware such as transformers and capacitors or arcing from pole mounted hardware. | PDF-10: The area within the project substation, which will contain transformers, capacitors, and other electrical components, will be cleared of vegetation, graveled, and maintained vegetation free. In addition, a 5-foot wide area outside the substation fence will be cleared and graveled. A 15-foot diameter area around transformers located at turbine towers will be cleared and graveled. Additional fuel management will occur for a balance of 100 feet from the turbine base.<br><br>No switching devices with moving parts (fused cutouts, switches, reclosers) will be located on the poles. This removes a potential ignition source from arcing. Equipment within the substation, including transformers, will be protected in compliance with NFPA 850 and the CFC. Fire fighting foam concentrate will be required at the substation location in the event of an oil fire. |
| Avian contact with power lines. | PDF-11: The design of the power lines will comply with APLIC "Suggested Practices for Avian Protection on Power Lines" which is the industry standard developed to minimize avian contact with power lines. Bird caused flashovers are very unlikely for the project because the energized 134 kV conductors will have minimum distances of 30 vertical feet and 12 horizontal feet apart, and the 34.5 kV overhead collector lines will have a minimum distance of 18.5 feet Vertical feet and 5 feet horizontal feet apart. |
| Conductor-to-conductor contact or floating/wind-blown debris contact with conductors or insulators. | PDF-12: The lines and associated facilities will be designed in accordance with CPUC GO 95 "Rules For Overhead Electric Line Construction" and the current edition of the NESC to ensure the design minimizes the potential for inadvertent conductor contact. |
| Wood support poles being blown down in high winds. | PDF-13: Self supporting steel poles will be utilized for the 138 kV transmission line. Steel and wood are being considered for 34.5 kV overhead collector system poles. If guy wires and anchors are used, they will be rated for a minimum of 150% of expected loading. This design approach eliminates the most likely cause of pole collapse, which is failure of a guy wire and/or anchor. |
| Dust or dirt on insulators. | PDF-14: Periodic visual inspection of the 138 kV transmission line will occur and washing will occur on an "as needed" basis as determined by the visual inspections. |
| Airplane and/or helicopter contact with conductors or support structures. | PDF-15: Electrical collection and transmission system and turbines will include the required FAA and CAL FIRE lighting and markings. |

***PDF-9 Overhead collector lines (138 kV and 34.5 kV) Transmission Lines*** – Will be designed in accordance with CPUC GO 95 "Rules for Overhead Electric Line Construction" and the current edition of the NESC to ensure sufficient clearance between conductors and vegetation to prevent contact.

***PDF-10*** – The area within the project substation, which will contain transformers, capacitors, and other electrical components, will be cleared of vegetation, graveled, and maintained vegetation free. In addition, a 5-foot wide area outside the substation fence will be cleared and graveled. A 15-foot diameter area around transformers located at turbine towers will be cleared and graveled. Additional fuel management will occur for a balance of 100 feet from the turbine base.

No switching devices with moving parts (fused cutouts, switches, reclosers) will be located on the poles. This removes a potential ignition source from arcing. Equipment within the substation, including transformers, will be protected in compliance with NFPA 850 and the CFC. Fire fighting foam concentrate will be required at the substation location in the event of an oil fire.

***PDF-11*** – The design of the power lines will comply with APLIC "Suggested Practices for Avian Protection on Power Lines" which is the industry standard developed to minimize avian contact with power lines. Bird caused flashovers are very unlikely for the project because the energized 134 kV conductors will have minimum distances of 30 vertical feet and 12 horizontal feet apart, and the 34.5 kV overhead collector lines will have a minimum distance of 18.5 feet vertical feet and 5 feet horizontal feet apart.

***PDF-12*** – The lines and associated facilities will be designed in accordance with CPUC GO 95 "Rules for Overhead Electric Line Construction" and the current edition of the NESC to ensure the design minimizes the potential for inadvertent conductor contact.

***PDR-13 –*** Self supporting steel poles will be utilized for the 138 kV transmission line. Steel and wood are being considered for 34.5 kV overhead collector system poles. If guy wires and anchors are used, they will be rated for a minimum of 150% of expected loading. This design approach eliminates the most likely cause of pole collapse, which is failure of a guy wire and/or anchor.

***PDF-14*** – Periodic visual inspection of the 138 kV transmission line will occur and washing will occur on an "as needed" basis as determined by the visual inspections.

***PDF-15*** – Electrical collection and transmission system and turbines will include the required FAA and CAL FIRE lighting and markings.

### *3.7.2.3 Wind Turbines*

Wind turbines have a number of safety features that minimize the potential for fire ignition. All electrical components are protected by current limiting devices, either thermal circuit breakers or traditional fuses. Should any of these devices register an out-of-range condition, it will immediately command a shutdown of the turbine and will disengage it from the electrical collection system. The project will be monitored Iberdrola Renewables' proprietary wind turbine monitoring Supervisory, Control and Data Acquisition system (SCADA). This system will be located in the Operations and Maintenance building (O&M) and will collect operation, performance data, and allow for remote operation of the wind turbines. In addition, this system informs personnel at Iberdrola Renewables' NCC in Portland, Oregon. The monitoring system for the SCADA will have a backup emergency power source.

For the purpose of identifying potential sources of fire risk, as it relates to the wind turbines, the following issues have the potential to elevate the risk of fire ignition:

- Nacelle Fire resulting from:
  - Electrical components and wiring;
  - Flammable gear and bearing lubricants;
  - Overheating due to blade over speed, wind or vibration; and
  - Lightning.
- Electrical Components elsewhere in the turbine.

***Nacelle Fire***

The turbine system is equipped with an arc flash detection sensors optical technology to detect the presence of the initial arc flash, over-current sensing transducers and smoke detectors. All electrical components are protected by current limiting devices, either thermal circuit breakers or traditional fuses. Should any of these devices register an out-or-range condition, the turbine will shutdown and will disengage from the electrical collection system. In addition, the SCADA system will alarm. The following two types of turbine electrical components are proposed for the project:

1. ***Up-Tower*** **-** Turbines with electrical (medium-voltage) equipment in the nacelle have a number of safety devices to detect electrical arc and smoke. The up-tower turbines being considered for this project include fire detection components that are included and mounted on key power cables within the nacelle. The fire detection and safety features include:
   - Smoke detectors
   - Arc-flash sensors – Provide a clear arc flash measurement. Since the light emitted during an arc flash event is significantly brighter than normal background light, optical technology can easily detect the light present at the initiation of the flash. If an arc-flash is detected, the turbine will immediately command a shutdown; and
   - Over-current sensing transducers – All electrical components are protected by current limiting devices, either thermal circuit breakers or traditional fuses. If any of these devices register an out-of-range condition, it will immediately command a shutdown of the turbine and will disengage it from the electrical collection system. The entire turbine is electrically protected by current-limiting switchgear that is installed inside the base of the tower.
2. ***Down-Tower*** **-** This type of turbine being considered for the project has the electrical components installed in metal cabinets inside the base of the tower, and a low-voltage-to-medium-voltage transformer installed adjacent to the transformer. In this configuration, the probability of an uncontained electrical fire in the nacelle is extremely remote, as there are no combustible materials inside the tower; however, the same potential for a fire within the electrical components and transformer exists. As with the other turbine type, a tower-based circuit breaker electrically protects the entire machine. This location will also have supervised smoke detectors.

A fire in the nacelle can melt and ignite the fiberglass enclosures and burning debris can drop to the ground, igniting other fires. Portions of the turbine could ignite and could fall to the ground. However, the project is proposing up to a 200-foot cleared area around each turbine depending on the site topography at the time of construction. Upon completion of construction, with the exception of an area

60 feet in diameter (gravel up to a 10-foot radius to provide surface stabilization), the cleared area would be revegetated using low fuel vegetation in a spacing and height configuration approved by the Fire District for a distance necessary to provide a minimum of 100 feet of fuel management from the turbine base and/or transformer. The environmental analysis conducted for the project assumed a permanent impact to a 200-foot radius around each turbine. Fuel management would be performed annually prior to May 1 and more often as needed.

Based on Iberdrola Renewables' experience, burning debris from a nacelle fire could fall up to 100-feet from the turbine; however, this is speculative as the distance that debris would fall is dependant upon the wind conditions of that particular day. Burning material could travel in a windy condition and start a vegetation fire. Burning embers in wind driven vegetation fires can also travel distances from the main fire and start spot fires.

As a supplement to the fire detection and protection features (smoke detectors, arc-flash sensors, over-current sensing transducers, SCADA system, fuel modification, fire extinguishers) provided as part of the turbine design, Iberdrola Renewables will provide one tank at the O&M building and four water tanks with locations to be confirmed with the SDRFPD. Water tanks would be located within portions of the project area that the agencies feel are strategic from a firefighting perspective.

It is possible for fire to occur in the wind turbine nacelles due to the presence of electrical control panel, and capacitor panels. Fires may be caused by electrical malfunctions, arcing in the nacelle, and excessive heat build-up in the nacelle. Hydraulic lubricating oils can also be ignited by an arc.

It is unlikely that fire ignition in the nacelle due to blade over speed would occur due to the design of the turbine blades, which are equipped with a pitch system that allows the blades to be rotated in order to control and stop the turbine. As back-up to the three independent blade pitch systems, the turbines are equipped with a mechanical breaking system. In addition, turbines are equipped with vibrations sensors that automatically shut the turbines down if vibrations exceed the normal operating conditions.

***Lightning***

Wind turbines are vulnerable to lightning strikes due to their height and location on elevated features such as ridges. Turbine blades are manufactured from fire resistant components, composites, fiberglass, carbon fiber, or a combination of all. However, to address this issue, the wind turbines being considered for this project include "grounding" features within the wind turbine blades to reduce the potential for fire due to lighting.

For purposes of identifying potential sources of fire risk, the following issues have the potential to elevate the risk of fire ignition. **Table 3.7-6** below identifies the sources of fire risk associated with wind turbines. Additionally, the table identifies PDF that minimize the potential for fire risk associated with wind turbines. Detailed discussion of the PDF regarding turbine components are provided below.

***PDF-16 Nacelle Fire Risk Reduction***

There are two basic wind turbine designs:

1. Up-Tower - Electrical equipment in the nacelle; and
2. Down-Tower - Electrical equipment mounted at ground level.

**Table 3.7-6. Wind Turbine Fire Risk, Project Design Features, and Code Requirements**

| Source of Fire Risk | Project Design Feature and Code Requirements |
|---|---|
| Nacelle Fire – Electrical<br>• Electrical components and wiring<br>• Flammable gear and bearing lubricants<br>Nacelle Fire – Braking<br>• Overheating due to turbine blade over speed, wind, and vibration | PDF-16:<br>(1) Up-Tower - Turbines with electrical (medium-voltage) equipment in the nacelle have a number of safety devices to detect electrical arc and smoke. The up-tower turbines being considered for this project include fire detection components mounted on key power cables within the nacelle. The fire detection features include:<br><br>• Smoke detectors,<br>• Arc-flash sensors,<br>• Over-current sensing transducers; and<br>• Portable fire extinguishers.<br><br>Should any of these devices register an out-of-range condition, it will immediately command a shutdown of the turbine, disengage it from the electrical collection system, and send a notice through the SCADA system to the ECC in Portland, Oregon. The entire turbine is electrically protected by current-limiting switchgear that is installed inside the base of the tower.<br><br>The project will be operated and maintained by approximately 12 permanent full-time employees, who will monitor the wind turbines during normal business hours. In addition, IBR's NCC in Portland, Oregon monitors and can control all of IBR's wind turbines through the SCADA and is staffed 24 hours a day. Primary communications with the wind farm is via Telco T1 lines, and all plants have satellite backup capability. The NCC has the ability to control each turbine individually, as well as control the substation. Should any out-of-range issue occur at the project, the NCC will contact the sites' dedicated on-call person to deploy to the site to investigate and/or call emergency services if warranted by the type of out-of-range signal transmitted to the NCC.<br><br>(2) Down-Tower - This type of turbine being considered for the project has the medium voltage electrical components installed in metal cabinets inside the base of the tower, and a low-voltage-to-medium-voltage transformer installed adjacent to the transformer. In this configuration, the probability of an uncontained electrical fire in the nacelle is extremely remote, as there are no combustible materials inside the tower. However this turbine style still has the same risk of a fire associated with electrical components as the Up-Tower style does. As with the other turbine type, a tower-based circuit breaker electrically protects the entire machine. This location will also have supervised smoke detectors.<br><br>The potential for fire ignition in the nacelle due to blade over speed, wind or vibration is limited due to the design of the turbine blades, which are equipped with a pitch system that allows the blades to be rotated in order to control and stop the turbine in high wind conditions. As back-up to the three independent blade pitch systems, the turbines are equipped with a mechanical breaking system. In addition, turbines are equipped with vibrations sensors that automatically shut the turbines down if vibrations exceed the normal operating conditions. |

| Source of Fire Risk | Project Design Feature and Code Requirements |
|---|---|
| Lightning | PDF-17: All wind turbine models for this project will incorporate blade lightning protection systems. In general, these systems consist of: air-receptors on various locations along the length of the blade, ground-conducting straps in the hub, nacelle, and tower, lightning detection tell-tale circuit cards, and tower grounding to earth. |

On the site tour of Iberdrola Renewables' Dillon Wind Farm (August 12, 2010), attendees viewed a wind turbine that included the electrical equipment mounted at ground level.

1. ***Up-Tower –*** Turbines with electrical (medium-voltage) equipment in the nacelle have a number of safety devices to detect electrical arc and smoke. For example, the turbine design being considered for the following fire detection components are included and mounted on key power cables within the nacelle:

   - Smoke detectors;
   - Arc-flash sensors; and
   - Over-current sensing transducers.

   Should any of these devices register an out-of-range condition, the device immediately commands a shutdown of the turbine and will disengage it from the electrical collection system. The entire turbine is electrically protected by current-limiting switchgear that is installed inside the base of the tower.

   The project will be operated and maintained by approximately 12 permanent full-time employees, who will monitor the wind turbines during normal business hours. In addition, Iberdrola Renewables' NCC in Portland, Oregon monitors and can control all of Iberdrola Renewables' wind turbines through the SCADA and is staffed 24 hours a day. Primary communications with the wind farm is via Telco T1 lines, and all plants have satellite backup capability. The NCC has the ability to control each turbine individually, as well as control the substation. Should any out-of-range issue occur at the project, the NCC will contact the sites' dedicated on-call person to deploy to the site to investigate and/or call emergency services if warranted by the type of out-of-range signal transmitted to the NCC.

2. ***Down-Tower –*** This type of turbine being considered for the project has the electrical components installed in metal cabinets inside the base of the tower, and a low-voltage-to-medium-voltage transformer installed adjacent to the transformer. In this configuration, the probability of an uncontained electrical fire in the nacelle is extremely remote, as there are no combustible materials inside the tower. However the same risk of a fire associated with electrical components exists. As with the other turbine type, a tower-based circuit breaker electrically protects the entire machine.

In addition, a potential fire risk associated with wind turbines is improperly installed electrical equipment (e.g., technical defects or components in the power electronics, failure of power switches, failure of control electronics, high electrical resistance caused by insufficient contact surface with electrical connections, such as loose connections, insufficient electrical protection concept with respect to the identification of insulation defects and the selectivity of switch-off units, no pole mounted disconnected switches, inadequate surge protection, inadequate grounding due to incorrect design or improper installation).

If fire ignition occurred within the Up-Tower or Down-Tower turbine type due to improperly installed electrical equipment, the fire protection and prevention features identified above would be triggered and the device that registered an out-of-range condition would immediately shutdown and an alarm would be indicated on the wind farm SCADA as well as on screens at Iberdrola Renewables' NCC in Portland, Oregon. In addition signage will be posted at the NCC to call a 10 digit 24/7 landline phone number to emergency dispatch center in San Diego County.

***PDF-17 Lightning*** – Although a final decision on the type of wind turbine has not been made, the majority of turbine manufacturers have imbedded "grounding" systems within the turbine blades to prevent ignition of a fire due to lighting. All wind turbine models being considered for this project will incorporate blade lightning protection systems. In general, these systems consist of air-receptors on various locations along the length of the blade, ground-conducting straps in the hub, nacelle, and tower, lightning detection tell-tale circuit cards, and tower grounding to earth. As mentioned earlier, Iberdrola Renewables has nearly 50 million operating hours on its U.S. fleet, and over that time lightning-induced fire has not occurred.

To provide separation of installed equipment from combustible vegetation, gravel will be placed in and around substation, O&M building, wind turbines, and transformers. The project proposes up to a 200-foot cleared area around each turbine depending on the site topography at the time of construction. Upon completion of construction, with the exception of an area 60 feet in diameter (gravel up to a 10-foot radius to provide surface stabilization), the 200-foot cleared area would be revegetated with fire safe (non-combustible), low fuel vegetation, in a spacing and height configuration consistent with fire agency standard practices for a distance necessary to provide a minimum of 100 feet of fuel management from the turbine base and/or transformer. The impact analysis in the environmental document assumes a permanent impact to a 200-foot radius around each turbine. Fuel management would be performed annually prior to May 1 and more often as needed.

### *3.7.2.4 Hazards Due to Operations and Maintenance*

Maintenance activities will be limited to areas accessible by the permanent access roads. Typical turbine maintenance activities involve deploying personnel to the turbine to service parts within the turbine, but may also include temporarily deploying a crane within the previously disturbed construction area around the turbine, removing the turbine rotor, replacing generators, and bearings. See discussion below in Section 3.6 regarding Iberdrola Renewables' Hot Work Procedure that would be implemented during any operations and/or maintenance activities that occur during Red Flag Alerts.

The project will be operated and maintained by approximately 12 permanent full-time employees, who will monitor the wind turbines during normal business hours. In addition, Iberdrola Renewables' NCC in Portland, Oregon monitors and can control all of Iberdrola Renewables' wind turbines through the SCADA and is staffed 24 hours a day. Primary communications with the wind farm is via Telco T1 lines, and all plants have satellite backup capability. The NCC has the ability to control each turbine individually, as well as control the substation. Should any out-of-range issue occur at the project, the NCC will contact the sites' dedicated on-call person to deploy to the site to investigate and/or call emergency services if warranted by the type of out-of-range signal transmitted to the NCC.

For purposes of identifying potential sources of fire risk, the following issues have the potential to elevate the risk of fire ignition. **Table 3.7-7** below identifies the sources of fire risk associated with operations and maintenance activities. Additionally, the table identifies PDF that minimize the potential for fire risk associated with operations and maintenance activities. Detailed discussion of the PDF is provided below.

**Table 3.7-7. Operations and Maintenance Fire Risk, Project Design Features and Code Requirements**

| Source of Fire Risk | Project Design Feature and Code Requirements |
|---|---|
| Off-road vehicle use<br>• Pioneering Work<br>• Sparks from road grading equipment | PDF-18:<br>• No off-road vehicle use would be necessary because all wind turbine and associated project components (e.g., substation and O&M building) will be located in cleared areas. As part of the project design, existing access roads will be improved and new access roads are proposed that meet the requirements of the County of San Diego Consolidated Fire Code (2009).<br>• Hot Work Procedure (PDF-1).<br>• Construction, Operations, and Maintenance Fire Prevention/Protection Plan (PDF-2).<br>• Road maintenance activities requiring the use of grading equipment will be suspended during red flag events.<br>• Permanently assigned project vehicles will carry, as a minimum, a fire extinguisher, shovel, and two-way-radio. |
| On highway activities located in particularly hazardous fuel conditions<br>• Idling or parked vehicles and equipment in areas of brush, grass, vegetation. | PDF-19: No vehicle will be idle or parked in areas of combustible fuels, such as brush or grass. All wind turbine and associated project components (e.g., substation and O&M building) are located in cleared areas. As part of the project design, existing access roads will be improved and new access roads are proposed. |
| Chain saw use of any kind | PDF-1:Hot Work Procedure (Section 3.7.2.1) |
| Operation of generators, pumps, augers, two-cycle motors, or other equipment capable of producing sparks or ample exhaust heat to cause ignition | PDF-20: Portable equipment powered by two cycle engines or capable of producing significant exhaust heat will be located within the 100-foot radius surrounding the turbine in which vegetative fuel reduction will take place.<br>PDF-1: Hot Work Procedure (Section 3.7.2.1) |
| Tree removal equipment including but not limited to grinders, chippers, skidders, excavators, etc. | PDF-1: Hot Work Procedure (Section 3.7.2.1)<br>PDF-2: Construction, Operations, and Maintenance Fire Prevention/Protection Plan (PDF-2).<br>PDF-20: Tree removal not anticipated for O&M period. |
| Grinding and welding | PDF-1: Hot Work Procedure (Section 3.7.2.1) |
| Working on energized electrical equipment or facilities | PDF-21: Work on energized equipment will be avoided whenever possible. Personnel performing work on energized equipment will be trained in applicable OSHA and other safety requirements. |
| Smoking | PDF-22: Limited to cleared areas around the O&M building. |
| Red Flag Warnings | PDF-1: Hot Work Procedure (Section 3.7.2.1) |
| Turbine Fire – Human Activity (Hotwork) | PDF-1: Hot Work Procedure (Section 3.7.2.1) |
| Inadequate Site Access | PDF-23: Existing access roads will be improved and new access roads will be constructed. |
| O&M Building Fire Risk | PDF-24: O&M building construction will include fire prevention and protection.<br>• Construction to comply with County Building Code (CBC).<br>• O&M building to be surrounded by 4-acre cleared area, with a minimum of 100 feet of fuel management. Structure will comply with County Code Title 9 for defensible space.<br>• Batteries will have secondary containment and required ventilation. |

| Source of Fire Risk | Project Design Feature and Code Requirements |
|---|---|
| | • Sprinkler systems installed, with the exception of the control room.<br>• SCADA monitoring system will have emergency power source.<br>• CFC and CBC compliance for fire separation.<br>• Control room will have 1-hour fire rated walls.<br>• Building will be equipped with smoke detectors.<br>• Building will be equipped with a Knox box on the exterior by the main door. |
| Substation, Transformers, or Electrical Fire Risk | PDF-25: Transformers walls will have secondary containment adequate to contain the total amount of oil plus firefighting water for 15 minutes. To be approved by SDRFPD and ASCFA. |
| Inadequate Fire or Emergency Services Capacity | PDF-8: Fire and Emergency Service Agreement. |
| Combustible Storage | PDF-26:<br>• Minimize the accumulation of combustible material. Storage of flammable materials in fire rated cabinets.<br>• Perform periodic housekeeping inspections and unsure employees are trained in the use of fire extinguishers.<br>• Combustible storage and trash will be removed from site as soon as possible. |

Construction related activities that occur during operations and maintenance activities will be conducted according the same Hot Work Procedure identified above under the PDF. This will minimize the potential for fire ignition.

***PDF-18***

- No off-road vehicle use would be necessary because all wind turbine and associated project components (e.g., substation and O&M building) will be located in cleared areas. As part of the project design, existing access roads will be improved and new access roads are proposed.
- Hot Work Procedure (PDF-1).
- Construction, Operations, and Maintenance Fire Prevention/Protection Plan (PDF-2).
- Road maintenance activities requiring the use of grading equipment will be suspended during red flag events.
- Permanently assigned project vehicles will carry, as a minimum, a fire extinguisher, shovel, and two-way-radio.

***PDF-19*** – No vehicle will be idle or parked in areas of combustible fuels, such as brush or grass. All wind turbine and associated project components (e.g., substation and O&M building) are located in cleared areas. As part of the project design, existing access roads will be improved and new access roads are proposed.

***PDF-20*** – Portable equipment powered by two cycle engines or capable of producing significant exhaust heat will be located within the 200-foot radius surrounding the turbine in which vegetative fuel reduction will take place.

***PDF-21*** – Work on energized equipment will be avoided whenever possible. Personnel performing work on energized equipment will be trained in applicable OSHA and other safety requirements.

***PDF-22*** – Smoking is limited to cleared areas around the O&M building.

***PDF-23 Existing and New Access Roads*** – As part of the project design, existing access roads will be improved and new access roads are proposed that meet the requirements of the County of San Diego Consolidated Fire Code (2009) where they occur on County lands with the exception of spurs that serve turbines only. These improvements will have the effect of decreasing fire response times to the project area and general area, in the event of a fire or other emergency.

The proposed access road improvements will also improve public safety should a vegetation fire occur in the area by providing alternate routes of egress. Currently the only public exit road from the McCain Valley area is McCain Valley Road. The proposed connector road between Ribbonwood and McCain Valley Road is proposed as a private road; however, it will not be gated. As a result this road will be available to the community in the event of an emergency. This road will be improved to meet County of San Diego private road standards. Additionally, the turbine roads will improve access allowing fire crews and tanker trucks faster initial response in the project area. Fire and other emergency vehicles will also be able to utilize the access roads to improve response times to remote areas. BLM roads or turbine roads that are proposed to be gated shall be provided with an approved Knox Box as discussed in Section 5.1.

***PDF-24 Operations and Maintenance Facility*** – The O&M facility is the only new structure proposed that will include Iberdrola Renewables staff during business hours. The O&M building will include the PDF that provide fire prevention and protection.

- The facility construction, including walls, penetrations through walls, doors, vents, roof, glazing and any skylights, will comply with the County Building Code (CBC) Wildland Urban Interface construction standards in Section 92.1.704, and Chapter 7-A of the CBC, and the CFC.
- The O&M building will be located on a 5-acre site including a parking lot and will be surrounded by a 4-acre cleared area. The substation facility will have the required 3-acre graveled fenced cleared area around it and will have adequate spacing from transformers and other potential fire sources. The project will provide a minimum of 100 feet of fuel management.
- Any batteries would comply with the requirements in the CFC and would have secondary containment and required ventilation to prevent build up of hydrogen gas.
- Various occupancies in the building, as classified by the CBC, will have the required fire separations and will comply with the CFC and CBC for the type of occupancy and activities therein; for example, storage, or maintenance shop.
- Sprinklers with exception of control room, which may have an alternative suppression system. Fire Sprinkler system will be supervised by Iberdrola Renewables' Portland Control Center and to the offsite 24/7 alarm monitoring company. Determination will be made by Iberdrola Renewables as to supervision by the alarm monitoring company. Supervision to a Fire District approved remote alarm monitoring company required based on number of sprinkler heads. Twenty heads requires electrical supervision of all valves in system, pumps, water tank level, etc. CFC Section 903.4.
- The SCADA monitoring system will have emergency power source at the O&M building, in addition to 24/7 monitoring at the NCC.

- The control room will be separated from remainder of building by 1-hour fire rated walls for fire safety and will have exterior exits.
- The building will have smoke detectors, which are supervised in control room, activate an alarm on exterior of building, and are supervised to the NCC. Alarms may not be transmitted to the offsite 24/7 alarm monitoring company, so as to avoid false calls to 911 resulting in an unnecessary response.
- The building will have a KNOX key box on exterior by main door for use by firefighters.

Per the requirements of PRC 4291, *Reduction of Fire Hazards Around Buildings*, the project will provide 100 feet of fuel modification around all buildings, and is the primary mechanism for conducting fire prevention activities on property within CAL FIRE jurisdiction.

In addition, Iberdrola Renewables will implement a brush management plan at its project O&M facility, turbine pads, and substation. This plan will be consistent with the following County Code, Title 9 sections:

- Under the Title 9 of the County Consolidated Fire Code, brush is to be modified within 100 feet (31 meters) of structures in radius, called defensible space (Section 4707.2a). There are two zones to be aware of when creating a defensible space for fire mitigation.
- Zone 1, From structure out to a minimum of 50 feet: "The area within 50 feet (15 meters) of a building or structure shall be cleared of vegetation that is not fire resistant and/or replanted with fire-resistant plants" (County Code Title 9, Section 4707.2a).
- Zone 2, Between 50 to 100 feet from structures: "In the area between 50 to 100 feet (15 to 31 meters) from a building all dead and dying vegetation shall be removed. Native vegetation may remain in this area provided that the vegetation is modified so that combustible vegetation does not occupy more than 50 percent of the square footage of this area" (County Code Title 9, Section 4707.2a).

***PDF-25 Substation Transformers*** – Transformers contain cooling oil, which can be ignited by an electrical arc. NFPA 850, including Section 10.5.2.6, provides recommendations for transformer protection. These recommendations will be followed. Transformers associated with the substation will be located approximately 50 feet from the O&M building and will a minimum of 100 feet of fuel management. The substation is proposed to be located adjacent to the O&M building on a 5-acre parcel and will be surrounded by a 3-acre graveled parcel providing a minimum of 100 feet of fuel management around the substation.

Transformers will utilize fire walls for exposure protection and will have secondary containment to control any oil that could be released. The size of the containment must be adequate to contain the total amount of oil plus firefighting water for 15 minutes. NFPA 850 recommends 10 minutes however, per NFPA 11, foam delivery from hand lines assumes an application time frame of 15 minutes. Firefighting foam concentrate will be stored at substation for use by firefighters. Typically, a 3 percent Aqueous Film Forming Foam (AFFF) concentrate is used, and the application rate is 0.16 gpm/sq. ft. for 15 minutes from a firefighter hose line. In concept, the needed gpm flow rate for the hose lines is 250 gpm. This is subject to detailed design and size of the containment. Fire resistant oils can also be used if they do not contain polychlorinated biphenyls (PCBs) or other toxic materials. Prior to operations of the facility, actual design of the transformer fire protection measures will be determined by Iberdrola Renewables and submitted to SDRFPD and SDCFA for approval.

***PDF-26 Combustible Storage*** **-** Prevention and minimization of fire risk is a primary concern for Iberdrola Renewables. Other typical best management practices related to combustible storage that will be implemented on the project site include:

- Minimizing accumulation of combustible material, only allow storage of flammable materials in fire rated cabinets, ensure all combustible waste material is collected and disposed of properly including the storage of oily rags in approved containers, maintain a list of potential fire hazards at the plant including how sources of ignition will be controlled for each of these potential hazards.
- Perform periodic housekeeping inspections to find and mitigate any fire hazards found, ensure employees and sub-contractors are trained in fire prevention, and ensure employees are trained in the use of fire extinguishers.
- Combustible storage and trash on site during construction and operation phases will be properly stored in a clear area with fuel modification around it, and be away from turbines and the substation. Such storage will be orderly and be removed from the site as soon as possible.

## 3.7.3 Regulatory Setting

**Federal**

The BLM is the federal lead agency under the National Environmental Policy Act (NEPA). This FPP will serve as part of the analysis in the Environmental Impact Statement (EIS). The NEPA analysis will be based upon the Council on Environmental Quality (CEQ) regulation for implementing NEPA (40 Code of Federal Regulations [CFR] 1500 et seq.), and the BLM NEPA Handbook (H-1790-1).

According to a 2004 Federal Energy Regulatory Commission (FERC) report, the vast majority of transmission owners follow the National Electrical Safety Code (NESC) rules or American National Standards Institute (ANSI) guidelines, or both when managing vegetation around transmission system equipment. The NESC manages electric safety rules, including transmission wire clearance standards, whereas the applicable ANSI code manages the practice of pruning and removal of vegetation. However, in California, the CPUC has adopted General Order (GO) 95 rather than NESC as the key electric safety standard for the state. The following standards, guidelines, rules and regulations identify requirements and suggested practices for vegetation management in transmission line corridors. In addition, the National Fire Protection Association (NFPA) has prepared a Standard (guidance document) on Fire Protection for Electric Generating Plants and High Voltage Direct Current Converter Stations (NFPA 850) that contains relevant information.

***National Electric Safety Code 1977, 2006***

The NESC is a national code covering a variety of basic provisions regarding electric supply stations, overhead electric supply and communication lines, and underground electric supply and communication lines. It contains work rules for construction, maintenance, and operation of electric supply and communication lines and equipment. The NESC must be adopted by states, and the State of California has adopted its own standard governing overhead transmission lines in the State. Therefore, the NESC is not discussed further.

***North American Electric Reliability Council***

NERC is a nonprofit corporation whose members are ten regional reliability councils. NERC's function is to maintain and improve the reliability of the North American integrated electric transmission system, including preventing outages from vegetation located on transmission right-of-ways (ROWs), minimizing outages from vegetation located adjacent to ROWs and maintaining clearances between transmission lines and vegetation along transmission ROWs. As a result of the recommendations following the August 14, 2003 blackouts on the East Coast, NERC was charged with developing a vegetation management standard that would be applicable to all utilities and that would provide greater specificity than the NESC and ANSI standards.

Standard FAC-003-1, Transmission Vegetation Management Program (TVMP), became effective April 7, 2006, and mandatory for all utilities, pursuant to Section 1211 of the Energy Policy Act of 2005. This standard applies to all transmission lines operated at 200 kV and above and to any lower voltage lines considered critical to the reliability of the electric system in the region. The transmission line owner must prepare, and keep current, a formal TVMP. The TVMP must identify and document clearances between vegetation and overhead, ungrounded supply conductors, taking into consideration transmission line voltage, the effects of ambient temperatures on conductor sag under maximum design loading, and the effects of wind velocities on conductor sway. Minimum clearance distances must be no less than those set forth by the Institute of Electrical and Electronics Engineers (IEEE) Standard 516-2003.

***Institute of Electrical and Electronics Engineers Standard 516-2003***

The IEEE is a leading authority in setting standards for the electric power industry. Standard 516-2003, Guide for Maintenance Methods on Energized Power Lines, provides minimum vegetation-to-conductor clearances to maintain electrical integrity.

***National Fire Protection Association Codes, Standards, Practices and Guides***

NFPA® codes, standards, recommended practices, and guides ("NFPA Documents"), are developed through a consensus standards development process approved by ANSI. This process brings together professionals representing varied viewpoints and interests to achieve consensus on fire and other safety issues. NFPA standards are recommended guidelines and nationally accepted good practices in fire protection but are not law or "codes" unless adopted as such or referenced as such by the California Fire Code or the Local Fire Agency.

- NFPA 850, Fire Protection for Electric Generating Plants and High Voltage Direct Current Converter Stations, 2010: NFPA 850 was prepared for the guidance of those charged with the design, construction, operation, and protection of electric generating plants and high voltage direct current converter stations that are covered by the scope of this document. This document provides fire hazard control recommendations for the safety of construction and operating personnel, the physical integrity of plant components, fire protection systems and equipment, and the continuity of plant operations.
- NFPA 10, Fire Extinguishers: A long-standing standard, which specifies the types, sizes, rating and locations for portable fire extinguishers. It also provides information on how to calculate the number and size of portable fire extinguishers needed.
- NFPA 11, Fire fighting foam (Low, Medium, and High Expansion Foam): NFPA 11 is a longstanding standard, which provides recommendations for design and installation of

firefighting foam systems and portable equipment. It also provides recommendations regarding calculating the amount of foam concentrate and solution needed on a flammable or combustible liquid fire.

- NFPA 13, Standard for Installation of Sprinkler systems: NFPA 13 is the standard for design and installation of fire sprinkler systems in a building. It provides the requirements for the type of system needed in a particular occupancy, water supply, sprinkler head flow and pressures, the locations of sprinkler heads, and installation of the system. This standard is referenced by the California Fire Code.
- NFPA 22, Standard for water tanks for private fire protection: Provides recommendations for the design, construction and installation of water storage tanks for private fire protection systems.
- NFPA 30, Flammable and Combustible Liquids Code: This standard provides recommendations for storage, use and handling of flammable and combustible liquids. It provides detailed information regarding tank storage, spacing, dispensing of liquids, portable containers and other related operations. NFPA 30 is referenced by the California Fire Code.
- NFPA 70, National Electrical Code: NFPA 70 is the standard for the design and installation of electrical systems. It includes recommendations for various types of occupancies and also provides recommendations and criteria for the location and installation of "explosion proof" electrical systems.
- NFPA 72, National Fire Alarm and Signaling Code: NFPA 72 is the standard for the design, installation and operation of fire alarm systems in various occupancies. This standard is used by fire alarm system designers when designing and installing a system. It is utilized also by Fire Agencies when reviewing plans for new systems.
- NFPA 497, Classification of Flammable liquids, Gases and Vapors, and for Electrical Area Installations in Chemical process areas: NFPA 497 is the standard, which is utilized along with NFPA 70 to determine flammable gas, flammable liquid and combustible liquid hazards and recommend the areas which require explosion proof electrical systems. It also sets forth the extent of the classified areas. Although the title says chemical process areas, it is used as a standard for explosion proof electrical as it defines various risks and contains numerous diagrams to help the electrical system designer.

***International Fire Code***

The IFC is published by the International Code Council, is a code which may be adopted by a jurisdiction. It forms the basis of the current California Fire Code (CCR Title 24, part 9). The IFC is the underlying nationally recognized code that sets standards and requirements to safe guard against the threat fires may pose to public health, safety, and the environment. The IFC, when adopted by a jurisdiction, regulates the planning, construction, and maintenance of development in all areas.

***International Wildland-Urban Interface Code***

The International Wildland-Urban Interface Code is published by the IFC, and is a model code addressing wildfire issues.

**State**

***California Public Utilities Commission***

*GO 95: Rules for Overhead Electric Line Construction*

GO 95 is the key standard governing the design, construction, operation, and maintenance of overhead electric lines in the State. It was adopted in 1941 and updated most recently in 2006. GO 95 includes safety standards for overhead electric lines, including minimum distances for conductor spacing, minimum conductor ground clearance, standards for calculating maximum sag, and vegetation clearance requirements. The latter, governed by Rule 35, is summarized here.

GO 95: Rule 35, Tree Trimming, defines minimum vegetation clearances around power lines. Rule 35 guidelines specify, at the time of trimming require:

- 4 feet radial clearances are required for any conductor of a line operating at 2,400 Volts or more, but less than 72,000 Volts;
- 6 feet radial clearances are required for any conductor of a line operating at 72,000 Volts or more, but less than 110,000 Volts;
- 10 feet radial clearances are required for any conductor of a line operating at 110,000 Volts or more, but less than 300,000 Volts (this would apply to the project);
- 15 feet radial clearances are required for any conductor of a line operating at 300,000 Volts or more.

GO 95 has been periodically updated over the last six decades. Under Public Utilities Code Section 1708.5, any person may petition the Commission to amend the regulation.

***CAL FIRE***

CAL FIRE has a primary objective of reducing wildfire occurrence and enforcing fire hazard clearance standards around structures and utilities in order to protect the public from loss of life property and resources. Within CAL FIRE jurisdiction areas, the LE-38 Fire Safety Inspection Program is implemented for community outreach enforcement of fire safe codes. These laws include the California Public Resources Codes (PRC) 4291, 4292, and 4293 that define defensible space clearance requirements around private structures and aboveground power lines.

CCR, Title 14 Section 1254 (described below) applies to minimum clearances around utility poles. CAL FIRE inspections of utility facilities entail making notes on violations and defects in the infrastructure. Joint inspections of electrical facilities by CAL FIRE and the utility company are encouraged for the mutual benefit of fire prevention on the part of each entity. Violations identified during inspections must be brought into compliance before the utility follow-up inspections otherwise the responsible party could face misdemeanor charges for violating fire safety laws. In the event that a fire safety violation results in a fire, the inspection records can be used later in fire-cause investigations to determine the liable party. The responsible party could pay for the resulting damage of the wildfire through the CAL FIRE Civil Cost Recovery Program, described below.

In the section of Southern California where the project is proposed, the power line hazard reduction standards are applicable year round due to the scope of the fire season. More detailed descriptions of the

applicable codes and regulations and images of exempt and non-exempt power line structures may be found in CAL FIRE Power Line Fire Prevention Field Guide (CAL FIRE 2008).

- PRC § 4291, Reduction of Fire Hazards Around Buildings, requires 100 feet of vegetation management around all buildings, and is the primary mechanism for conducting fire prevention activities on private property within CAL FIRE jurisdiction.
- PRC § 4292, Powerline Hazard Reduction, requires clearing vegetation inside a 10-foot circumference of such pole or tower which supports a switch, fuse, transformer, lightning arrestor, line junction, or which is a dead end or corner pole.
- PRC § 4293, Powerline Clearance Required presents guidelines for line clearance.
- CCR, Title 14 Section 1254 presents guidelines for minimum clearance requirements around utility poles.

***CCR, Title 14 Section 1254***

The firebreak clearances required by PRC § 4292 are applicable within an imaginary cylindrical space surrounding each pole or tower on which a switch, fuse, transformer or lightning arrester is attached and surrounding each dead-end or corner pole, unless such pole or tower is exempt from minimum clearance requirements by provisions of CCR, Title 14 Section 1255 or PRC § 4296.

The radius of the cylindroids is 10 feet measured horizontally from the outer circumference of the specified pole or tower with height equal to the distance from the intersection of the imaginary vertical exterior surface of the cylindroid with the ground to an intersection with a horizontal plane passing through the highest point at which a conductor is attached to such pole or tower. Flammable vegetation and materials located wholly or partially within the firebreak space shall be treated as follows:

- At ground level – remove flammable materials, including but not limited to, ground litter, duff and dead or desiccated vegetation that will propagate fire;
- From 0 to 8 feet above ground level – remove flammable trash, debris or other materials, grass, herbaceous and brush vegetation. All limbs and foliage of living trees shall be removed up to a height of 8 feet;
- From 8 feet to horizontal plane of highest point of conductor attachment – remove dead, diseased or dying limbs and foliage from living sound trees and any dead, diseased or dying trees in their entirety.

***CCR, Title 14, Forest Practice Rules Article 8, Rule #918 Fire Protection***

The requirements of Title 14, Section 918 applies to all vegetation operations in SRAs. This includes patrols for two hours subsequent to vegetation removal activities to ensure that the activity has not sparked a fire.

***CAL FIRE Civil Cost Recovery Program***

The CAL FIRE Civil Cost Recovery Program was established to recover the cost of fighting fires caused by people (or entities) that violate the law or were negligent in their actions. For overhead electric lines, these violations are generally related to non-compliance with vegetation clearance requirements.

***California Code of Regulations - California Building and Fire Codes***

California Code of Regulations, Title 24 parts 2 & 9, (http://osfm.fire.ca.gov/). Title 24 contains several International Codes that address fire safety including the International Fire Code, International Building Code. Additional safety regulations adopted by the California Building Standards Commission include the Uniform Mechanical Code, and Uniform Plumbing Code, which are also part of the California Code of Regulations.

***California Environmental Quality Act***

The CPUC is the state lead agency under CEQA. This FPP will serve as part of the basis for analysis in the Environmental Impact Report (EIR). Appendix G of CEQA Guidelines does not specify evaluation criteria for identifying potentially significant impacts regarding fire fuel management. Section 15382 of the *CEQA Guidelines* states that a significant effect on the environment means a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air and water. The CEQA analysis will be conducted pursuant to Section 15060-15065 of the *CEQA Guidelines*.

**Local**

***CAL FIRE San Diego Unit "Pre-Fire Management Plan 2005"***

As directed by the California State Fire Plan, the CAL FIRE San Diego Unit has prepared a "Pre-fire Management Plan" that encompasses 1,237,201 acres of SRA within San Diego County and Western portions of Imperial County. This document was last updated in 2005. Of particular concern to the unit is the continuation of drought induced tree and vegetation mortalities caused by bark beetle infestations. By proclamation of the Governor, CAL FIRE has taken steps to reduce the fire hazard by allowing the immediate removal of dead and dying trees from landowners' properties. This proclamation also directs CAL FIRE to protect public safety by clearing effective evacuation and emergency response routes and by establishing fire safe evacuation centers. In order to facilitate these projects, CAL FIRE San Diego is to coordinate and cooperate with all agencies involved. Areas of high priority that will be focused on for future fire prevention activities will be determined based on ignition trends and fire history. The overall goal of the San Diego Pre-Fire Management Plan is to protect public safety and assets by reducing wildfire ignitions and increasing initial attack successes.

***County of San Diego***

The County of San Diego Department of Planning and Land Use (DPLU) is the permitting authority for the Major Use Permit (MUP) and Building Permits. The main entities that are responsible for ensuring the health and public safety in unincorporated areas of the County are provided by San Diego County and fire protection districts (FPDs). The enforcement responsibilities within CAL FIRE and the FPDs are by any person designated by the FPD's Chief to exercise the powers and perform the duties of the fire code official as set forth in their respective fire code as ratified by the Board of Supervisors. In the unincorporated areas of the County outside of a FPD, the enforcement responsibility lay with the person designated by the Chief Administrative Officer of San Diego County or his/her authorized representative.

***County of San Diego Building and Fire Codes*** (Title 9, Divisions 1, 2 and 6, San Diego County Code of Regulatory Ordinances)

Following the October 2003 and fall 2007 wildfires, assessments were made of damaged and destroyed homes in an effort to identify areas where codes could be strengthened in order to enhance the chances of a structure surviving a wildfire. As a result, in February 2008, the County further amended the Fire Code and Building Code to include strengthened ignition-resistive construction requirements, modifying the previous two-tiered system and requiring "enhanced" standards for all new construction.

## 3.7.4 Environmental Consequences/Impact Analysis

**California Environmental Quality Act Significance Criteria**

Appendix G of *CEQA Guidelines* does not specify evaluation criteria for identifying potentially significant impacts regarding for fire fuel management. The Section 15382 of the State *CEQA Guidelines* states that a significant effect on the environment means a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air and water. In this section, the significance criteria listed below are used to evaluate the significance of fire-related impacts of the proposed project and alternatives. The FPP for the project evaluated the adverse environmental effects that a proposed project may have from wildland fire and properly mitigate those impacts to ensure that development projects do not unnecessarily expose people or structures to a significant risk of loss, injury or death involving wildland fires. Detailed guidelines for the determination of significance are identified in the County of San Diego's Wildland Fire and Fire Protection Guidelines for Determining Significance (see http://www.co.san-diego.ca.us/dplu/docs/Fire-Guidelines.pdf), as are guidelines for preparing Fire Protection Plans (*see* http://www.co.san-diego.ca.us/dplu/docs/Fire-Report-Format.pdf).

The following guidelines for the determination of significance we used to determine impacts due to the proposed project:

- Would the project 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?
- Would the project result in inadequate emergency access?
- Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance service ratios, response times or other performance objectives for fire protection?
- Would the project have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

**County of San Diego Guidelines Significance Guidelines**

- Can the project demonstrate compliance with the following fire regulations: California Fire Code, California Code of Regulations, County Fire Code, and the County Consolidated Fire Code?
- Will the project be consistent with the recommendations of the Fire Protection Plan, including fuel modification?

- Can the project meet the emergency response objectives identified in the Public Facilities Element of the County General Plan or offer Same Practical Effect?

**California Public Utility Commission and Bureau of Land Management Significance Guidelines**

- Would the presence of project facilities (overhead transmission lines, overhead collector lines, and/or wind turbines) significantly increase the probability of a wildfire?
- Would project construction, operation and maintenance, and/or decommissioning activities significantly increase the probability of a wildfire?
- Would the presence of the overhead 138 kV transmission lines, overhead 34.5 kV collector lines, and/or wind turbines reduce the effectiveness of firefighting?
- Would project activities contribute to an increased ignition potential and rate of fire spread through the introduction of non-native plants?

*Would the project 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?*

Construction, Operations and Maintenance, and Decommissioning

The project area has been identified by CAL FIRE as located in an area of high and very high fire hazard severity. As described in Section 3.7.2, **Table 3.7-4**, fire risks due to the project include the following:

- ***Construction Activities*** – Fire ignition risks and PDFs that address those risks are identified in Section 3.7.2.1, **Table 3.7-4**. Based on the high and very high fire hazard conditions in the project area, even after application of the PDFs (PDF-1 through PDF-8), a significant impact related to potential fire ignition during construction activities will occur.
- ***Electrical 34.5 kV Collection and 138 kV Transmission System*** – Fire ignition risks and PDFs that address those risks are identified in Section 3.7.2.2, **Table 3.7-5**. Based on the high and very high fire hazard conditions in the project area, even after application of the PDF (PDF-9 through PDF-15), a significant impact related to potential fire ignition associated with the electrical collection and transmission system will occur.
- ***Wind Turbines*** – Fire ignition risks and PDFs that address those risks are identified in Section 3.7.2.3, **Table 3.7-6**. Based on the high and very high fire hazard conditions in the project area, even after application of the PDFs (PDF-16 and PDF-17) a significant impact related to potential fire ignition associated with electrical fire in the nacelle or other areas of the turbine will occur. This impact is considered a significant impact.
- ***Operations and Maintenance Activities*** – Fire ignition risks and PDFs that address those risks are identified in Section 3.7.2.4, **Table 3.7-7**. Based on the high and very high fire hazard conditions in the project area, even after application of the PDFs (PDF-1, 2, 18 through 26) a significant impact related to potential fire ignition during construction activities will occur.

*Would the project result in inadequate emergency access*

Construction, Operations and Maintenance, and Decommissioning

As shown in **Table 3.7-3**, the portions of the project that occur on County lands comply with the County's travel time requirements. The O&M facility is proposed to be located on BLM land and is not subject to this requirement. Additionally, the O&M building will be constructed of enhanced fire resistive materials, and have automated and remotely supervised fire detection and suppression systems, and will be staffed during business hours. Similarly, the turbines will be constructed of fire resistant materials and will include PDFs and a mitigation measure to reduce the risk of fire, as summarized in Section 3.7.2.3. Furthermore, the project is performing road improvements to McCain Valley Road and throughout the project area, which will reduce travel times within the general vicinity and provide a community benefit.

The project would comply with the County's emergency and fire response requirement at the County's northernmost boundary. In addition, due to the remote location and that the project is Service and Utility Project with a low occupant load and not a residential project, the available emergency response are considered adequate. Fire services would not be adversely affected by implementation of the project. The project will improve and create new access roads, which will improve emergency response times to remote locations within the project. A less than significant impact is identified.

*Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance service ratios, response times or other performance objectives for fire protection*

Construction, Operations and Maintenance, and Decommissioning

The project will comply with the County's emergency and fire response requirement at the County's northernmost boundary. In addition, due to the remote location and the fact that this is not a residential development, but is a Service and Utility Project with a low occupant load, the available emergency response is adequate. Services would not be adversely affected by implementation of the project. The project will improve and create new access roads, which will have the effect of improving emergency response time to remote locations within the project area. The project will not result in substantial adverse impacts associated with the provision of new or physically altered governmental facilities that would cause a significant environmental impact. Additionally, the project is required to upgrade access roads and provide adequate fuel modification areas to meet fire code requirements. Iberdrola Renewables shall enter into a Fire and Emergency Protection Services Agreement with the SDRFPD, and other agencies as appropriate. These aspects of the project will result in impacts to biological resources, which is addressed separately. This issue will result in a less than significant impact.

*Would the project have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed*

Construction, Operations and Maintenance, and Decommissioning

As discussed in Section 3.7.2.1, the project has sufficient water supplies available to meet the peak construction demand, and operational demand. Decommissioning water demands would require less water than the construction demand considering that new roadways will not require construction. A less than significant impact is identified.

*Can the project demonstrate compliance with the following fire regulations: California Fire Code, California Code of Regulations, County Fire Code, and the County Consolidated Fire Code*

Construction, Operations and Maintenance, and Decommissioning

The project will comply with California Fire Code, California Code of Regulations, County Fire Code and the County Consolidated Fire Code as listed in Section 3.7.3. The project will have a less than significant wildland fire impact.

*Will the project be consistent with the recommendations of the Fire Protection Plan, including fuel modification*

Construction, Operations and Maintenance, and Decommissioning

An FPP has been required for the proposed project, although it has not been approved to date. The FPP evaluates adequate emergency services, fire access, water supply, ignition resistant construction and fire protection systems, fire fuel assessment, fire behavior modeling, defensible space and vegetation management, and cumulative impacts. As part of the FPP, as it relates to the topics identified above, the plan identifies PDFs and mitigation measures to comply with the County of San Diego Consolidated Fire Code, including fuel modification.

As described in Section 3.7.2, the O&M building will have a 4-acre cleared area surrounding building and the substation facility, and the building will be placed such that a 100' fuel modification zone will give adequate spacing form transformers and potential fire sources. In addition, Iberdrola Renewables will implement a brush management plan for the O&M building and substation facility in accordance to Title 9 of the San Diego County Code to clear brush away from structures.

The project proposes up to a 200-foot cleared area around each turbine depending on the site topography at the time of construction. Upon completion of construction, with the exception of an area 60 feet in diameter (gravel up to a 10-foot radius to provide surface stabilization), the 200-foot cleared area would be revegetated with fire safe (non-combustible), low fuel vegetation, in a spacing and height configuration consistent with fire agency standard practices for a distance necessary to provide a minimum of 100 feet of fuel management from the turbine base and/or transformer. The impact analysis in the environmental document assumes a permanent impact to a 200-foot radius around each turbine. Fuel management within the area would be performed, annually prior to May 1 and more often as needed.

Upon approval of the FPP, the project will be consistent with the FPP recommendations, including fuel modification. The project will have a less than significant impact.

*Can the project meet the emergency response objectives identified in the Public Facilities Element of the County General Plan or offer Same Practical Effect*

Construction, Operations and Maintenance, and Decommissioning

The project is serviced by several fire entities; CAL FIRE; Boulevard Fire Department; Campo Volunteer Fire Department; San Diego Rural Fire Protection District; and Campo Indian reservation.

As shown in **Table 3.7-3**, the portions of the project that occur on County lands comply with the County's travel time requirements. The O&M facility is proposed to be located on BLM land and is not subject to this requirement. Nevertheless, the O&M building will be constructed of enhanced fire resistive

materials, have automated and remotely supervised fire detection and suppression systems, and staffed during business hours.

Similarly, the turbines will be constructed of fire resistant materials and will include PDFs to reduce the risk of fire. Furthermore, the project is performing road improvements to McCain Valley Road and throughout the project area, which will reduce travel times within the general vicinity and provide a community benefit.

The project would comply with the County's emergency and fire response requirement at the County's northernmost boundary. In addition, due to the remote location and that the project is considered a Service and Utility project with a low occupant load and not a residential development, the available emergency response is adequate. Services would not be adversely affected by implementation of the project. The project will improve and create new access roads, which will have the effect of improving emergency response time to remote locations within the project area. Therefore, the project will have a less than significant impact on emergency response objectives.

*Would the presence of project facilities (overhead transmission lines, overhead collector lines, and/or wind turbines) significantly increase the probability of a wildfire?*

Construction, Operations and Maintenance, and Decommissioning

***34.5 kV Overhead Collector Lines and 138 kV Transmission Lines*** – The majority of the 34.5 kV collector lines are proposed to be undergrounded and would not significantly increase the probability of a wildfire. The overhead collector system is approximately 9.4 miles in length. The majority of the collector system will be underground. The underground portion of the collector system is approximately 29 miles in length. Only 30 percent of the collector system is planned to be overhead.

The presence of the turbines and overhead 138 kV transmission line may create a new source of potential wildfire ignitions. Line faults could occur as a result of any of the reasons identified in Section 3.3 and the fire hazards associated with the turbines is discussed in Section 3.4. Any line faults or turbine related events that create sparks that ignite vegetation could result in a wildland fire if the ignition was to occur during extreme weather conditions. Due to the existing high-fire hazard conditions in and surrounding the project area, construction of the project components (transmission line and turbines) could increase the risk of fire. This impact is considered significant because certain ignition sources are unavoidable, for example contact with floating or windblown debris.

The steel galvanized or weathered steel finish poles supporting the transmission line will be approximately 74.5 feet in height; with typical span length of 600 feet and a maximum length of 700 feet. The 34.5 kV overhead collector system will be supported by a maximum of 250 wood or steel poles that will be 60 to 80 feet in height and 2 feet in diameter, with single and double circuit collectors.

Due to the potential for ignitions related to the 34.5 kV overhead lines, 138 kV transmission and lines, or turbines during extreme fire weather, construction and operation of the project within area could significantly increase the likelihood of a fire. Implementation of PDF-8 through PDF-15 will help to reduce the risks associated with overhead 34.5 kV collector lines and 138 kV transmission lines, although a significant impact is still identified related to this issue.

***Wind Turbine*** – It is possible for fire to occur in the wind turbine nacelles due to the presence of electrical control panel, and capacitor panels. Fires may be caused by electrical malfunctions, arcing in

the nacelle, and excessive heat build-up in the nacelle. Hydraulic lubricating oils can also be ignited by an arc.

Fire ignition risks and PDFs that address fire ignition risks associated with wind turbines are identified in Section 3.7.2.3, **Table 3.7-6**. Based on the high and very high fire hazard conditions in the project area, even after application of the PDFs (PDF-16 and PDF-17) a significant impact related to potential fire ignition associated with electrical fire in the nacelle or other areas of the turbine will occur. This impact is considered a significant impact.

*Would project construction, operation and maintenance, and/or decommissioning activities significantly increase the probability of a wildfire*

Construction

Construction activities associated with the proposed project would include, but not be limited to, use of vehicles and heavy equipment for vegetation removal and grading, the construction of transmission tower pads and towers, construction of collector tower and tower pads, and the installation of conductors. Additional heavy equipment, vehicles, and tools would be used for preparation construction of the turbine pads, of staging areas, and new roads. The use of heavy equipment along with the personnel required to construct, repair, and maintain the project features line introduce the potential for a variety of wildfire ignition sources to surrounding vegetation fuels and combustible materials (such as diesel fuel and herbicide) associated with project activities.

The use of heavy equipment and the presence of personnel may increase the wildfire ignition potential in the project construction areas compared with existing conditions.

Operation and Maintenance

Maintenance activities would include the periodic use of vehicles and presence of personnel and could also include the use of heavy equipment for repairs or replacement of project components. These activities would be far less intensive than construction activities; however, they would recur periodically over the life of the project, supplying an ongoing source of ignitions for 30 years or more. Project-related ignitions within the proposed project corridor have the potential to escape initial attack containment and become catastrophic fires. The areas with heavy fuel loads, steep topography, and exposure to Santa Ana winds would have a higher burn probability and a higher potential for an ignition to escape.

During the operations and maintenance phase of the project, smoking would be limited to the cleared areas around the O&M building and as with the construction phase of the project hot work would be limited during Red Flag alerts.

Decommissioning

These activities are very similar to construction discussed above.

Implementation of PDF-1 through PDF-8 and PDF-17 through PDF-22 will reduce some impacts due to the project, although the proposed project would require construction and maintenance activities that will increase the risk of fire to communities, firefighter health and safety, and natural resources. This issue is considered a significant impact for all phases of the project.

*Would the presence of the overhead 138 kV transmission lines, overhead 34.5 kV collector lines, and/or wind turbines reduce the effectiveness of firefighting*

Construction, Operations and Maintenance, and Decommissioning

The project design will upgrade roadway widths to provide better infrastructure to the area for fire emergency vehicles. The project would increase the amount of overhead transmission lines, overhead collector lines, but they would be located along roadways and would not impede firefighting apparatus. In addition, the transmission lines will be at a height of approximately 74 feet with a typical span of 600 feet and a maximum of 700 feet, which would give adequate clearance for emergency vehicles and fire truck ladders. Turbines will have a maximum of 328 feet for the steel tower, with a rotor diameter of 328 feet for a maximum height of 492 feet. The turbines will be connected by an access roadway, located approximately one-quarter mile from each other.

***Fire and Emergency Access*** – The project's upgraded access roads, which include County roads, BLM roads and turbine roads, will serve to improve access to areas that are currently not accessible by fire-fighting vehicles and reduce response times.

The project roads will also improve public safety should a vegetation fire occur in the area by providing alternate routes of egress. Currently, the only public exit road from the McCain Valley area is McCain Valley Road. The proposed connector road between Ribbonwood Road and McCain Valley Road is proposed as a private road, however will not be gated. As a result this road will be available to the community in the event of an emergency. Additionally the turbine roads will improve access allowing fire crews and tanker trucks faster initial response to remote portions of the BLM land and/or the project area. Any BLM roads or turbine roads that are proposed to be gated shall be provided with an approved Knox Box as discussed in Section 5.1.

***Aerial and Ground-based Firefighting*** – Aerial firefighting efforts would not be compromised by implementation of the project. The turbines are located approximately one-quarter mile apart which would allow helicopters to navigate between the towers. Furthermore, the turbines and towers will be equipped with safety lighting as required by the FAA.
The transmission lines are spaced far enough apart to not restrict aircraft maneuverability and significantly increase the risk of contact by aircraft or water buckets. Water drops are performed at 150 feet above the ground otherwise known as the "150-foot drop zone." The transmission towers are proposed to be 75 feet in height, less than half the height of the drop. Ground based fire fighting could be compromised by the presence of downed transmission and collector lines could make an area too dangerous to enter for firefighting/fire suppression activities. Any reduction in the ability of fire fighting/suppression activities to occur during extreme weather conditions could, in part, restrict fire fighting/suppression.

In addition to the PDF, a Memorandum of Understanding (MOU) for the project shall be created and implemented between Iberdrola Renewables and the SDCFA, CAL FIRE, BLM, and other agencies as appropriate. The MOU shall be adopted by all parties prior to energizing the new transmission line. The purpose of this Multi-agency Fire Prevention MOU is to efficiently coordinate all aspects of agency and utility fire prevention plans and practices. The MOU will integrate the following components of the Iberdrola Renewables fire plan with existing agency fire plans: fire prevention, firefighter safety, and emergency communication, firefighter training of both ground and aerial utility personnel, and others as appropriate.

The project transmission lines, collector lines, and turbines will not reduce fire fighting effectiveness. In addition, a MOU will be implemented between Iberdrola Renewables to integrate the following components into the existing agency fire plan. Impacts are considered less than significant.

*Would project activities contribute to an increased ignition potential and rate of fire spread through the introduction of non-native plants*

Construction, Operations and Maintenance, and Decommissioning

Project activities create the potential for the introduction and spread of non-native, invasive plants. Non-native plants are often spread by human and vehicle vectors in areas of large-scale soil disturbance and importation. These actions along with the opening of the vegetation canopy through the clearing of trees and shrubs involved with the construction and maintenance of the proposed project could contribute to the introduction and proliferation of non-native, invasive plants. The introduction and spread of specific invasive plants within the proposed project ROW would adversely influence fire behavior by increasing fuel load, fire frequency, and fire spread.

The project has been designed to place gravel on roads and around the base of the turbines. This will reduce the area in which invasive weeds can invade in these locations. The introduction of non-native plants with an increased ignition potential and rate of wildfire spread.

Iberdrola Renewables will prepare and implement the Noxious Weed and Invasive Species Control Plan for pre-construction and long-term invasive weed abatement. The plan will be prepared prior to construction. Where Iberdrola Renewables owns the ROW property, the plan will include specific weed abatement methods, practices and treatment timing developed in consultation with the San Diego County Agriculture Commissioner's Office and the California Invasive Plant Council (Cal-IPC**)**, or the tribal government, as appropriate. On the ROW easement lands administered by public agencies (BLM, CSLC), and Wildlife Agencies the Noxious Weed and Invasive Species Control Plan will incorporate all appropriate and legal agency-stipulated regulations. The plan will be submitted to the ROW land-holding governmental entities for final authorization of weed control methods, practices, and timing prior to implementation of the plan on public lands. For those ROW easements located on private lands, Iberdrola Renewables will work with the landowners to obtain authorization of the weed control treatment that is required.

In addition to the Noxious Weed and Invasive Species Control Plan, a Habitat Restoration Plan will also be developed upon the completion of the biological technical report and in compliance with the report to minimize or mitigate negative impacts on vulnerable plants and wildlife to the project area. The combination of these two monitoring plans will help to ensure that both revegetation and weed control efforts are successful. Impacts due to non-native plants are considered less than significant with the implementation of the identified plans.

## 3.7.5 Cumulative Impacts

CEQA and NEPA require an analysis of cumulative impacts. Cumulative impacts to fire and fuels management would impact area fire service providers. The SDCFA, portions of the County Service Area 135, the SDRFPD, CAL FIRE, BLM and Tribal governments service the surrounding area. The project is located in an area that has the potential for wildfires. The project area has been identified in the County of San Diego Draft General Plan Update (April 2010) as having moderate to very high in the

majority of the project area and extreme potential for wildland fires in the western portion of the project area.

There currently are several energy projects within the general vicinity. There are five energy projects, nine transmission and other renewable projects, ten federal development projects, and 39 County Development projects located in the general vicinity of the Tule Wind Project area. The proposed project is considered a connected action with the SDG&E ECO Substation project which is proposing upgrades to the existing substation and a double-circuit 230 kV or a single-circuit 500 kV transmission line and the Energia Sierra Jaurez United States Transmission Generation Tie Line project (ESJ) which proposes either a double circuit 230 kV or a single circuit 500 kV transmission line. The project area is also identified as a proposed transmission route for the Sunrise Power Link project. This would add an additional 230 kV double-circuit or single circuit along McCain Valley Road. In addition to the energy projects, the Campo Indian Reservation is in the process of adding an additional 80 turbines to the existing 25 turbines. These additional energy projects could have a cumulative effect on the surrounding area due to wildfire and wildfire management. Other projects in the area are composed of residential developments, mining operations, cell towers, and commercial development.

The components of the area energy projects may have an affect on fire fighting capability due to the transmission lines and turbines absent implementation of PDFs and Mitigation Measures. According to the Cumulative Projects list, **Table 2.0-8**, the following projects had identified hazardous impacts, or which were all identified as wildland fire impacts:

- *Miller Creek Reclamation Plan* – NOP February 2005, Major Use Permit and Reclamation Plan for the extraction of sand resources in Compo. Operation would encompass 136 acres on 763 acres. MUP would allow for extraction of sand on 58.2 acres. 16.4 acres are would be used for the creation of wetlands. General operation for processing would consist of 61.9 acres. Project to be completed over 25 years in four phases. A Draft EIR is currently in process. Impacts to aesthetics state scenic highway located viewshed of state scenic highway off I-8 and visual impacts to the area. Funds not available for EIR submittal. Hazards due to impact due to wildland fires.
- *Volli TPM* – For subdivision to create four 8-acre parcels, and one 7.9-acre parcel for single-family residence. Land use and planning slope density not current. Biological open space not viable mitigation. County requesting fire protection plan, hydrology study, grading plan, and stormwater plan. Project determined to have inactive status as of November 2009. Impacts due to wildland fire hazards.
- *Ketchem Ranch (MUP, SP, GPA, RZ)* – Mixed use project in Jacumba for 2,126 residential units and 272 townhomes, reclamation plan, elementary school and park. General Plan amendment to change regional category from RDA to CT. MUP for wastewater treatment plant. County does not recommend approval, February 2007. NOP EIR July 2007. Inactivity notification: 60-day notice, November 2009. Extension to January 2010. Impacts due to wildland fires.

The following cumulative impacts have the potential to occur:

- Introduction of non-native plants which can contribute to fire spread rate.

  Iberdrola Renewables will implement a Noxious Weed and Invasive Species Control Plan to reduce the introduction of non-native plants into the project area. Given natural state of the project area consideration of the combined energy projects that are scheduled for development, it is anticipated that collectively non-native plants will be introduced into the area. However, the

implementation of the Invasive Species Plan that will be in place for the project will render the project's contribution to this impact less than cumulatively considerable by preventing non-native species from being introduced.

- Alter the natural fire system.

  The project area is considered to be in a high to very high fire danger area and historically has not experienced a catastrophic fire in recent history. The vegetation in the area will be altered due to the construction of the turbines, the roadways, and structures. The mitigation measures that will be in place for the project, including a Disturbed Area Revegetation Plan, will render the project's contribution to this impact less than cumulatively considerable by minimizing the potential for ignition which would result in an alteration to the natural fire system.

- Impact natural resources.

  The project and cumulative projects will impact vegetation communities due to the construction of transmission lines, turbines, and structures. Iberdrola Renewables will implement several Mitigation Measures, including a Disturbed Area Revegetation Plan, which will render the project's contribution to this impact less than cumulatively considerable because temporary impacts to vegetation communities will be revegetated to pre-construction conditions and permanent impacts will be mitigated. A comprehensive analysis is provided in the Biological Technical Report for the project (HDR 2010).

- Impact firefighting effectiveness due to the project components (turbines, transmission lines).

The project and cumulative projects will include wind turbines, transmission lines, and non-residential structures that absent mitigation could hamper firefighting effectiveness. Helicopter use likely will not be limited in the area during a wildland fire because the wind turbines can be shut-down from the on-site O&M building and/or Iberdrola Renewables' NCC in Portland, Oregon, which is staffed continuously. Turbines and transmission structures will include any required FAA lighting and markings, which will make them visible reducing the potential for contact from aerial fire fighting. The transmission lines are spaced far enough apart to not restrict aircraft maneuverability and significantly increase the risk of contact by aircraft or water buckets. Water drops are performed at 150 feet above the ground otherwise known as the "150-foot drop zone". The transmission towers are proposed to be 75 feet in height, less than half the height of the drop.

Ground based fire fighting could be compromised by the presence of downed transmission and collector lines could make an area too dangerous to enter for firefighting/fire suppression activities. In order to prevent this, Iberdrola Renewables shall immediately de-energize the electrical collector and transmission systems during fire emergencies in which SDG&E de-energizes its local 138 kV system. Appropriate fire agencies shall be immediately notified of the line de-energizing. Additionally, Iberdrola Renewables shall provide all appropriate local, state, and federal fire dispatching agencies with an on-call contact person (Fire Coordinator) who has the authority to shut down the line in areas affected by a fire. The transmission line shall be de-energized prior to and during fire suppression activities within 1 mile of the transmission corridor to maintain firefighter safety, and re-energizing shall require notification and approval of all the responsible fire agencies (FPP 11). The project is also improving existing access roads and constructing new roads which will improve access for firefighting.

In addition a Fire and Emergency Protection Services Agreement for the project shall be executed between Iberdrola Renewables and the SDRFPD, and other agencies as appropriate. The Agreement shall be executed by all parties prior to commencement of construction of the project. The purpose of the Agreement is to fund the employment and training of personnel, and acquisition and maintenance of

equipment to provide fire and emergency protection services for the project. The Agreement will describe the scope of services to be provided by the SDRFPD, and other agencies as appropriate, and will be maintained throughout the life of the project. This will prevent the project from contributing to a decrease in service through the additional demand of services from the project.

The PDFs discussed in Section 3.7.2 will minimize the risk of ignition sources; therefore the project's contribution to a cumulative impact is considered less than significant.

### 3.7.6 CEQA Levels of Significance Before Mitigation

*Would the project 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*

Construction

The project construction will increase the risk of fire in the area due to hotwork, pioneering work, blasting, construction waste, and the use of chemicals. Implementation of PDF-1 through PDF-8 will help to reduce construction fire impacts, although a significant impact is still identified.

Operations and Maintenance

The project operations and maintenance include the use of overhead collector lines which have the potential have the following fire risks; contact with vegetation which result in arching, malfunctioning hardware, avian contact with power lines, wind-blown debris contact with conductors or insulators, blown-down wood poles, dust and dirt on insulators, and airplane and/or helicopter contact with conductors or support. Implementation of PDF-9 through PDF-15 will help to reduce impacts, although a significant impact still is identified.

Based on the high and very high fire hazard conditions in the project area, even after application of the PDFs (PDF-16 and PDF-17), a significant impact related to potential fire ignition associated with electrical fire in the nacelle or other areas of the turbine will occur. This is considered a significant impact.

Decommissioning

*Would the project result in inadequate emergency access*

Construction, Operations and Maintenance, and Decommissioning

As shown in **Table 3.7-3**, the portions of the project that occur on County lands comply with the County's travel time requirements. The O&M facility is proposed to be located on BLM land and is not subject to this requirement. The project would comply with the County's emergency and fire response requirement at the County's northernmost boundary. Impacts are considered less than significant.

*Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance service ratios, response times or other performance objectives for fire protection*

Construction, Operations and Maintenance, and Decommissioning

As previously discussed, the project will comply with the County's emergency and fire response requirements. Additionally, the project will improve and create new access roads, which will have the effect of improving emergency response time to remote locations within the project area. The project will not result in substantial adverse impacts associated with the provision of new or physically altered governmental facilities that would cause a significant environmental impact. Impacts are considered less than significant.

*Would the project have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed*

Construction, Operations and Maintenance, and Decommissioning

The project has sufficient water supplies available to meet the peak construction demand, and operational demand. Decommissioning water demands would require less water than the construction demand considering new roadways will not require construction. A less than significant impact is identified for this issue.

*Can the project demonstrate compliance with the following fire regulations: California Fire Code, California Code of Regulations, County Fire Code, and the County Consolidated Fire Code*

Construction, Operations and Maintenance, and Decommissioning

The project will comply with California Fire Code, California Code of Regulations, County Fire Code and the County Consolidated Fire Code as listed in Section 3.7.3. The project will have a less than significant impact.

*Will the project be consistent with the recommendations of the Fire Protection Plan, including fuel modification*

Construction, Operations and Maintenance, and Decommissioning

The O&M building will have a 4-acre cleared area surrounding building and the substation facility, and the building will be placed such that a 100' fuel modification zone will give adequate spacing form transformers and potential fire sources. In addition, Iberdrola Renewables will implement a brush management plan for the O&M building and substation facility in accordance to Title 9 of the San Diego County Code to clear brush away from structures.

In addition, the project proposes up to a 200-foot cleared area around each turbine depending on the site topography at the time of construction. Upon completion of construction, with the exception of an area 60 feet in diameter (gravel up to a 10-foot radius to provide surface stabilization), the 200-foot cleared area would be revegetated with fire safe (non-combustible), low fuel vegetation, in a spacing and height configuration consistent with fire agency standard practices for a distance necessary to provide a minimum of 100 feet of fuel management from the turbine base and/or transformer. Fuel management

within the area would be performed, annually prior to May 1 and more often as needed. The project will have a less than significant wildland fire impact.

*Can the project meet the emergency response objectives identified in the Public Facilities Element of the County General Plan or offer Same Practical Effect*

Construction, Operations and Maintenance, and Decommissioning

The project is serviced by several fire entities; CAL FIRE; Boulevard Fire Department; Campo Volunteer Fire Department; San Diego Rural Fire Protection District; and Campo Indian reservation. As shown in **Table 3.7-3**, the portions of the project that occur on County lands comply with the County's travel time requirements. The project would comply with the County's emergency and fire response requirement at the County's northernmost boundary. In addition, due to the remote location and that the project is considered a Service and Utility project with a low occupant load, and not a residential development the available emergency response is adequate. Services would not be adversely affected by implementation of the project. The project will improve and create new access roads, which will have the effect of improving emergency response time to remote locations within the project area. Therefore, the project will have a less than significant impact on emergency response objectives.

*Would the presence of project facilities (overhead transmission lines, overhead collector lines, and/or wind turbines) significantly increase the probability of a wildfire*

Construction, Operations and Maintenance, and Decommissioning

The presence of the turbines, overhead 34.5 kV, and 138 kV transmission line may create a new source of potential wildfire ignitions. Due to the existing high-fire hazard conditions in and surrounding the project area, construction of the project components (transmission line and turbines) could increase the risk of fire. This impact is considered significant because certain ignition sources are unavoidable, for example contact with floating or windblown debris. Due to the potential for ignitions related to the 34.5 kV overhead lines, 138 kV transmission and lines, or turbines during extreme fire weather, construction and operation of the project within area could significantly increase the likelihood of a fire. Implementation of PDF-8 through PDF-17 will assist to reduce impacts, although a significant impact related to potential fire ignition associated with electrical fire in the nacelle or other areas of the turbine will occur. A significant impact is identified related to this issue.

*Would project construction, operation and maintenance, and/or decommissioning activities significantly increase the probability of a wildfire*

Construction

The use of heavy equipment along with the personnel required to construct, repair, and maintain the project features line introduce the potential for a variety of wildfire ignition sources to surrounding vegetation fuels and combustible materials (such as diesel fuel and herbicide) associated with project activities. The use of heavy equipment and the presence of personnel may increase the wildfire ignition potential in the project construction areas compared with existing conditions.

Operations and Maintenance

Maintenance activities would include the periodic use of vehicles and presence of personnel and could also include the use of heavy equipment for repairs or replacement of project components. These activities would be far less intensive than construction activities; however, they would recur periodically over the life of the project, supplying an ongoing source of ignitions for 30 years or more.

Decommissioning

Decommissioning activities are very similar to construction discussed above.

Implementation of PDFs will reduce some impacts due to the project, although the proposed project would require construction and maintenance activities that will increase the risk of fire to communities, firefighter health and safety, and natural resources. This issue is considered a significant impact for all phases of the project.

*The presence of the overhead 138 kV transmission lines, overhead 34.5 kV collector lines, and/or wind turbines reduce the effectiveness of firefighting*

Construction, Operations and Maintenance, and Decommissioning

The project transmission lines, collector lines, and turbines will not reduce fire fighting effectiveness. In addition, a MOU will be implemented between Iberdrola Renewables to integrate the following components into the existing agency fire plan. Impacts are considered less than significant.

*Would project activities contribute to an increased ignition potential and rate of fire spread through the introduction of non-native plants*

Construction, Operations and Maintenance, and Decommissioning

Iberdrola Renewables will prepare and implement the Noxious Weed and Invasive Species Control Plan for pre-construction and long-term invasive weed abatement. In addition a Habitat Restoration Plan will be developed to minimize or mitigate negative impacts on plants and wildlife. Impacts to due to non-native plants are considered less than significant with the implementation of identified plans.

## 3.7.7 Mitigation Measures

**Construction Activities**

**FF-1:** **Develop and implement a Construction and Maintenance Fire Prevention/Protection Plan.** Iberdrola Renewables shall develop a multi-agency Construction and Maintenance Fire Prevention Plan. Plan reviewers shall include: CPUC, CAL FIRE, BLM, CSLC, and the County of San Diego. Iberdrola Renewables shall provide a draft copy of this plan to each listed agency at least 90 days before the start of construction activities. Comments on the plan shall be provided by Iberdrola Renewables to all other participants, and Iberdrola Renewables shall resolve each comment in consultation with and to the satisfaction of CAL FIRE, SDRFPD and the SDCFA. The final Plan shall be submitted to CAL FIRE, SDRFPD and SDCFA at least 30 days prior to the initiation of construction activities. Iberdrola Renewables shall fully implement the plan during all construction and maintenance activities. All

construction work on the project shall follow the construction plan guidelines and commitments, and plan contents are to be incorporated into the standard construction contracting agreements for the construction of the project. Primary plan enforcement and implementation responsibility will remain with Iberdrola Renewables.

At a minimum, Plan contents will include the requirements of Title 14 of the California Code of Regulations, Article 8 #918 "Fire Protection" and the elements listed below:

1. During the construction phase of the project, Iberdrola Renewables shall implement ongoing fire patrols. Iberdrola Renewables shall maintain fire patrols during construction hours and for 1 hour after end of daily construction, and hotwork.
2. Fire Suppression Resource Inventory – In addition to CCR Title 14, 918.1(a), (b), and (c), Iberdrola Renewables shall update in writing the 24-hour contact information and onsite fire suppression equipment, tools, and personnel list on quarterly basis and provide it to the CAL FIRE, SDRFPD, SDCFA, CPUC, BLM, and to state and federal fire agencies.
3. During Red Flag Warning events, as issued daily by the National Weather Service in SRAs and Local Responsibility Areas (LRA), all non-essential, non-emergency construction and maintenance activities shall cease or be required to operate under Iberdrola Renewables' Hot Work Procedure. Utility and contractor personnel will be informed of changes to the Red Flag event status as stipulated by CAL FIRE.
4. All construction crews and inspectors shall be provided with radio and cellular telephone access that is operational along the entire length of the approved route to allow for immediate reporting of fires. Communication pathways and equipment shall be tested and confirmed operational each day prior to initiating construction activities at each construction site. The radio shall allow communications with other Iberdrola Renewables vehicles and construction trailer. All fires will be reported immediately upon detection.
5. Each member shall carry at all times a laminated card listing pertinent telephone numbers for reporting fires and defining immediate steps to take if a fire starts. Information on contact cards will be updated and redistributed to all crewmembers as needed and outdated cards destroyed, prior to the initiation of construction activities on the day the information change goes into effect.
6. Each member of the construction crew shall be trained and equipped to extinguish small fires in order to prevent them from growing into more serious threats.
7. Water storage tanks and access roads shall be installed and operational at time of start of construction.

**FF-2:** **Develop a Wildland Fire Prevention and Fire Safety Guide.** Iberdrola Renewables shall prepare and adopt a Wildland Fire Prevention Plan and Fire Safety Guide. The plan will, at a minimum, include all of the provisions of the Construction Fire Prevention Plan (as described above). The plan will be revisited and updated once every five years to incorporate new regulations, practices, technologies, and fire science research. Iberdrola Renewables shall submit the plan for review and comment by the following agencies at least 90 days prior to energizing the proposed project: CPUC, BLM, CAL FIRE, SDRFPD, SDCFA, and the CSLC. Iberdrola Renewables will submit the plan (with agency comments incorporated) for

review and approval by CAL FIRE, SDRFPD and the SDCFA at least 60 days prior to commencing construction for the proposed project.

**FF-3:** **MOU.** Ensure coordination for emergency fire suppression. Iberdrola Renewables shall ensure that personnel, construction equipment, and aerial operations do not create obstructions to firefighting equipment or crews. The following provisions shall be defined based on consultation with CAL FIRE and the SDRFPD.

a. Onsite Iberdrola Renewables and contracted personnel shall coordinate fire suppression activities through the active fire agency designated Fire Incident Commander, and emergency ingress and egress to construction-related access roads will remain unobstructed at all times. Construction and/or maintenance work shall cease in the event of a fire within 1,000 feet of the work area. The work area includes the transmission ROW, construction laydown areas, pull sites, access roads, parking pads, turbines, O&M building, and substation and any other sites adjacent to the ROW where personnel are active or where equipment is in use or stored.

**FF-4:** **Remove hazards from the work area**. Iberdrola Renewables shall comply with PRC 4291, *Reduction of Fire Hazards Around Building,* to provide 100 feet fuel modification around all buildings, and the County Code Title 9 regarding brush management. Iberdrola Renewables and/or its contractor shall clear brush and dead and decaying vegetation from the work area prior to starting construction and/or maintenance work. The work area includes only those areas where personnel are active or where equipment is in use or stored, and may include portions of the transmission ROW, construction laydown areas, pull sites, access roads, parking pads, turbine pads, O&M building, substation and any other sites adjacent to the ROW where personnel are active or where equipment is in use or stored.

**FF-5:** **Helicopter Use.** Iberdrola Renewables shall contact CAL FIRE and the SDRFPD dispatch centers two days prior to helicopter use and will provide dispatch centers with radio frequencies being used by the aircraft, aircraft identifiers, the number of helicopters that will be used while working on or near SRA lands at any given time, and the flight pattern of helicopters to be used. Should a wildfire occur within one (1) mile of the work area, upon contact from a CAL FIRE Incident Commander and/or Forest Aviation Officer, helicopters in use by Iberdrola Renewables will immediately cease construction activities and not restart aerial operations until authorized by the appropriate fire agency.

**FF-6:** **Roads.** Any BLM roads or turbine roads that are proposed to be gated shall be provided with an approved Knox Box.

**FF-7:** **Combustible Storage.** Combustible storage and trash on site during construction and operation phases shall be properly stored in a clear area with fuel modification around it, and be away from turbines and the substation. Such storage shall be orderly and be removed from the site as soon as possible.

**Electric Collector and Transmission**

**FF-8:** **Perform climbing inspections.** Iberdrola Renewables shall perform climbing inspections on 10 percent of project structures supporting overhead lines annually, such that every project structure has been climbed and inspected at the end of a 10-year period, for the life of the

project. In addition, Iberdrola Renewables will keep a detailed inspection log of climbing inspections, and any potential structural weaknesses or imminent component failures shall be acted upon immediately. The inspection log will be maintained on-site and available for review by CAL FIRE/SDRFD upon request.

**FF-9:** **Line Clearance.** For the 138 kV transmission line, Iberdrola Renewables shall establish and maintain adequate line clearance in conformance with CPUC GO 95. Only trees or vegetation with a mature height of 15 feet or less shall be permitted within the transmission right of way except where the transmission line spans a canyon. In addition, tree branches that overhang the ROW within 10 horizontal feet of any conductor shall be trimmed or removed, as appropriate, including those on steep hillsides that may be many vertical feet above the facility. Conductor clearance of 10 radial feet under maximum sag and sway will be maintained at all times. Cleared vegetation shall be removed to comply with requirements of the County of San Diego. During the life of the project, Iberdrola Renewables shall maintain adequate conductor clearances by inspecting the growth of vegetation along the entire length of the overhead transmission line at least once each spring and documenting the survey and results. The inspection log shall be maintained on-site and available for review by CAL FIRE/SDRFPD upon request.

**Wind Turbine**

**FF-10:** **Fire Suppression in the Nacelle.** Iberdrola Renewables shall provide a manufacturer or aftermarket fire suppression system in each wind turbine nacelle.

**FF-11**: **De-Energize Electrical System.** Iberdrola Renewables shall immediately de-energize the electrical collector and transmission systems during fire emergencies in which SDG&E de-energizes its local 138 kV system. Appropriate fire agencies shall be immediately notified of the line de-energizing. Additionally, Iberdrola Renewables shall provide all appropriate local, state, and federal fire dispatching agencies with an on-call contact person (Fire Coordinator) who has the authority to shut down the line in areas affected by a fire. The transmission line shall be de-energized prior to and during fire suppression activities within 1 mile of the transmission corridor to maintain firefighter safety, and re-energizing shall require notification and approval of all the responsible fire agencies.

**FF-12**: **Site Maps.** All responsible agencies shall be provided with maps indicating the location of the water tanks, turbines, access roads, and project layout and towers.

**FF-13**: **Communication Devices.** In order to easily communicate immediate fire incidence during construction, operation or maintenance of the project, all crews and inspectors shall be equipped with operational communication equipment and open communication pathways shall be established.

**FF-14**: **Noxious Weed and Invasive Species Control Plan and Habitat Restoration Plan**. Iberdrola Renewables will complete prior to construction.

## 3.7.8 CEQA Levels of Significance After Mitigation

*Would the presence of project facilities (overhead transmission lines, overhead collector lines, and/or wind turbines) significantly increase the probability of a wildfire*

Construction, Operations and Maintenance, and Decommissioning

The risk of fire danger during construction and decommissioning would be related to smoking, refueling, and operating vehicles and other equipment off roadways. An FPP will be prepared prior to construction to establish standards and practices that would minimize the risk of fire danger; and in the case of fire, provide for immediate suppression and notification. All areas used for dispensing or storage of gasoline, diesel fuel, or other oil products would be cleared of vegetation and other flammable materials. These areas would be posted with a sign identifying them as "no smoking" areas to reduce the risk of fire ignition. In addition, vegetation will be cleared in areas which will be used for welding sites.

In addition to the implementation of PDF-1 through PDF-8 will help to reduce impacts to construction activities, fire plan, and mitigation measures FF-1 through FF-14 will be implemented to further reduce the potential of wildfire associated with the construction activities of the project.

The presence of the overhead transmission line would create a potential for wildfire ignitions during the operation of the project. Due to the nature of the proposed project, the high risk of fire due to the area vegetation community, and the fire history in San Diego County, impacts due to project-related ignition are considered significant., PDF-9 through PDF-15 will reduce impacts to electric collector lines and transmission lines, PDF-16 and PDF-17 will reduce impacts due to wind turbines, and PDF-1, 2, and 18-26 will reduce impacts to the operations and maintenance of the project. Mitigation measures FF-1 to perform climbing inspections and FF-2 to maintenance adequate line clearance would reduce overhead transmission line impacts to less than significant.

Implementation of mitigation measure FF-10, to install manufacturer or after market fire suppression system in the nacelles and project design features, will reduce the potential for fire ignition within the wind turbine nacelle to a level of less than significant.

*Would the project construction and/or operation and maintenance and decommissioning activities significantly increase the probability of a wildfire*

Construction, Operations and Maintenance, and Decommissioning

As discussed in the previous significance criteria, the project design components and the proposed mitigation measures FF-1 through FF-14 would reduce the probability of a wildfire with all phases of the project to less than significant.

## 3.7.9 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 avoiding or reducing the environmental impacts of the project. The alternatives will contain all the same components and construction corridor as the proposed project except they may vary in number and location.

**No Project/No Action Alternative**

Under the No Project/No Action Alternative, the proposed project would not be implemented and the impacts associated with the project as described in Section 3.8.3 would not occur. Although there would be no impacts from fire and fuels management by the Tule Wind Project, the BLM's determination that the area is conducive to wind and renewable energy development will still be valid, thus leaving the area available for another project. Also, this alternative would still leave the San Diego County region dependent on electricity generated by fossil fuels and without a more reliable source of electricity. The BLM, State, and County would be forced to continue to search for renewable energy projects to contribute to their renewable energy mandates and portfolios. Additionally, the County of San Diego would not move closer to meeting air quality and attainment goals. Fewer impacts are identified for this alternative than those identified for the proposed project and other alternatives. Under the No Project/No Action Alternative, no development would occur and wildfire ignition potential would not increase as a result.

This alternative would have fewer impacts to the management of fire and fuels than the proposed project.

**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 G19). 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 780.3 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.

*Would the project 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*

Construction, Operations and Maintenance, and Decommissioning

This alternative would be similar to the proposed project. The same construction on all project components and fire protection system will apply, and fire fuel management will comply with county standards. A Construction Fire Prevention Plan and a Hot Work Permit Procedure will be implemented to limit hotwork during Red Flag warning alerts. Implementation to the identified PDFs, plans and design features will reduce wildland fire impacts to less than significant..

*Would the project result in inadequate emergency access*

Construction, Operations and Maintenance, and Decommissioning

As shown in **Table 3.7-3**, the portions of the alternative that occur on County lands comply with the County's travel time requirements. The O&M facility is proposed to be located on BLM land and is not subject to this requirement. The project would comply with the County's emergency and fire response requirement at the County's northernmost boundary. Impacts are considered less than significant.

*Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance service ratios, response times or other performance objectives for fire protection*

Construction, Operations and Maintenance, and Decommissioning

This alternative will be located in the same fire jurisdiction. The same response times would apply as the proposed project and would comply with the County of San Diego service ratio and response times. This alternative is not anticipated to result in a substantial adverse impact to fire service facilities, or impact service ratios, response times, or performance service ratios. Impacts are less than significant.

*Would the project have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed*

Construction, Operations and Maintenance, and Decommissioning

This alternative will have the same location for the O&M/Substation facility. Additional water tanks will be provided in strategic locations throughout the site to provide fire suppression as with the proposed project, which will be approved by the local fire authorities. Water supply impacts due to the construction, operations and maintenance, and decommissions of the project are less than significant.

*Can the project demonstrate compliance with the following fire regulations: California Fire Code, California Code of Regulations, County Fire Code, and the County Consolidated Fire Code*

Construction, Operations and Maintenance, and Decommissioning

This alterative would be consistent as the proposed project to comply with California Fire Code, California Code of Regulations, County Fire Code, and the County Consolidated Fire Code as listed in Section 3.7.3. This alternative will have a less than significant wildland fire impact.

*Will the project be consistent with the recommendations of the Fire Protection Plan, including fuel modification*

Construction, Operations and Maintenance, and Decommissioning

A Fire Protection Plan has been required for the project, which includes the project alternatives. PDFs and mitigation measures require the project to comply with fuel modification. The O&M building will have a 4-acre cleared area surrounding building and the substation facility, and the building will be placed such that a 100' fuel modification zone will give adequate spacing form transformers and potential fire sources. In addition, Iberdrola Renewables will implement a brush management plan for the O&M building and

substation facility in accordance to Title 9 of the San Diego County Code to clear brush away from structures. In addition, the project proposes up to a 200-foot cleared area around each turbine depending on the site topography at the time of construction. Fuel management within the area would be performed, annually prior to May 1 and more often as needed. Impacts are less than significant.

*Can the project meet the emergency response objectives identified in the Public Facilities Element of the County General Plan or offer Same Practical Effect*

Construction, Operations and Maintenance, and Decommissioning

The project is serviced by several fire entities; CAL FIRE; Boulevard Fire Department; Campo Volunteer Fire Department; San Diego Rural Fire Protection District; and Campo Indian reservation. As shown in **Table 3.7-3**, the portions of the project that occur on County lands comply with the County's travel time requirements. The project would comply with the County's emergency and fire response requirement at the County's northernmost boundary. This alternative would have the same impacts as the proposed project. Impacts due to emergency response objectives are less than significant.

*Would the presence of project facilities (overhead transmission lines, overhead collector lines, and/or wind turbines) significantly increase the probability of a wildfire*

Construction, Operations and Maintenance, and Decommissioning

This alternative would increase the length of the transmission line and amount of transmission line poles from 116 to 152. Implementation of a PDF-9 through PDF-17, FPP, and mitigation measures FF-1 through FF-14 would reduce potential impacts from transmission lines, and the probability of wildfire due to the construction, operation and maintenance, and decommissioning of the this alternative are less than significant.

*Would the project construction and/or operation and maintenance and decommissioning activities significantly increase the probability of a wildfire*

Construction, Operations and Maintenance, and Decommissioning

This alternative will have the same project design features to reduce impacts to the probability of wildfire. Project-related ignitions within the proposed project corridor have the potential to escape initial attack containment and become catastrophic fires. The areas with heavy fuel loads, steep topography, and exposure to Santa Ana winds would have a higher burn probability and a higher potential for an ignition to escape. Due to the existing high-fire hazard conditions in and surrounding the project area, implementation of the project components (transmission line and turbines) could increase the risk of fire. As with the proposed project, impacts associated with all phases of the project are less than significant with the implementation of the PDFs, FPP, and mitigation measures FF-1 through FF-14.

*The presence of the overhead 138 kV transmission lines, overhead 34.5 kV collector lines, and/or wind turbines reduce the effectiveness of firefighting*

Construction, Operations and Maintenance, and Decommissioning

This alternative will locate the overhead transmission lines west of McCain Valley Road, adjacent to the turbines. As with the proposed project the turbine distances, and transmission lines will have the same

spacing, and will have the same FAA safety lighting. Impacts due to overhead transmission lines, overhead collector lines, and/or wind turbines would not reduce firefighting effectiveness. Impacts are less than significant.

*Would the project activities contribute to an increased ignition potential and rate of fire spread through the introduction of non-native plants*

Construction, Operations and Maintenance, and Decommissioning

This alternative will implement a Noxious Weed and Invasive Species Control Plan and a Habitat Restoration Plan as with the proposed project. Based on implementation of the Noxious Weed and Invasive Species Control Plan and Habitat Restoration Plan, a less than significant impact associated with the potential for ignitability of fuels through the introduction of non-native plants during construction, maintenance and operations, and decommissioning.

Impacts from the Alternate Transmission Line #1 Alternative would be comparable to the proposed project, and would not have significantly greater impacts; however, the transmission line would be longer than the proposed project. This alternative has the same level of impact 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.

*Would the project 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*

This alternative would be less transmission line and poles but an increase amount of overhead collector line. The same construction on all project components and fire protection system will apply, and fire fuel management will comply with county standards. A Construction Fire Prevention Plan and a Hot Work Permit Procedure will be implemented to limit hotwork during Red Flag warning alerts. Implementation to the identified PDFs and FPP mitigation measures will reduce wildland fire impacts to less than significant.

*Would the project result in inadequate emergency access*

Construction, Operations and Maintenance, and Decommissioning

Roadway construction for this alternative will be similar to the proposed project. As shown in **Table 3.7-3**, the portions of the alternative that occur on County lands comply with the County's travel time requirements. The O&M facility is proposed to be located on BLM land and is not subject to this requirement. The project would comply with the County's emergency and fire response requirement at the County's northernmost boundary. Impacts are considered less than significant.

*Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance service ratios, response times or other performance objectives for fire protection*

Construction, Operations and Maintenance, and Decommissioning

This alternative will be located in the same fire jurisdiction. The same response times would apply as the proposed project and would comply with the County of San Diego service ratio and response times. This alternative is not anticipated to result in a substantial adverse impact to fire service facilities, or impact service ratios, response times, or performance service ratios. Impacts are less than significant.

*Would the project have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed*

Construction, Operations and Maintenance, and Decommissioning

This alternative locates the O&M/Substation facility on RAR. Additional water tanks will be provided in strategic locations throughout the site to provide fire suppression as with the proposed project, which will be approved by the local fire authorities. Water supply impacts due to the construction, operations and maintenance, and decommissions of the project are less than significant.

*Can the project demonstrate compliance with the following fire regulations: California Fire Code, California Code of Regulations, County Fire Code, and the County Consolidated Fire Code*

Construction, Operations and Maintenance, and Decommissioning

This alterative would be consistent as the proposed project to comply with California Fire Code, California Code of Regulations, County Fire Code, and the County Consolidated Fire Code as listed in Section 3.7.3. This alternative will have a less than significant wildland fire impact.

*Will the project be consistent with the recommendations of the Fire Protection Plan, including fuel modification*

Construction, Operations and Maintenance, and Decommissioning

A Fire Protection Plan has been required for the project, which includes the project alternatives. PDFs and mitigation measures require the project to comply with fuel modification. The O&M building will have a 4-acre cleared area surrounding building and the substation facility, and the building will be placed such that a 100-foot fuel modification zone will give adequate spacing form transformers and potential fire

sources. In addition, Iberdrola Renewables will implement a brush management plan for the O&M building and substation facility in accordance to Title 9 of the San Diego County Code to clear brush away from structures. In addition, the project proposes up to a 200-foot cleared area around each turbine depending on the site topography at the time of construction. Fuel management within the area would be performed, annually prior to May 1 and more often as needed. Impacts are less than significant.

*Can the project meet the emergency response objectives identified in the Public Facilities Element of the County General Plan or offer Same Practical Effect*

Construction, Operations and Maintenance, and Decommissioning

This alternative the O&M/Substation facility would be located on RAR and would be closer to the area fire stations. The project is serviced by several fire entities; CAL FIRE; Boulevard Fire Department; Campo Volunteer Fire Department; San Diego Rural Fire Protection District; and Campo Indian reservation. As shown in **Table 3.7-3**, the portions of the project that occur on County lands comply with the County's travel time requirements. The project would comply with the County's emergency and fire response requirement at the County's northernmost boundary. This alternative would have the same impacts as the proposed project. Impacts due to emergency response objectives are less than significant.

*Would the presence of project facilities (overhead transmission lines, overhead collector lines, and/or wind turbines) significantly increase the probability of a wildfire*

Construction, Operations and Maintenance, and Decommissioning

This alternative would increase the length of the transmission line and amount of transmission line poles from 116 to 42. Implementation of a PDF-9 through PDF-17, FPP and mitigation measures FF-1 through FF-14 would reduce potential impacts from transmission lines, and the probability of wildfire due to the construction, operation and maintenance, and decommissioning of the this alternative are less than significant.

*Would the project construction and/or operation and maintenance and decommissioning activities significantly increase the probability of a wildfire*

Construction, Operations and Maintenance, and Decommissioning

This alternative would move the O&M/Substation facility to Rough Acres Ranch, which is closer to the proposed Boulevard Rebuilt Substation. This alternative would reduce the number of transmission line poles from 116 to 44. This alternative will have the same project design features to reduce impacts to the probability of wildfire. Project-related ignitions within the proposed project corridor have the potential to escape initial attack containment and become catastrophic fires. The areas with heavy fuel loads, steep topography, and exposure to Santa Ana winds would have a higher burn probability and a higher potential for an ignition to escape. Due to the existing high-fire hazard conditions in and surrounding the project area, implementation of the project components (transmission line and turbines) could increase the risk of fire. As with the proposed project, impacts associated with all phases of the project are less than significant with the implementation of the PDFs, FPP, and mitigation measures FF-1 through FF-14.

*The presence of the overhead 138 kV transmission lines, overhead 34.5 kV collector lines, and/or wind turbines reduce the effectiveness of firefighting*

Construction, Operations and Maintenance, and Decommissioning

This alternative would have a reduced distance of 138 kV transmission line and transmission line poles, but would increase the 35.4 kV overhead collector line distance. As with the proposed project the turbine distances, and transmission lines will have the same spacing, and will have the same FAA safety lighting. Impacts due to overhead transmission lines, overhead collector lines, and/or wind turbines would not reduce firefighting effectiveness. Impacts are less than significant.

*Would the project activities contribute to an increased ignition potential and rate of fire spread through the introduction of non-native plants*

Construction, Operations and Maintenance, and Decommissioning

This alternative will implement a Noxious Weed and Invasive Species Control Plan and a Habitat Restoration Plan as with the proposed project. Based on implementation of the Noxious Weed and Invasive Species Control Plan and Habitat Restoration Plan, a less than significant impact associated with the potential for ignitability of fuels through the introduction of non-native plants during construction, maintenance and operations, and decommissioning.

Impacts from the Alternate Transmission Line #2 Alternative would be comparable to the proposed project, and would not have significantly grater impacts; however, the distances of 138 kV transmission lines will decrease and the 34.5 kV overhead lines will have increased, although this would not change the potential fire hazards.

Impacts from the Alternate Transmission Line #1 Alternative would be comparable to the proposed project, and would not have significantly greater impacts; however, the transmission line would be longer than the proposed project. This alternative has the same level of impact 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.

*Would the project 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*

Construction, Operations and Maintenance, and Decommissioning

This alternative would be similar to the proposed project. The same construction on all project components and fire protection system will apply, and fire fuel management will comply with county standards. A Construction Fire Prevention Plan and a Hot Work Permit Procedure will be implemented to limit hotwork during Red Flag warning alerts. Implementation to the identified PDFs, plans and design features will reduce wildland fire impacts to less than significant..

*Would the project result in inadequate emergency access*

As shown in **Table 3.7-3**, the portions of the alternative that occur on County lands comply with the County's travel time requirements. The O&M facility is proposed to be located on BLM land and is not subject to this requirement. The project would comply with the County's emergency and fire response requirement at the County's northernmost boundary. Impacts are considered less than significant.

*Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance service ratios, response times or other performance objectives for fire protection*

Construction, Operations and Maintenance, and Decommissioning

This alternative will be located in the same fire jurisdiction. The same response times would apply as the proposed project and would comply with the County of San Diego service ratio and response times. This alternative is not anticipated to result in a substantial adverse impact to fire service facilities, or impact service ratios, response times, or performance service ratios. Impacts are less than significant.

*Would the project have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed*

Construction, Operations and Maintenance, and Decommissioning

This alternative will have the same location for the O&M/Substation facility. Additional water tanks will be provided in strategic locations throughout the site to provide fire suppression as with the proposed project, which will be approved by the local fire authorities. Water supply impacts due to the construction, operations and maintenance, and decommissions of the project are less than significant.

*Can the project demonstrate compliance with the following fire regulations: California Fire Code, California Code of Regulations, County Fire Code, and the County Consolidated Fire Code*

Construction, Operations and Maintenance, and Decommissioning

This alterative would be consistent as the proposed project to comply with California Fire Code, California Code of Regulations, County Fire Code, and the County Consolidated Fire Code as listed in Section 3.7.3. This alternative will have a less than significant wildland fire impact.

*Will the project be consistent with the recommendations of the Fire Protection Plan, including fuel modification*

Construction, Operations and Maintenance, and Decommissioning

A Fire Protection Plan has been required for the project, which includes the project alternatives. PDFs and mitigation measures require the project to comply with fuel modification. The O&M building will have a 4-acre cleared area surrounding building and the substation facility, and the building will be placed such that a 100' fuel modification zone will give adequate spacing form transformers and potential fire sources. In addition, Iberdrola Renewables will implement a brush management plan for the O&M building and substation facility in accordance to Title 9 of the San Diego County Code to clear brush away from structures. In addition, the project proposes up to a 200-foot cleared area around each turbine depending on the site topography at the time of construction. Fuel management within the area would be performed, annually prior to May 1 and more often as needed. Impacts are less than significant.

*Can the project meet the emergency response objectives identified in the Public Facilities Element of the County General Plan or offer Same Practical Effect*

Construction, Operations and Maintenance, and Decommissioning

This alternative the O&M/Substation would be located on RAR and would be nearer to the identified fire service facilities. The project is serviced by several fire entities; CAL FIRE; Boulevard Fire Department; Campo Volunteer Fire Department; San Diego Rural Fire Protection District; and Campo Indian reservation. As shown in **Table 3.7-3**, the portions of the project that occur on County lands comply with the County's travel time requirements. The project would comply with the County's emergency and fire response requirement at the County's northernmost boundary. This alternative would have the same impacts as the proposed project. Impacts due to emergency response objectives are less than significant.

*Would the presence of project facilities (overhead transmission lines, overhead collector lines, and/or wind turbines) significantly increase the probability of a wildfire*

Construction, Operations and Maintenance, and Decommissioning

This alternative would increase the length of the transmission line and amount of transmission line poles from 116 to 42. Implementation of a PDF-9 through PDF-17, FPP, and mitigation measures FF-1 through FF-14 would reduce potential impacts from transmission lines, and the probability of wildfire due to the construction, operation and maintenance, and decommissioning of the this alternative are less than significant.

*Would the project construction and/or operation and maintenance and decommissioning activities significantly increase the probability of a wildfire*

Construction, Operations and Maintenance, and Decommissioning

This alternative would move the O&M/Substation facility to Rough Acres Ranch, which is closer to the proposed Boulevard Rebuilt Substation. This alternative would reduce the number of transmission line poles from 116 to 60. This alternative will have the same project design features to reduce impacts to the probability of wildfire. The areas with heavy fuel loads, steep topography, and exposure to Santa Ana winds would have a higher burn probability and a higher potential for an ignition to escape. Due to the existing high-fire hazard conditions in and surrounding the project area, implementation of the project

components (transmission line and turbines) could increase the risk of fire. As with the proposed project, impacts associated with all phases of the project are less than significant with the implementation of the PDF, FPP, and mitigation measures FF-1 through FF-14.

*The presence of the overhead 138 kV transmission lines, overhead 34.5 kV collector lines, and/or wind turbines reduce the effectiveness of firefighting*

Construction, Operations and Maintenance, and Decommissioning

This alternative will reduce the amount of 138 kV transmission line and increase the amount of 34.5 kV overhead transmission line. The 138 kV transmission lines would be located from RAR via Ribbonwood Road to the Rebuilt Substation. As with the proposed project the turbine distances, and transmission lines will have the same spacing, and will have the same FAA safety lighting. Impacts due to overhead transmission lines, overhead collector lines, and/or wind turbines would not reduce firefighting effectiveness. Impacts are less than significant.

*Would the project activities contribute to an increased ignition potential and rate of fire spread through the introduction of non-native plants*

Construction, Operations and Maintenance, and Decommissioning

This alternative will implement a Noxious Weed and Invasive Species Control Plan and a Habitat Restoration Plan as with the proposed project. Based on implementation of the Noxious Weed and Invasive Species Control Plan and Habitat Restoration Plan, a less than significant impact associated with the potential for ignitability of fuels through the introduction of non-native plants during construction, maintenance and operations, and decommissioning.

Impacts from the Alternate Transmission Line #3 Alternative would be comparable to the proposed project, and would not have significantly grater impacts; however, the distances of 138 kV transmission lines will decrease and the 34.5 kV overhead lines will have increased, although this would not change the potential fire hazards.

**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, roadway upgrades, 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 0.07 acres of permanently impacted area and a temporary impact of .55 acres. In comparison to the proposed project, this alternative would decrease the land disturbance by approximately 2.5acres; 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.

*Would the project 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*

This alternative would be similar to the proposed project. The same construction on all project components and fire protection system will apply, and fire fuel management will comply with county standards. A Construction Fire Prevention Plan and a Hot Work Permit Procedure will be implemented to limit hotwork during Red Flag warning alerts. Implementation to the identified PDFs, plans and design features will reduce wildland fire impacts to less than significant..

*Would the project result in inadequate emergency access*

As shown in **Table 3.7-3**, the portions of the alternative that occur on County lands comply with the County's travel time requirements. The O&M facility would be located closer to the nearest fire service facility. The project would comply with the County's emergency and fire response requirement at the County's northernmost boundary. Impacts are considered less than significant.

*Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance service ratios, response times or other performance objectives for fire protection*

Construction, Operations and Maintenance, and Decommissioning

The O&M/Substation would be located nearer to the identified fire service facilities. This alternative will be located in the same fire jurisdiction. The same response times would apply as the proposed project and would comply with the County of San Diego service ratio and response times. This alternative is not anticipated to result in a substantial adverse impact to fire service facilities, or impact service ratios, response times, or performance service ratios. Impacts are less than significant.

*Would the project have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed*

Construction, Operations and Maintenance, and Decommissioning

This alternative will locate the O&M/Substation facility on RAR. Additional water tanks will be provided in strategic locations throughout the site to provide fire suppression as with the proposed project, which will be approved by the local fire authorities. Water supply impacts due to the construction, operations and maintenance, and decommissions of the project are less than significant.

*Can the project demonstrate compliance with the following fire regulations: California Fire Code, California Code of Regulations, County Fire Code, and the County Consolidated Fire Code*

Construction, Operations and Maintenance, and Decommissioning

This alterative would be consistent as the proposed project to comply with California Fire Code, California Code of Regulations, County Fire Code, and the County Consolidated Fire Code as listed in Section 3.7.3. This alternative will have a less than significant wildland fire impact.

*Will the project be consistent with the recommendations of the Fire Protection Plan, including fuel modification*

Construction, Operations and Maintenance, and Decommissioning

A Fire Protection Plan has been required for the project, which includes the project alternatives. PDFs and mitigation measures require the project to comply with fuel modification. The O&M building will have a 4-acre cleared area surrounding building and the substation facility, and the building will be placed such that a 100' fuel modification zone will give adequate spacing form transformers and potential fire sources. In addition, Iberdrola Renewables will implement a brush management plan for the O&M building and substation facility in accordance to Title 9 of the San Diego County Code to clear brush away from structures. In addition, the project proposes up to a 200-foot cleared area around each turbine depending on the site topography at the time of construction. Fuel management within the area would be performed, annually prior to May 1 and more often as needed. Impacts are less than significant.

*Can the project meet the emergency response objectives identified in the Public Facilities Element of the County General Plan or offer Same Practical Effect*

Construction, Operations and Maintenance, and Decommissioning

The O&M building would be located closer off of McCain Valley Road and the substation would be located on RAR. This would decrease the amount of travel time for the identified fire service providers. The project is serviced by several fire entities; CAL FIRE; Boulevard Fire Department; Campo Volunteer Fire Department; San Diego Rural Fire Protection District; and Campo Indian reservation. As shown in **Table 3.7-3**, the portions of the project that occur on County lands comply with the County's travel time requirements. The project would comply with the County's emergency and fire response requirement at the County's northernmost boundary. This alternative would have the same impacts as the proposed project. Impacts due to emergency response objectives are less than significant.

*Would the presence of project facilities (overhead transmission lines, overhead collector lines, and/or wind turbines) significantly increase the probability of a wildfire*

Construction, Operations and Maintenance, and Decommissioning

This alternative would increase the length of the transmission line and amount of transmission line poles from 116 to 42. Implementation of a PDF-9 through PDF-17, FPP and mitigation measures FF-1 through FF-14 would reduce potential impacts from transmission lines, and the probability of wildfire due to the construction, operation and maintenance, and decommissioning of the this alternative are less than significant.

*Would the project construction and/or operation and maintenance and decommissioning activities significantly increase the probability of a wildfire*

Construction, Operations and Maintenance, and Decommissioning

This alternative would move the substation facility to Rough Acres Ranch, which is closer to the proposed Boulevard Rebuilt Substation. This alternative would reduce the number of transmission line poles from 116 to 44. The areas with heavy fuel loads, steep topography, and exposure to Santa Ana winds would have a higher burn probability and a higher potential for an ignition to escape. Due to the existing high-fire hazard conditions in and surrounding the project area, implementation of the project components (transmission line and turbines) could increase the risk of fire. As with the proposed project, impacts associated with all phases of the project are less than significant with the implementation of the FPP and mitigation measures FF-1 through FF-14.

*The presence of the overhead 138 kV transmission lines, overhead 34.5 kV collector lines, and/or wind turbines reduce the effectiveness of firefighting*

Construction, Operations and Maintenance, and Decommissioning

This alternative will have a shorter distance of 138 kV transmission line to connect to the rebuilt substation and locate the overhead transmission lines along McCain Valley Road from RAR. As with the proposed project the turbine distances, and transmission lines will have the same spacing, and will have the same FAA safety lighting. Impacts due to overhead transmission lines, overhead collector lines, and/or wind turbines would not reduce firefighting effectiveness. Impacts are less than significant.

As with the proposed project the turbine distances, and transmission lines will have the same spacing, and will have the same FAA safety lighting. Impacts due to overhead transmission lines, overhead collector lines, and/or wind turbines would not reduce firefighting effectiveness. Impacts are less than significant.

*Would the project activities contribute to an increased ignition potential and rate of fire spread through the introduction of non-native plants*

Construction, Operations and Maintenance, and Decommissioning

This alternative will implement a Noxious Weed and Invasive Species Control Plan and a Habitat Restoration Plan as with the proposed project. Based on implementation of the Noxious Weed and Invasive Species Control Plan and Habitat Restoration Plan, a less than significant impact associated with the potential for ignitability of fuels through the introduction of non-native plants during construction, maintenance and operations, and decommissioning.

This alternative has less transmission line poles and 138 kV lines, which would have a decreased level of impact as the proposed project.

Impacts from the Operations and Maintenance Facility Location #1 Location would be comparable to the proposed project, and would not have significantly grater impacts; however, the distances of 138 kV transmission lines will decrease and the 34.5 kV overhead lines will have increased, although this would not change the potential fire hazards.

**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, roadway upgrades, 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 (1.0 acres 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.

*Would the project 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*

Construction, Operations and Maintenance, and Decommissioning

This alternative would be similar to the proposed project. The same construction on all project components and fire protection system will apply, and fire fuel management will comply with county standards. A Construction Fire Prevention Plan and a Hot Work Permit Procedure will be implemented to limit hotwork during Red Flag warning alerts. Implementation to the identified PDFs, plans and design features will reduce wildland fire impacts to less than significant. .

*Would the project result in inadequate emergency access*

Construction, Operations and Maintenance, and Decommissioning

As shown in **Table 3.7-3**, the portions of the alternative that occur on County lands comply with the County's travel time requirements. The O&M facility is proposed to be located on BLM land and is not subject to this requirement. The project would comply with the County's emergency and fire response requirement at the County's northernmost boundary. Impacts are considered less than significant.

*Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance service ratios, response times or other performance objectives for fire protection*

Construction, Operations and Maintenance, and Decommissioning

This alternative will be located in the same fire jurisdiction. The same response times would apply as the proposed project and would comply with the County of San Diego service ratio and response times. This

alternative is not anticipated to result in a substantial adverse impact to fire service facilities, or impact service ratios, response times, or performance service ratios. Impacts are less than significant.

*Would the project have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed*

Construction, Operations and Maintenance, and Decommissioning

This alternative will be located the O&M/Substation facility on RAR. Additional water tanks will be provided in strategic locations throughout the site to provide fire suppression as with the proposed project, which will be approved by the local fire authorities. Water supply impacts due to the construction, operations and maintenance, and decommissions of the project are less than significant.

*Can the project demonstrate compliance with the following fire regulations: California Fire Code, California Code of Regulations, County Fire Code, and the County Consolidated Fire Code*

Construction, Operations and Maintenance, and Decommissioning

This alterative would be consistent as the proposed project to comply with California Fire Code, California Code of Regulations, County Fire Code, and the County Consolidated Fire Code as listed in Section 3.7.3. This alternative will have a less than significant wildland fire impact.

*Will the project be consistent with the recommendations of the Fire Protection Plan, including fuel modification*

Construction, Operations and Maintenance, and Decommissioning

A Fire Protection Plan has been required for the project, which includes the project alternatives. PDFs and mitigation measures require the project to comply with fuel modification. The O&M building will have a 4-acre cleared area surrounding building and the substation facility, and the building will be placed such that a 100' fuel modification zone will give adequate spacing form transformers and potential fire sources. In addition, Iberdrola Renewables will implement a brush management plan for the O&M building and substation facility in accordance to Title 9 of the San Diego County Code to clear brush away from structures. In addition, the project proposes up to a 200-foot cleared area around each turbine depending on the site topography at the time of construction. Fuel management within the area would be performed, annually prior to May 1 and more often as needed. Impacts are less than significant.

*Can the project meet the emergency response objectives identified in the Public Facilities Element of the County General Plan or offer Same Practical Effect*

Construction, Operations and Maintenance, and Decommissioning

The O&M and Substation buildings would be located RAR and would be nearer to the identified fire service facilities. The project is serviced by several fire entities; CAL FIRE; Boulevard Fire Department; Campo Volunteer Fire Department; San Diego Rural Fire Protection District; and Campo Indian reservation. As shown in **Table 3.7-3**, the portions of the project that occur on County lands comply with the County's travel time requirements. The project would comply with the County's emergency and fire response requirement at the County's northernmost boundary. This alternative would have the same impacts as the proposed project. Impacts due to emergency response objectives are less than significant.

*Would the presence of project facilities (overhead transmission lines, overhead collector lines, and/or wind turbines) significantly increase the probability of a wildfire*

Construction, Operations and Maintenance, and Decommissioning

This alternative would increase the length of the transmission line and amount of transmission line poles from 116 to 42. Implementation of a PDF-9 through PDF-17, FPP and mitigation measures FF-1 through FF-14 would reduce potential impacts from transmission lines, and the probability of wildfire due to the construction, operation and maintenance, and decommissioning of the this alternative are less than significant.

*Would the project construction and/or operation and maintenance and decommissioning activities significantly increase the probability of a wildfire*

Construction, Operations and Maintenance, and Decommissioning

This alternative would move the substation to Rough Acres Ranch, which is closer to the proposed Boulevard Rebuilt Substation. This alternative would reduce the number of transmission line poles from 116 to 44. This alternative will have the same project design features to reduce impacts to the probability of wildfire. Project-related ignitions within the proposed project corridor have the potential to escape initial attack containment and become catastrophic fires. The areas with heavy fuel loads, steep topography, and exposure to Santa Ana winds would have a higher burn probability and a higher potential for an ignition to escape. Due to the existing high-fire hazard conditions in and surrounding the project area, implementation of the project components (transmission line and turbines) could increase the risk of fire. As with the proposed project, impacts associated with all phases of the project are less than significant with the implementation of the FPP and mitigation measures FF-1 through FF-14.

*The presence of the overhead 138 kV transmission lines, overhead 34.5 kV collector lines, and/or wind turbines reduce the effectiveness of firefighting*

Construction, Operations and Maintenance, and Decommissioning

As with the proposed project the turbine distances, and transmission lines will have the same spacing, and will have the same FAA safety lighting. This alternative will have a shorter distance of 138 kV transmission line to connect to the rebuilt substation and locate the overhead transmission lines along McCain Valley Road from RAR. As with the proposed project the turbine distances, and transmission lines will have the same spacing, and will have the same FAA safety lighting. Impacts due to overhead transmission lines, overhead collector lines, and/or wind turbines would not reduce firefighting effectiveness. Impacts are less than significant.

*Would the project activities contribute to an increased ignition potential and rate of fire spread through the introduction of non-native plants*

Construction, Operations and Maintenance, and Decommissioning

This alternative will implement a Noxious Weed and Invasive Species Control Plan and a Habitat Restoration Plan as with the proposed project. Based on implementation of the Noxious Weed and Invasive Species Control Plan and Habitat Restoration Plan, a less than significant impact associated with

the potential for ignitability of fuels through the introduction of non-native plants during construction, maintenance and operations, and decommissioning.

Impacts from the Operations and Maintenance Facility Location #2 Location would be comparable to the proposed project, and would not have significantly grater impacts; however, the distances of 138 kV transmission lines will decrease and the 34.5 kV overhead lines will have increased, although this would not change the potential fire hazards.

**This page intentionally left blank.**