3.7 HAZARDS AND HAZARDOUS MATERIALS

This section describes the regulatory and environmental setting for hazards and hazardous materials. It also describes potential impacts regarding hazards and hazardous materials that would result from implementation of the proposed project and mitigation for significant impacts where feasible and appropriate.

3.7.1 Existing Conditions

3.7.1.1 Regulatory Settings

State

California hazardous materials and wastes regulations are equal to or more stringent than federal regulations. EPA has granted the state primary oversight responsibility to administer and enforce hazardous waste management programs. State regulations require planning and management to ensure that hazardous materials are handled, stored, and disposed of properly to reduce risks to human health and the environment. Several key state laws pertaining to hazardous materials and wastes are discussed below.

Worker Safety

Occupational safety standards exist in federal and state laws to minimize worker safety risks from both physical and chemical hazards in the workplace. The California Division of Occupational Safety and Health (Cal/OSHA) and the federal Occupational Safety and Health Administration (OSHA) are the agencies responsible for assuring worker safety in the workplace.

Cal/OSHA assumes primary responsibility for developing and enforcing standards for safe workplaces and work practices within the state. At sites known to be contaminated, a site safety plan must be prepared to protect workers. The site safety plan establishes policies and procedures to protect workers and the public from exposure to potential hazards at the contaminated site.

Department of Toxic Substance Control

The Department of Toxic Substance Control (DTSC) regulates the generation, transportation, treatment, storage, and disposal of hazardous material waste. The hazardous waste regulations establish criteria for identifying, packaging, and labeling hazardous wastes; dictate the management of hazardous waste; establish permit requirements for hazardous waste treatment, storage, disposal, and transportation; and identify hazardous wastes that cannot be disposed of in landfills. These regulations also require hazardous materials users to prepare written plans, such as a hazardous materials business plan, that describe hazardous materials inventory information, storage and secondary containment facilities, emergency response and evacuation procedures, and employee hazardous materials training programs. A number of agencies participate in enforcing hazardous materials management requirements, including DTSC, the Regional Water Board, the Los Angeles County Department of Public Works, LACFD, and City of Lancaster.
Fire Protection

California state fire safety regulations apply to State Responsibility Areas (SRAs) during the time of year designated as having hazardous fire conditions. During the fire hazard season, these regulations: (a) restrict the use of equipment that may produce a spark, flame, or fire; (b) require the use of spark arrestors on equipment that has an internal combustion engine; (c) specify requirements for the safe use of gasoline-powered tools in fire hazard areas; and (d) specify fire suppression equipment that must be provided onsite for various types of work in fire-prone areas. The California Department of Forestry and Fire Protection (CAL FIRE) has primary responsibility for fire protection within SRAs.

Local

Los Angeles County Certified Unified Program

The accidental release of any harmful material is a potentially serious incident. In an effort to minimize the occurrence of such hazards, the State of California passed a law requiring each county in California to develop a method to deal with the management of hazardous waste. In response, Los Angeles County sought to develop plans and policies regarding hazardous waste. On November 30, 1989, the California Department of Health Services approved the Hazardous Waste Management Plan for the County of Los Angeles. The purpose of the plan was to provide a more effective framework for managing the County’s hazardous waste, consistent with State law and requirements of the State Department of Health Services.

Since then, the County has consolidated its plans and programs related to hazardous waste and materials management into one Certified Unified Program. LACFD is the Certified Unified Program Agency (CUPA) for nearly the entire unincorporated and incorporated County. The CUPA programs consist of six hazardous materials and hazardous waste programs designed to consolidate, coordinate, and consistently administer permits, inspection activities, and enforcement activities throughout the County of Los Angeles.

Specifically, the Hazardous Materials Management Program (within the CUPA programs) ensures compliance with statutory provisions and regulations relating to hazardous materials inventories and emergency plans, which address emergency responses to hazardous materials releases or threatened releases and to avoidance of accidents involving certain hazardous materials.

The CUPA is responsible for hazardous spills of substances such as heavy metals, pesticides, and herbicides. CUPA is also responsible for regulatory oversight of investigations and cleanups at sites affected by substances other than petroleum products from underground storage tanks.

City of Lancaster Hazardous Waste Management Plan

The City of Lancaster prepared a Hazardous Waste Management Plan (HWMP) (February 1, 2001) for operations that generate hazardous waste, or potentially hazardous waste, for the City. Procedures and policies outlined in the plan are designed to meet the needs of the generating activities and to facilitate compliance with all applicable Federal, State, and local laws.
governing hazardous waste management. The primary objective of the HWMP is to
describe the process for identification, handling, tracking, collection, accumulation, and
recycling/treatment/disposal of hazardous waste generated at the City of Lancaster’s
Maintenance Yard.

Los Angeles County Fire and Hazards Code

LACFD currently reviews development plans for compliance with the Los Angeles County Fire
Code. The City of Lancaster currently contracts with the LACFD for fire and paramedic services.
There are currently six fire stations within the City of Lancaster. In accordance with the California
Fire Code Section 507 developers are required to provide approved water supplies capable of
delivering adequate flow for fire protection to all premises upon which improvements are
constructed. Water supply may consist of reservoirs, pressure tanks, elevated tanks, water mains
or other fixed systems capable of supplying the required flow. In setting the requirements for
flow, the Los Angeles County Fire Chief may be guided by the standards published by the
Insurance Services Office, Guide for Determination of Required Fire Flow. City of Lancaster
Health and Safety Code Title 8, Section 4, identifies that the City of Lancaster adopted the
County of Los Angeles County Code Ordinance No. 5307 related to General Hazards.
Additionally, the Los Angeles County Fire Code Ordinance requires an annual operational
permit to be on file for Hazardous Material storage and use.

City of Lancaster General Plan 2030

The Plan for Public Health and Safety of the City of Lancaster General Plan 2030 includes specific
goals, objectives, policies, and specific actions to maintain health and safety. Those that are
applicable to the proposed project are listed below.

Goal 4: To provide a secure manmade environment which offers a high level of protection from
natural and manmade hazards to life, health, and property.

Objective 4.5: Protect life and property from the potential detrimental effects (short and long
term) of the creation, transportation, storage, treatment, and disposal of hazardous materials
and wastes within the City of Lancaster.

Policy 4.5.1: Ensure that activities within the City of Lancaster transport, use, store, and dispose of
hazardous materials in a responsible manner which protects the public health and safety.

Specific Actions 4.5.1(a): Implement the goals and policies of the Los Angeles County Certified
Unified Program Agency; Health Hazardous Materials Division by:

- Ensuring the availability of safe and legal options for the management of hazardous
  waste generated within the City.
3.7.2 Environmental Setting

This section describes the existing hazards and/or hazardous conditions within the project area and evaluates the potential for impacts relating to hazards and hazardous materials with implementation of the proposed project. Information used for the records review, historical use of the property, and site reconnaissance discussions was summarized from the Phase I Environmental Site Assessment, Lancaster Energy Center, Lancaster, California (Appendix F).

Records Review

A database search, compiled pursuant to Government Code Section 65962.5, was conducted for the project site by Environmental Data Resources, Inc. (EDR) as part of the Phase I Environmental Assessment (Appendix F). This database search included all available federal, state, regional, and local agency database listings. A complete list of the databases searched is located in Appendix F.

The information listed within the databases was evaluated relative to potential impact to the project site, assessing the potential for impacts based in part on the physical setting. As part of this process, inferences have been made regarding the likely groundwater flow direction at or near the project site (inferred groundwater flow direction is likely to be north-northeast).

Surrounding sites were evaluated for the potential of releases to impact the project site in accordance with the definition of a recognized environmental condition (REC). The American Society for Testing and Materials (ASTM) E1527-13 standard indicates that the purpose of the Phase I Environmental Site Assessment is to identify RECs, including historical recognized environmental conditions (HRECs), and controlled recognized environmental conditions (CRECs) that may exist at a property. The term “recognized environmental conditions” means the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property:

1. Due to any release to the environment;
2. Under conditions indicative of a release to the environment; or
3. Under conditions that pose a material threat of a future release to the environment.

De minimis conditions are not RECs. The term includes hazardous substances or petroleum products even under conditions in compliance with laws. As indicated, the term REC does not include de minimis conditions, which generally do not present a material risk to human health and would not likely be subject to enforcement action if brought to the attention of governmental agencies.

The Phase I Environmental Site Assessment indicated that there is no significant risk of environmental contamination expected at the project site, nor is there any need for environmental cleanup of existing conditions. The project site is not listed on the hazardous materials databases searched for the report.
The information in the environmental agency database search report was evaluated to determine the potential of nearby sites to impact the project site and evaluate the potential for conditions to pose a REC, CREC, or HREC for the project site. Generally, reported release sites located within ¼ mile of the project site are considered to have the potential to impact the project site. Facilities which are listed in the database search report but not identified as a release site, such as a hazardous waste generator, are not considered to have a potential to represent an environmental concern relative to the project site. Based on this evaluation, five individual facilities were identified as the most likely potential sources of impact to the project site, as reported by EDR; however, no RECs were identified due to de minimis conditions, “No Further Action” status, or distance from the project site.

**Historical Use of the Property**

Aerial photographs dated 1948 through 2002 were searched as part of the EDR investigation. The project area has primarily been vacant undeveloped land with some unpaved roads, trails, and a few paved roads. Historical aerial photographs show that the project site was possibly used for agricultural purposes as early as the 1940s. However, no evidence of use, overuse or spillage of agricultural chemicals was observed on the project site during the site reconnaissance and no evidence was found of pesticide mixing equipment or pesticides applied in a manner inconsistent with labeling or of releases on the project site. The California Aqueduct appears south of the project site in the 1974 aerial photograph. The project site appears to be vacant (no agriculture present) in the 1989, 1994, and 2002 aerial photographs.

**Site Reconnaissance**

A visual reconnaissance was conducted on September 5, 2014. The site visit was conducted in conformance with ASTM E1527-13 and ASTM E2247-08. ASTM E2247-08 defines the practice for conducting a Phase I ESA on a property 120-acres or greater of forestland (ASTM 2247-08 Section 3.2.37) or rural property (ASTM E2247-08 Section 3.2.86). The site reconnaissance focused on observation of current conditions and observable indications of past uses and conditions that may indicate the presence of a REC. Due to the size of the project site, site reconnaissance was conducted on vehicle and foot. The ASTM E1527-13 standard was applied for the general layout of the Phase I ESA report but due to the project site size (greater than 120 acres), ASTM E2247-08 standard was also utilized. The following methodology was utilized to observe the project site:

- Traverse the outer project site boundary.
- Traverse transects across the project site.
- Traverse the periphery of all structures on the project site.
- Visually observe accessible interior areas expected to be used by occupants or the public, maintenance and repair areas, utility areas, and a representative sample of occupied spaces.

Weather conditions during the visit to the project site were clear and sunny. There were no weather related property access restrictions encountered during the reconnaissance visit.
Photographs collected during the site visit are presented in the Phase I Environmental Site Assessment, which is contained in Appendix F.

The following observations were made during the site reconnaissance of the project site, as presented below in Table 3.7-1. The term “property” in the table is defined as all parcels associated with the proposed project.

**Table 3.7-1: Site Reconnaissance Observations**

<table>
<thead>
<tr>
<th>Property and Area Description:</th>
<th>The Property and surrounding area consists of vacant undeveloped land with a few residential properties to the north. The Property is bisected by Southern California Edison (SCE) power lines. The California Aqueduct abuts the southern boundary of the Property.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Property Operations:</td>
<td>The Property is vacant and undeveloped land.</td>
</tr>
<tr>
<td>Structures, Roads, Other Improvements:</td>
<td>No structures were observed on the Property during the site reconnaissance. Several unpaved roads, trails and a few paved roads were observed on the Property. 220 and 550 kV power transmission lines were also identified on the Property. The Property is bisected by SCE power lines.</td>
</tr>
<tr>
<td>Property Size (acres):</td>
<td>Approximately 1,191 acres</td>
</tr>
<tr>
<td>Estimated % of Property Covered by Buildings and/or Pavement:</td>
<td>The project site is undeveloped and has no buildings or pavement.</td>
</tr>
<tr>
<td>Observed Current Property Use/Operations:</td>
<td>None.</td>
</tr>
<tr>
<td>Observed Evidence of Past Property Use(s):</td>
<td>None.</td>
</tr>
<tr>
<td>Sewage Disposal Method (and age):</td>
<td>None.</td>
</tr>
<tr>
<td>Potable Water Source:</td>
<td>California Aqueduct is adjacent to the southern Property boundary.</td>
</tr>
<tr>
<td>Electric Utility:</td>
<td>220 and 550 kV power transmission lines were identified on the Property. The Property is bisected by SCE power lines.</td>
</tr>
<tr>
<td>Stressed Vegetation:</td>
<td>Minor stressed vegetation was observed on the Property east of West 100th Street. No staining was observed.</td>
</tr>
<tr>
<td>Waste Streams and Waste Collection Areas:</td>
<td>Construction debris and trash as well as dumping of automotive tires on and near the Property were observed.</td>
</tr>
<tr>
<td>Stormwater:</td>
<td>Considering the general topography, stormwater discharge would be to the north. No discharges were observed during the site reconnaissance. No potential off-site sources of contamination flowing onto Property via stormwater were</td>
</tr>
</tbody>
</table>
The project site was inspected for the typical RECs listed below. None of the listed RECs were observed on the project site.

- Odors.
- Pools of liquid.
- Electric or hydraulic equipment likely to contain PCBs.
- Storage tanks.
- Drums or other containers.
- Pits, ponds, lagoons.
- Stained soil or pavement.
- Solid waste disposal.
- Waste water discharge.
- Wells or septic systems.
- Potential Areas of Fill Placement

**Fire Protection**

Fire protection for the project site is provided by LACFD. The City of Lancaster is located in Division 5 – North Regional Operations Bureau of the Los Angeles County Fire Department’s Regional Plan Division. Battalion 11 of the LACFD is assigned to directly serve the greater Lancaster region. The Antelope Valley Division Headquarters are located at 42110 6th Street West in Lancaster, California. The project site would be serviced by Station No. 84 located at 5030 West Avenue L, which is approximately 3 miles east of the project site. LACFD maintains a
contractual relationship with California Department of Forestry and utilizes the California Fire Plan within Los Angeles County as the primary wildland fire protection plan.

The proposed project lies within a Local Responsibility Area (LRA) - Incorporated area, as defined by CAL FIRE, and is considered to be relatively low risk. Gen-tie Route 4 is located in a relatively high risk area for wildfires; likewise, Gen-tie Route 5 is located in an area of relatively moderate risk area for wildfires. The proposed project has an overall low fire hazard risk rating for the following reasons: the project site is surrounded by natural fire breaks including Avenue L, 80th Street West, 100th Street West, and the California Aqueduct; Los Angeles Fire Department - Antelope Valley Division Headquarters are located at 42110 6th Street West in Lancaster, California; and the proposed project would include thirteen 10,000 gallon water storage tanks staged at various locations throughout the project site. The foothills directly west and south are under the jurisdiction of CAL FIRE and have an increased risk of wildfire. CAL FIRE identifies these areas to be Very High Fire Hazard Severity Zones in State Responsibility Areas (SRAs) and are at very high risk for wildland fires (CAL FIRE 2007). The California Aqueduct acts as a built in buffer and firebreak in addition to the trail system and setbacks which are identified in Figure 3.7-1, which separates the proposed project from those areas predominately identified as a Very High Fire Hazard Severity Zone.

Electric and Magnetic Fields

Recognizing that there is a great deal of public interest and concern regarding potential health effects from exposure to electric and magnetic fields (EMFs) from power lines, this section provides information regarding EMF associated with electric utility facilities and the potential effects of the proposed project related to public health and safety. Potential health effects from exposure to electric fields from power lines is typically not of concern since electric fields are effectively shielded by materials such as trees, walls, etc., (PTI 1993). Therefore, the majority of the following information related to EMF focuses primarily on exposure to magnetic fields from power lines. However, this section does not consider magnetic fields in the context of CEQA and determination of environmental impact, first because there is no agreement among scientists that EMF creates a health risk, and second because there are no defined or adopted CEQA standards for defining health risk from EMF. As a result, EMF information is merely presented for the benefit of the public and decision-makers.

Defining EMF

Electric and magnetic fields are separate phenomena and occur both naturally and as a result of human activity across a broad electrical spectrum. Naturally occurring electric and magnetic fields are caused by the weather and the earth’s geomagnetic field. The fields caused by human activity result from technological application of the electromagnetic spectrum for uses such as communications, appliances, and the generation, transmission, and local distribution of electricity.

The frequency of a power line is determined by the rate at which electric and magnetic fields change their direction each second. For power lines in the United States, the frequency of change is 60 times per second and is defined as 60 Hertz (Hz) power. In Europe and many other countries, the frequency of electric power is 50 Hz. Radio and communication waves operate at
Figure 3.7-1
CAL FIRE Fire Hazard Severity Zones
Lancaster Energy Center
much higher frequencies: 500,000 Hz to 1,000,000,000 Hz. The information presented in this document is limited to the EMF from power lines operating at frequencies of 50 or 60 Hz.

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

**Electric Fields**

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

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

Electric fields in the vicinity of power lines can cause the same phenomena as the static electricity experienced on a dry winter day, or with clothing just removed from a clothes dryer, and may result in small nuisance electric discharges when touching long metal fences, pipelines, or large vehicles. An acknowledged potential impact to public health from electric transmission lines is the hazard of electric shock: electric shocks from transmission lines are generally the result of accidental or unintentional contact by the public with the energized wires.

**Magnetic Fields**

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

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

For more than 20 years, questions have been asked regarding the potential effects within the environment of EMFs from power lines, and research has been conducted to provide some basis for response. Earlier studies focused primarily on interactions with the electric fields from power lines. In the late 1970s, the subject of magnetic field interactions began to receive additional public attention and research levels have increased. A substantial amount of research investigating both electric and magnetic fields has been conducted over the past several decades; however, much of the body of national and international research regarding EMF and public health risks remains contradictory or inconclusive.

Extremely low frequency (ELF) fields are known to interact with tissues by inducing electric fields and currents in these fields. However, the electric currents induced by ELF fields commonly found in our environment are normally much lower than the strongest electric currents naturally occurring in the body such as those that control the beating of the heart. Research related to EMF can be grouped into three general categories: cellular level studies, animal and human experiments, and epidemiological studies. These epidemiological studies have provided mixed results, with some studies showing an apparent relationship between magnetic fields and health effects while other similar studies do not. Laboratory studies and studies investigating a possible mechanism for health effects (mechanistic studies) provide little or no evidence to support this link.

Since 1979, public interest and concern specifically regarding magnetic fields from power lines has increased. This increase has generally been attributed to publication of the results of a single epidemiological study (Wertheimer and Leeper 1979). This study observed an association between the wiring configuration on electric power lines outside of homes in Denver and the incidence of childhood cancer. Following publication of the Wertheimer and Leeper study, many epidemiological, laboratory, and animal studies regarding EMF have been conducted.

After several decades of study regarding potential public health risks from exposure to power line EMF, research results remains inconclusive. Several national and international panels have conducted reviews of data from multiple studies and state that there is not sufficient evidence to conclude that EMF causes cancer. In recent years, the International Agency for Research on Cancer (IARC) and the California Department of Health Services (DHS) both classified EMF as a possible carcinogen. In 2007, the WHO’s EHC Monograph 238 concluded that evidence for a link between Extremely Low Frequency (50-60 Hz) magnetic fields and childhood leukemia “is not strong enough to be considered causal, but [it is] sufficiently strong to remain a concern”. As for other diseases, there is inadequate or no evidence of health effects at low exposure levels. Furthermore, existing EMF exposure potentials within the community are widespread and cover a very broad range of field intensities and duration. There are no current applicable regulations related to EMF levels from power lines.

**Radio/Television/Electronic Equipment Interference**

Corona discharges form at the surface of a transmission line conductor when the electric field intensity on the conductor surface exceeds the breakdown strength of air. The breakdown of air
generates light, audible noise, radio noise, ozone, conductor vibration and causes a dissipation of energy. (EPRI 1982)

The IEEE has published a design guide (Radio Noise Subcommittee, 1971) that is used to limit conductor surface gradients so as to avoid corona levels which would cause electronic interference. Gap discharges occur when an arc forms across a gap in loose or worn line hardware and can also be a source of high frequency energy. It is estimated that over 90 percent of interference problems for electric transmission lines are due to gap discharges. Line hardware is designed to be problem-free, but wind motion, corrosion, and other factors can create a gap discharge condition. When identified, gap discharges can be located and remedied by utilities by tightening loose fittings or replacing worn hardware.

Electric fields from power lines do not typically pose interference problems for electronic equipment in businesses since the equipment is shielded by buildings and walls. However, magnetic fields can penetrate buildings and walls, thereby interacting with electronic equipment. Depending upon the sensitivity of equipment, the magnetic fields can interfere with equipment operation. Review of this phenomenon in regard to the sensitivity of electrical equipment identifies a number of thresholds for magnetic field interference.

Interference with cathode ray tube (CRT) type computer monitors can be detected at magnetic field levels of 10 mG and above, while large screen or high-resolution CRT monitors can be susceptible to interference at levels as low as 5 mG. Other specialized equipment, such as medical equipment or testing equipment can be sensitive at levels below 5 mG. Equipment that may be susceptible to very low magnetic field strengths is typically installed in specialized and controlled environments, since even building wiring, lights, and other equipment can generate magnetic fields of 5 mG or higher.

The most common electronic equipment that can be susceptible to magnetic field interference is CRT type computer monitors. Magnetic field interference results in disturbances to the image displayed on the monitor, often described as screen distortion, “jitter,” or other visual defects. In most cases it is annoying, and at its worst, it can prevent use of the monitor. This type of interference is a recognized problem in the video monitor industry. As a result, there are manufacturers who specialize in monitor interference solutions and shielding equipment. Possible solutions to this problem include: relocation of the monitor, use of magnetic shield enclosures, software programs, and replacement of CRT monitors with liquid crystal displays that are not susceptible to magnetic field interference.

There are no local, State, or federal regulations with specific limits on high frequency emissions from electric power facilities. Federal Communication Commission (FCC) regulations require that transmission lines be operated so that no harmful interference is produced (FCC regulations, Section 15.25).

**Induced Currents and Shock Hazards**

Power line fields can induce voltages and currents on conductive objects, such as metal roofs or buildings, fences, and vehicles. Transmission lines are designed to limit the short circuit current, from conductive items beneath the line, to a safe level (less than 5 milliampere). When a person or animal comes in contact with a conductive object a perceptible current or small electric
shock may occur. These small electric shocks cause no physiological harm; however, they may present a nuisance.

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

**Cardiac Pacemakers**

An area of concern related to electric fields from transmission lines has been the possibility of interference with cardiac pacemakers. In 2004, EPRI produced a report (2004 EPRI review Electromagnetic Interference with Implantable Medical Devices: 1997-2003) about EMF interference to implanted cardiac pacemakers and defibrillators in the frequency range of 1 Hz to 3 kilohertz (kHz). The report found that electric and magnetic fields could alter the function of pacemakers and implantable cardioverter defibrillators (ICDs), but electric fields appear to be the most likely source of interference. The magnitude or intensity of the magnetic field required to alter the function of these devices varies widely with frequency and waveform.

There are two general types of pacemakers: asynchronous and synchronous. The asynchronous pacemaker pulses at a predetermined rate. It is generally immune to interference because it has no sensing circuitry and is not exceptionally complex. The synchronous pacemaker, however, pulses only when its sensing circuitry determines that pacing is necessary. Interference from transmission line electric field may cause a spurious signal on the pacemaker’s sensing circuitry. However, when these pacemakers detect a spurious signal, such as a 60 Hz signal, they are programmed to revert to an asynchronous or fixed pacing mode of operation, returning to synchronous operation within a specified time after the signal is no longer detected. Cardiovascular specialists do not consider prolonged asynchronous pacing a problem, since some pacemakers are designed to operate that way. Periods of operation in this mode are commonly induced by cardiologists to check pacemaker performance. So, while transmission line electric fields may interfere with the normal operation of some of the older model pacemakers (pre-1990), the result of the interference is not harmful, and is of short duration (EPRI 1985 and 1979).

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

**Valley Fever**

Valley Fever is an illness caused by the fungus *Coccidioides* which grows in soils in areas, such as the Antelope Valley, that have low rainfall, high summer temperatures, and moderate winter temperatures. It is found most often in the southwestern United States (especially Arizona and California) and parts of Mexico, Central America, and South America, and has been reported locally, in Los Angeles County. Valley Fever infection rates are the highest from June to November, when soils are typically very dry. Valley Fever is not known to spread from person to person or between people and animals. Exposure typically occurs in connection with ground
disturbing activities that release fungal spores which are then inhaled. The spores live in soil and can live for an extended time in harsh environmental conditions. Construction personnel, agriculture workers and archaeologist typically have an increased risk of exposure to the *Coccidioides* fungus since those professions can be exposed to disturbed soils that harbor the fungal spores (California Department of Public Health [CDPH] 2013).

The Centers for Disease Control and Prevention (CDCP) indicates that 752 of the 8,657 persons (8.7 percent) hospitalized in California between 2000 and 2007 for Valley fever died (CDCP 2013). Within the region, Kern County reported the highest hospitalization rates, increasing from 121 (18.2 per 100,000 population) in 2000 to 285 (34.9 per 100,000 population) in 2007, and peaking in 2005 at 353 hospitalizations (45.8 per 100,000 population). Most people who are exposed to the fungus do not develop symptoms, or have relatively mild flu-like symptoms. Others, however, can experience more severe symptoms, particularly individuals with a weakened immune system, individuals of African-American or Filipino descent, or who are pregnant. The elderly may also be prone to more severe cases. Common symptoms include fever, cough, headache, rash, muscle aches, and joint pain. Symptoms of advanced *coccidioidomycosis* may include skin lesions, chronic pneumonia, meningitis, bone or joint infection. Symptoms may appear between one and three weeks after exposure. Some patients have reported having symptoms for six months or longer, especially if the infection is not diagnosed early.

**Microcrystalline Silicon and Cadmium-Telluride**

PV solar panels that would be installed on the project site would be made from either microcrystalline silicon or cadmium telluride (CdTe). Photovoltaic modules may contain small amounts of regulated materials, which vary from one technology to another (e.g., Cd, Pb, Se, Cu, Ni and Ag). Environmental regulations can determine the cost and complexity of dealing with end-of-life PV modules. If they were classified as “hazardous” according to Federal or State criteria, then special requirements for material handling, disposal, record-keeping, and reporting would escalate the cost of module decommissioning (Kern County DEIR Blackwell Solar Park Project 2014).

Microcrystalline silicon PV panels may include small amounts of solid materials that are considered hazardous. A silicon PV module is composed of silicon solar cells, metal contacts between the cells, an encapsulation layer that encloses the cells, a front glass plate, and a back-side foil or a second glass plate on the back side. Often the module is framed with aluminum and contains a contact box. The outer glass cover constitutes the largest share of the total mass of a finished crystalline PV module (approximately 65%), followed by the aluminum frame (~20%), ethylene vinyl acetate encapsulant (~7.5%), polyvinyl fluoride substrate (~2.5%), and the junction box (1%). The solar cells themselves only represent about 4% of the mass of a finished module. Because such materials are in a solid and non-leachable state, broken microcrystalline PV panels would not be a source of pollution to surface water, stormwater, or groundwater. Crystalline silicon panels removed from the site would be recycled or otherwise disposed of at an appropriate waste disposal facility. Silicon based modules can be recycled with aluminum frames and junction boxes dismantled manually at the beginning of the process. The module is then crushed in a mill and the different fractions are separated: glass, plastics, and metals. It is possible to recover more than 80% of the incoming weight. This process can be performed by flat glass recyclers since morphology and composition of a crystalline module is
similar to those flat glasses used in the building and automotive industry. The recovered glass for example is readily accepted by the glass foam and glass insulation industry. Intact silicon wafers can be processed into new solar cells, using standard solar cells production processes including: “texturization, emitter formation, parasitic junction removal, passivation, antireflection coating deposition, and front and back contact formation” (Kern County DEIR Blackwell Solar Park Project 2014). Multiple groups have reported solar cells created from recycled wafers have efficiencies similar—if not equal—to the originals. Using silicon wafers reclaimed from end-of-life PVs to create new solar cells is a viable recycling method. If not properly decommissioned, the greatest direct end-of-life health risk from crystalline solar modules is electric shock, as solar panels can still generate electric current even if broken. The greatest indirect health risk arises from lead-containing solders used in early-generation solar panels. Under the right conditions it is possible for the lead to leach into landfill soils and eventually into water bodies. However, modern solar modules are made with tin- or other non-lead solder and would not pose the health risk typical of older solar modules (Kern County DEIR Blackwell Solar Park Project 2014).

In PV modules using “thin-film” CdTe technology, the cadmium is in the environmentally stable form of a compound rather than the leachable form of a metal. The CdTe compound is encapsulated in the PV module, with the PV module containing very little cadmium, less than 0.1% by weight. An 8-square-foot area of a CdTe panel contains less cadmium than one size-C nickel-cadmium flashlight battery. CdTe modules can be recycled by crushing the module and subsequently separating the different fractions utilizing hydro-metallurgical processes. This recycling process is designed to recover up to 90% of the glass and 95% of the semiconductor materials contained. Several peer-reviewed studies have evaluated the environmental, health, and safety aspects of CdTe PV panels. These studies have consistently concluded that during normal operations, CdTe PV panels do not present an environmental risk. Specifically, it has been demonstrated that there are no cadmium emissions to air, water, or soil during standard operation of CdTe PV systems. CdTe releases are unlikely to occur during accidental breakage. Furthermore, studies have been conducted to evaluate the panels when the stability of the encapsulation is jeopardized, such as when a broken panel is exposed to fire. These studies indicate that even these events would result in negligible cadmium emissions, most likely because CdTe has a very high melting temperature of 1,041 degrees Celsius. A recent research article evaluates the worst-case scenario to estimate potential exposures to cadmium compounds in soil, air, or groundwater. The results show that exposure point concentrations in soil, air, and groundwater are one to six orders of magnitude below human health screening levels, indicating that it is highly unlikely that exposures to these media would pose potential health risks to onsite workers or offsite residents (Kern County DEIR Blackwell Solar Park Project 2014).

### 3.7.3 Environmental Impacts

This section analyzes the proposed project’s potential to result in significant hazard or hazardous material impacts. When an impact is determined to be significant, mitigation measures are identified that would reduce or avoid that impact.

**Methodology for Analysis**

The proposed project’s effects are compared to the thresholds of significance related to hazards and hazardous materials to determine whether project implementation would result in
impacts on humans or the environment. As part of the proposed project impact evaluation process a Phase I Environmental Site Assessment was prepared for the entirety of the project site. Given the rural nature of the project area, ASTM Designation E2247-08 and ASTM Designation E1527-13 were used to evaluate any potential hazards or hazardous conditions that may be present at the project site.

Thresholds of Significance

According to the CEQA Guidelines’ Appendix G Environmental Checklist the following questions were analyzed and evaluated to determine whether hazards and hazardous materials impacts are significant. Would the proposed project:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the hazardous materials into the environment?
- Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?
- Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

The following questions were determined to have no impact during the Notice of Preparation Scoping. This issue is summarized in Section 4, Effects Found Not To Be Significant, and is not discussed further in this section.

- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?
- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?
- For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

3.7.3.1 Project Impact Analysis and Mitigation Measures

This section discusses potential impacts associated with the proposed project and provides mitigation measures where necessary.
Routine Use

Impact HAZ-1  The proposed project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

Impact Analysis

Construction of the proposed project would involve small quantities of commonly used materials, such as fuels and oils, to operate construction equipment. The use, storage, and disposal of hazardous materials and wastes are controlled by existing regulations that will be followed during construction and operation of the proposed project. Additionally, standard construction BMPs would be implemented to reduce pollutant discharge during construction; therefore, this impact would be less than significant.

Maintenance activities at the project site would require the use and disposal of hazardous materials. An example of a maintenance activity would be touch-up painting of the water storage tanks, where a wide variety of chemicals, such as paint and other cleaning solvents, would be used in small quantities, as needed. Limited use of chemicals would result in a less than significant impact.

The majority of hazardous materials to be used during operations (fuels, oils, and lubricants) are of low toxicity. As these materials are required for operation of construction vehicles and equipment, standard BMPs would be implemented under the Storm Water Pollution Prevention Plan (SWPPP) to reduce the exposure to or potential for accidental spills involving the use of these materials. Implementation of standard BMP’s under the SWPPP would reduce exposure to hazardous materials during operations to a less than significant impact.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

Accident Conditions

Impact HAZ-2  The proposed project would create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving a hazardous materials release into the environment.

Impact Analysis

Construction
Site workers, the public, and the environment could be inadvertently exposed to hazardous substances onsite during project construction. Small quantities of hazardous substances (such as petroleum and motor oil) would be used at the project site and transported to and from the area during construction. However, the handling and disposal of these materials would be governed according to regulations enforced by CUPA, Cal/OSHA, and DTSC, as previously discussed. In addition, regulations under the CWA require contractors to avoid allowing the release of materials into surface waters as part of their SWPPP and NPDES permit requirements (see Section 3.8, Hydrology and Water Quality). This regulatory structure would ensure that safety measures and precautions are implemented, thereby reducing any potential impacts associated with the accidental upset or release of hazardous materials. Accordingly, with implementation of Mitigation Measure HYD-1, impacts related to potential hazardous materials released into environment from upset or accident conditions would be less than significant.

Construction activities, including grading and construction vehicle traffic, would generate fugitive dust and expose sensitive receptors (e.g., residences, construction personnel, etc.) to potential health hazards associated with the Coccidioides fungus (Valley Fever) during high winds. Extended periods of high heat or unusually windy conditions could increase fugitive dust and the resulting potential for exposure to the Coccidioides fungus. As a result, sensitive receptors could be exposed to potential health hazards during project construction, resulting in a potentially significant impact.

The project will minimize the generation of fugitive dust during these activities by complying with AVAQMD’s regulations and implementing standard construction BMPs. The proposed project would implement dust suppression measures throughout project construction and operation in accordance with a dust control plan to minimize fugitive dust and thereby potential Valley Fever hazards. Additionally, Section 3.3, Air Quality and Greenhouse Gases, identifies mitigation measures to reduce particulate matter and dust during construction. The implementation of Mitigation Measures AQ-1 through AQ-4 would further minimize potential health hazards associated with Valley Fever. These measures require that the proposed project minimize ground disturbance, apply soil stabilizers to disturbed areas (where appropriate), conduct construction watering, and similar measures to minimize fugitive dust emissions. These measures would minimize the likelihood or extent of fugitive dust, thereby reducing the potential for exposure to the Coccidioides fungus.

In addition to the measures described above, Mitigation Measure HAZ-1 would further minimize potential health hazards during construction. This measure includes additional dust suppression during periods of extended high heat or excessive wind (greater than 15 mph) to minimize the release of fugitive dust and fungal spores Mitigation Measure HAZ-2 requires the implementation of worker training and personnel protective equipment to minimize the risk of exposure for construction personnel. Therefore, potential health hazards during construction would be less than significant.

**Operations**

Potential for exposure to hazardous materials during post-construction operations includes exposure to solar panel materials. PV solar panels that would be installed on the project site would be made from either microcrystalline silicon or CdTe. Photovoltaic modules may contain
small amounts of regulated materials, which vary from one technology to another (e.g., the metals Cd, Pb, Se, Cu, Ni and Ag).

Microcrystalline silicon PV panels may include small amounts of solid materials that are considered hazardous. A silicon PV module is composed of silicon solar cells, metal contacts between the cells, an encapsulation layer that encloses the cells, a front glass plate, and a back-side foil or a second glass plate on the back side. Often the module is framed with aluminum and contains a contact box. The outer glass cover constitutes the largest share of the total mass of a finished crystalline PV module (approximately 65%), followed by the aluminum frame (~20%), ethylene vinyl acetate encapsulant (~7.5%), polyvinyl fluoride substrate (~2.5%), and the junction box (1%). The solar cells themselves only represent about 4% of the mass of a finished module. Because such materials are in a solid and non-leachable state, broken microcrystalline PV panels would not be a source of pollution to surface water, stormwater, or groundwater.

In PV modules using “thin-film” CdTe technology, the cadmium is in the environmentally stable form of a compound rather than the leachable form of a metal. The CdTe compound is encapsulated in the PV module, with the PV module containing very little cadmium, less than 0.1% by weight. Several peer-reviewed studies have evaluated the environmental, health, and safety aspects of CdTe PV panels. These studies have consistently concluded that during normal operations, CdTe PV panels do not present an environmental risk. Specifically, it has been demonstrated that there are no cadmium emissions to air, water, or soil during standard operation of CdTe PV systems. CdTe releases are unlikely to occur during accidental breakage. Furthermore, studies have been conducted to evaluate the panels when the stability of the encapsulation is jeopardized, such as when a broken panel is exposed to fire. These studies indicate that even these events would result in negligible cadmium emissions, most likely because CdTe has a very high melting temperature of 1,041 degrees Celsius. A recent research article evaluates the worst-case scenario to estimate potential exposures to cadmium compounds in soil, air, or groundwater (Kern County DEIR Blackwell Solar Park Project 2014). The results show that exposure point concentrations in soil, air, and groundwater are one to six orders of magnitude below human health screening levels, indicating that impacts related to exposure to solar panel materials would be less than significant.

Electric and Magnetic Fields

Potential health effects from exposure to electric fields from power lines is typically not of concern since electric fields are effectively shielded by materials such as trees, walls, etc. Magnetic fields are not considered here in the context of a CEQA determination, first because there is no agreement among scientists that EMF creates a health risk, and second because there are no defined or adopted CEQA standards for defining health risk from EMF. As a result, EMF information is merely presented for the benefit of the public and decision-makers. Induced currents and voltages on conducting objects near the proposed transmission lines represent a potential hazard; but these transmission lines do not pose a threat if the conducting objects are properly grounded. As part of the siting and construction process for the proposed project, the applicant has sited all proposed gen-tie lines with nothing underneath them that would conflict with grounding and some gen-ties would be underground. Therefore, this is considered a less than significant impact. No mitigation measures are required or recommended with respect to EMFs.
Radio/Television/Electronic Equipment Interference

Corona or gap discharges related to high frequency radio and television interference impacts are dependent upon several factors including the strength of broadcast signals and are anticipated to be very localized if it occurs at all. Individual sources of adverse radio/television interference impacts can be located and corrected on the power lines. Conversely, magnetic field interference with electronic equipment such as computer monitors can be corrected through the use of software, shielding or changes at the monitor location. After energizing the gen-tie line the applicant will respond to and document all radio/television/equipment interference complaints received and the responsive action taken. These records shall be made available to the City upon request. Therefore, this is considered a less than significant impact. No mitigation measures are required or recommended.

Cardiac Pacemakers

The electric fields associated with the proposed project’s transmission lines may be of sufficient magnitude to impact operation of a few older model pacemakers (pre-1990) resulting in them reverting to an asynchronous pacing. Cardiovascular specialists do not consider prolonged asynchronous pacing to be a problem; periods of operation in this mode are commonly induced by cardiologists to check pacemaker performance. Therefore, while the transmission line’s electric field may impact operation of some older model pacemakers (pre-1990), the result of the interference is of short duration and is considered less than significant.

Level of Significance Before Mitigation

Construction

Potentially Significant Impact.

Operation

Less Than Significant Impact.

Mitigation Measures

MM HAZ-1: Additional dust suppression measures shall be implemented between June 1 and November 30. The additional dust suppression measures shall be implemented prior to and immediately following ground disturbing activities if wind speeds exceed 15 mph or temperatures exceed 95 degrees Fahrenheit for three consecutive days. The additional dust suppression shall continue until winds are 10 mph or lower and ambient air temperatures are below 90 degrees for at least two consecutive days. The additional dust suppression measures shall be incorporated into the Dust Control Plan. A copy of the approved Dust Control Plan shall be submitted to the City of Lancaster prior to the issuance of construction related permits.

MM HAZ-2: Prior to the issuance of any construction related permits, the applicant/developer shall prepare and implement a worker training program that describes the potential health hazards associated with Valley Fever, common symptoms, proper safety procedures to minimize health hazards, and notification procedures if suspected work-related symptoms are identified during construction. Copies of the training program shall be provided to the City of Lancaster.
The worker training program shall identify safety measures to be implemented by construction contractors during construction. These measures shall include the following:

- HEPA-filtered, air-conditioned enclosed cabs shall be provided on heavy equipment when available. Workers shall be trained on the proper use of cabs, such as turning on air conditioning prior to using the equipment.

- Communication methods, such as two-way radios, shall be provided for use by workers in enclosed cabs.

- Personal protective equipment (PPE), such as half-mask and/or full-mask respirators equipped with particulate filtration, shall be provided to workers active in dusty work areas upon request.

- Separate, clean eating areas with hand-washing facilities shall be provided for construction workers.

- Equipment, vehicles, and other items shall be cleaned before they are moved offsite to other work locations.

**Level of Significance After Mitigation**

**Construction**

Less Than Significant Impact.

**Operation**

Less Than Significant Impact.

**Hazardous Materials Site Listing**

| Impact HAZ-3 | The proposed project would not be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, it would not create a significant hazard to the public or the environment. |

**Impact Analysis**

The Phase I Environmental Site Assessment conducted for the proposed project concluded that there are no significant risks of hazards to the public. Results from the Phase I Environmental Site Assessment database search do not indicate a significant risk of environmental contamination at the project site from on-site or off-site sources, nor is there any need for environmental cleanup of existing conditions. There is no known source of subsurface contamination on the project site and no known sources of off-site contamination with the potential to migrate to the project site through groundwater. Therefore, there would be no impact from hazardous waste sites and no mitigation is required.

**Level of Significance Before Mitigation**

No Impact.
Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

No Impact.

Emergency Plans

| Impact HAZ-4 | The proposed project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. |

Impact Analysis

It is estimated that a total of 12,168 truck deliveries would be required over the course of construction to import construction materials and deliver equipment to the project site. This is approximately 20 trips per day, includes all deliveries for solar panels, water, FedEx deliveries, etc.. Additionally, up to 250 construction worker trips could occur during the peak construction period over the anticipated 24 months of construction. The impact of this increased traffic could be potentially significant because 90th Street West; from Avenue L north to the County line, Avenue L; from 90th Street West eastward, and Avenue K; from 90th Street West eastward, are identified evacuation routes in the City. However, implementation of Mitigation Measure TRA-1 would avoid traffic back-ups and thereby minimize impacts on emergency vehicle access or evacuation to a less than significant level.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

Implementation of Mitigation Measure TRA-1.

Level of Significance After Mitigation

Less Than Significant Impact.

Wildland Fires

| Impact HAZ-5 | The proposed project would 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. |

Impact Analysis

The project site consists primarily of desert lands with dry climate conditions. The proposed project site is predominately located in an area considered to be at low risk for wildland fires with the exception of Gen-tie Routes 4 and 5 because they are surrounded by fire breaks. The
proposed project site is not designated in a SRA; however, the foothills directly west and south of the project site are in a SRA (Figure 3.7-1). In conformance with the City of Lancaster and State of California Fire Code standards, the project site would include perimeter roads and evenly distributed interior access roads. The project site interior access roads would be constructed 20 feet wide with a 32 feet centerline turning radius (22 feet interior radius and 42 feet exterior radius) to accommodate emergency vehicles. The project site would also provide emergency access to thirteen 10,000 gallon water storage tanks, which will be staged at various locations throughout the project site.

Human activities are the primary reason wildfires start, although lightning strikes do occasionally occur. Project construction would involve the use of heavy equipment, welding, and other activities which have the potential to ignite fires. As such, proposed project construction activities could increase risk to wildland fires, causing a potentially significant impact.

During scheduled maintenance or emergency repairs, the proposed project would require an average crew of approximately six technicians; as such, the presence of minimal personnel onsite during project operation, would increase the impact of potential wildland fires.

Solar panels are manufactured from fire resistant materials and other electrical equipment would be enclosed in fire-resistant material. All wiring would be in accordance with current electrical codes, including clear-area setbacks from utility poles. Malfunction of equipment leading to a potentially significant increase in fire hazards may occur during project operations. The primary danger associated with the proposed project is the potential for faulty electrical equipment which is capable of spontaneous ignition due to overheating. Overheating may be caused by electrical shorting, manufacturers defect, poor design, or mechanical damage, among other causes. Typical fire suppression methods would not be effective in a potential fire situation. However, the project has been designed with the following features to reduce the risk of wildfires: project site interior access roads would be constructed 20 feet wide with a 32 feet centerline turning radius (22 feet interior radius and 42 feet exterior radius) to accommodate emergency vehicles; and the project site would also provide emergency access to thirteen 10,000 gallon water storage tanks, which will be staged at various locations throughout the project site. While not common, there is the potential for events causing potential fire onsite. As a result, anyone near the facility in the event of a fire could be injured including project employees or fire personnel responding at the project site. Therefore, this impact is considered potentially significant.

Overall, the proposed project could increase the potential for wildland fires due to construction activities, limited human presence during project operations, and from malfunction of electrical equipment. Implementation of Mitigation Measure HAZ-3 would reduce this potential impact to less than significant. Personnel training through the fire protection plan would also reduce potential impacts associated with fire. Typically, when faced with fires at solar facilities, firefighters allow the fire to burn out rather than directly intercede. Firefighters will stand by to ensure that any fire does not spread beyond the area. Because fires at solar facilities caused by overheating are unique, it would be imperative for fire protection personnel to be notified of the potential for this type of fire onsite so that they can apply appropriate fire-fighting tactics. Implementation of Mitigation Measures HAZ-3 would reduce this impact to a less than significant level.
Level of Significance Before Mitigation

Construction

Potentially Significant Impact.

Operation

Potentially Significant Impact.

Mitigation Measures

**MM HAZ-3:** The applicant shall prepare a Fire Protection Plan prior to beginning construction. The Fire Protection Plan shall include the following measures:

- Internal combustion engines, stationary and mobile, shall be equipped with spark arresters in good working order.

- All personnel shall be trained in the fire safety practices relevant to their duties.

- All construction and maintenance personnel shall be trained and equipped to extinguish small fires.

- Work crews shall have fire-extinguishing equipment on hand, as well as emergency numbers and cell phone or other means of contacting the Fire Department.

- Security gates shall be approved by the Fire Department and include the installation of “Knox” key switch or “Knox” padlock, whichever is most appropriate.

- Smoking shall be prohibited while operating equipment and shall be limited to paved or gravelled areas or areas cleared of all vegetation. Smoking shall be prohibited within 30 feet of any combustible material storage area (including fuels, gases, and solvents). Smoking shall be prohibited in any location during a Red Flag Warning issued by the National Weather Service for the project area.

Level of Significance After Mitigation

Less Than Significant Impact.

3.7.4 Cumulative Impacts

Hazardous materials used during construction are of low toxicity and would consist of fuels, oils, and lubricants. Because these materials are required for operation of construction vehicles and equipment, BMPs would be implemented to reduce the potential for or exposure to accidental spills or fires involving the use of hazardous materials. Impacts from minor spills or drips would be avoided by thoroughly cleaning up minor spills as soon as they occur. While the related projects have the potential to cause similar impacts, these projects are also required to implement similar BMPs. Therefore, there would not be a cumulative impact.
The proposed project would involve the transport, use, and disposal of hazardous materials such as fuels, lubricating oils, hydraulic fluids, glycol-based coolants, lead-acid batteries, solvents, paints, and coatings. Solar facilities could also involve the use of the toxic elemental metal cadmium, and other chemicals depending on the solar technology used.

Construction and operations activities of development projects, including renewable energy projects, permitted in the region would involve movement of soil materials. Valley Fever is spread through the air and if soil containing the Valley Fever fungus is disturbed by construction, natural disasters, or wind, the fungal spores can be released into the air. Potential hazardous material impacts from projects permitted in the region are increased risks of fires, human health impacts, and environmental contamination. The projects listed in Table 3-3 would use many similar types of hazardous materials during construction, in particular fuels, lubricating oils, hydraulic fluids, glycol-based coolants, lead-acid batteries, solvents, paints, cleaning agents and coatings. Some of the projects would also result in a substantial amount of ground disturbance in areas where the Valley Fever spore is known to occur. Projects in the region have been required to stop construction due to concerns about dust management and Valley Fever until additional dust mitigation was put in place.

Cumulative impacts resulting from hazardous materials would only occur if projects were in near vicinity of each other and under construction at the same time. This includes cumulative impacts due to Valley Fever. Ground disturbance is stabilized after construction, reducing the risk of airborne fungal spores. Many of the projects listed in Table 3-3 would be expected to have completed construction prior to construction of the proposed project. Some smaller solar projects listed in Table 3-3 could occur at the same time as the proposed project, which results in a cumulative impact. Implementation of mitigation measures similar to HAZ-1 and HAZ-2 requiring dust suppression measures to reduce potential exposure to Valley Fever spores would ensure impacts were less than significant. Therefore, there would not be a cumulative impact.

Development of renewable energy projects permitted by the City of Lancaster would require use of slow-moving heavy-duty trucks and would obstruct traffic in a manner that could inhibit emergency response temporarily during construction phases. Heavy construction traffic using emergency routes could adversely affect emergency service response times. New road hazards could also be introduced as a result of creating new site entry and egress or by inadvertently causing damage to roadway surfaces. The effects of road improvements to ensure site access or potential damage to roadways would be subject to the supervision of the City of Lancaster to ensure that a site does not increase the potential for unsafe movement of vehicles. Implementing traffic controls and measures to avoid or repair wear and tear from construction traffic would avoid this impact. Cumulative projects listed in Table 3-3 would also require use of slow-moving heavy-duty trucks and would obstruct traffic in a manner that could inhibit emergency response temporarily during construction phases. Some projects listed in Table 3-3 would require use of heavy-duty trucks during operations, such as additional solar projects. However, the number of trucks used would be much fewer and would be dispersed throughout the entire western side of the City of Lancaster. In addition, projects that require large use of trucks during operations typically are required to adhere to a traffic management plan or designated routes.

The construction phases of those projects listed in Table 3-3 are not expected to overlap significantly with that of the proposed project. For this reason, the proposed projects would not
contribute to a cumulative impact on increased hazards and the risk for a traffic incident or inhibit emergency response.

The construction of the proposed project would increase the interface of wildlands and development. Renewable energy facilities could increase the potential for wildland fire hazards through the use of hazardous materials, and the introduction of people, equipment, and vehicles into remote areas. The difficulty of extinguishing fires in solar panel fields could spread fires more quickly. Mitigation HAZ-3 would require a Fire Protection Plan to reduce the impact. Not all but some of the projects listed in Table 3-3 would also increase the interface of wildlands and development and could increase the potential for wildland fire hazards, resulting in a cumulative increased risk of wildland fire. Those projects listed in Table 3-3 which are of significant size would also require fire management plans. These plans would likely be effective in ensuring no cumulative effects related to emergency response or fire. Consequently, the risk of loss, injury, or death involving wildland fires as a result of project construction, in conjunction with other related projects, would not be cumulatively considerable.