4.3 Air Quality

This section describes the air quality in the area of the Ivanpah-Control Project (IC Project). The potential impacts resulting from construction and operation of the IC Project and its Alternatives are also addressed.

4.3.1 Environmental Setting

The IC Project Alignment is located within the Great Basin Valleys Air Basin and Mojave Desert Air Basin, which are under the jurisdiction of the Great Basin Unified Air Pollution Control District (GBUAPCD), the Eastern Kern Air Pollution Control District (EKAPCD), and the Mojave Desert Air Quality Management District (MDAQMD). These Districts regulate air pollutant emission for all stationary sources in their respective jurisdictions.

It is the responsibility of an air district to ensure that state and federal ambient air quality standards are achieved and maintained in its geographical jurisdiction. Health-based air quality standards have been established by the State of California (California Ambient Air Quality Standards – CAAQS) and by the federal government (National Ambient Air Quality Standards – NAAQS) for the following criteria air pollutants: ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), particulate matter with a mean diameter of less than 10 microns (PM_{10}), particulate matter with a mean diameter of less than 2.5 microns ($PM_{2.5}$), sulfur dioxide (SO_2), and lead (Pb). Further, California has additional standards for sulfates, hydrogen sulfide (H_2S), vinyl chloride, and visibility reducing particles (VRP). Attainment of the state and federal ambient air quality standards protect sensitive receptors and the public from criteria pollutants that are known to have adverse human health effects.

4.3.1.1 Great Basin Valleys Air Basin

The Great Basin Valleys Air Basin (GBVAB) is so named because its geographical formation is that of a basin, with the surrounding mountains trapping the air and its pollutants in the valleys and basins. The basin includes Alpine, Mono, and Inyo counties. The GBVAB is under the jurisdiction of the Great Basin Unified Air Pollution Control District (GBUAPCD), which regulates air pollutant emissions for all stationary sources in the Basin.

4.3.1.2 Mojave Desert Air Basin

The Mojave Desert Air Basin (MDAB) includes the desert portions of Los Angeles and San Bernardino counties, the eastern desert portion of Kern County, and the northeastern desert portion of Riverside County. The MDAB is comprised of the Eastern Kern Air Pollution Control District (EKAPCD), the Antelope Valley Air Quality Management District (AVAQMD), Mojave Desert Air Quality Management District (MDAQMD) as well the eastern portion of the South Coast Air Quality Management District (SCAQMD). The IC Project Alignment is located in areas under the jurisdiction of the EKAPCD and the MDAQMD.

4.3.1.3 Air Pollutants

4.3.1.3.1 Ozone

Ozone (O_3) is a colorless gas that is not directly emitted as a pollutant, but is formed when hydrocarbons and nitrogen oxides (NO_x) react in the presence of sunlight. Low wind speeds or stagnant air mixed with warm temperatures typically provide optimum conditions for the formation of O_3. Because O_3 formation does not occur quickly, O_3 concentrations often peak downwind of the emission source. As a result, O_3 is

of regional concern as it impacts a larger area. When inhaled, O_3 irritates and damages the respiratory system.

4.3.1.3.2 Particulate Matter

Particulate matter (PM), which is defined as particles suspended in a gas, is often a mixture of substances, including metals, nitrates, organic compounds, diesel exhaust, and soil. PM can be traced back to both man-made and natural sources. The most common sources of natural PM are dust and fires, while the most common man-made source is the combustion of fossil fuels. PM causes irritation to the human respiratory system when inhaled. The extent of the health risks due to PM exposure can be determined by the size of the particles. The smaller the particles, the deeper they can be deposited in the lungs. PM is often grouped into two categories—PM_{10} and $PM_{2.5}$.

4.3.1.3.3 Carbon Monoxide

Carbon monoxide (CO) is a colorless, odorless, and tasteless gas that is directly emitted as a by-product of combustion. CO concentrations tend to be localized to the source, and the highest concentrations are associated with cold, stagnant weather conditions. CO is readily absorbed through the lungs into the blood, where it reduces the ability of the blood to carry oxygen.

4.3.1.3.4 Nitrogen Oxides

Nitrogen oxides (NO_x) is a generic name for the group of highly reactive gases that contain nitrogen and oxygen in varying amounts. Many types of NO_x are colorless and odorless. However, when combined with particles in the air, one common pollutant—NO_2—can often be seen as a reddish-brown layer over many urban areas. NO_x is formed when fuel is burned at high temperatures. Typical man-made sources of NO_x include motor vehicles, fossil-fueled electricity generation utilities, and other industrial, commercial, and residential sources that burn fossil fuels. NO_x can harm humans by affecting the respiratory system. Small particles can penetrate the sensitive parts of the lungs, causing or worsening respiratory disease and aggravating existing heart conditions. As previously discussed, O_3 is formed when NO_x and VOCs react with sunlight.

4.3.1.4 Sulfur Oxides

Sulfur oxides (SO_x) form when sulfur-containing materials are processed or burned. SO_x sources include industrial facilities (e.g., petroleum refineries, cement manufacturing facilities, and metal processing facilities), locomotives, large ships, and some non-road diesel equipment. A wide variety of adverse health and environmental impacts are associated with SO_x because of the way it reacts with other substances in the air. Children, elderly people, and people with asthma or a heart or lung disease are particularly sensitive to SO_x emissions. When inhaled, these particles gather in the lungs and contribute to increased respiratory symptoms and disease, difficulty breathing, and premature death.

4.3.1.4.1 Volatile Organic Compounds

Volatile organic compounds (VOCs) are a group of chemicals that react with NO_x and hydrocarbons in the presence of heat and sunlight to form O_3. Examples of VOCs include gasoline fumes and oil-based paints. This group of chemicals does not include methane or other compounds determined by the United States Environmental Protection Agency (USEPA) to have negligible photochemical reactivity.

4.3.1.5 Sensitive Receptors

Some exposed population groups—including children, and people who are elderly or ill—can be especially vulnerable to airborne chemicals and irritants, and are termed "sensitive receptors." In addition,

due to sustained exposure durations, all persons located within residential areas are considered sensitive receptors. In general, sensitive receptor locations could include, but are not limited to: schools, hospitals, convalescence homes, residential uses, places of worship, libraries, offices, city and county buildings, and outdoor recreational areas.

Due to the remote nature of much of the IC Project Alignment, sensitive receptor locations are widely scattered along the alignment. Section 4.13, Noise; Section 4.15, Public Services; and Section 4.16, Recreation, provide descriptions of the locations of residential areas and other sensitive receptors in the vicinity of the IC Project Alignment. Table 4.13-1 lists the distance from sensitive receptor locations to the IC Project Alignment.

4.3.1.6 Ambient Air Quality Standards

The USEPA compares ambient air criteria pollutant measurements with NAAQS to assess the status of air quality of regions within the states. Similarly, the California Air Resources Board (CARB) compares air pollutant measurements in California to CAAQS. Based on these comparisons, regions within the states and California are designated as one of the following categories:

- **Attainment.** A region is designated as attainment if monitoring shows ambient concentrations of a specific pollutant are less than or equal to NAAQS or CAAQS. In addition, areas that have been re-designated from nonattainment to attainment are classified as "maintenance areas" for a 10-year period to ensure that the air quality improvements are sustained.
- **Nonattainment.** If the NAAQS or CAAQS is exceeded for a pollutant, then the region is designated as nonattainment for that pollutant.
- **Unclassifiable.** An area is designated as unclassifiable if the ambient air monitoring data are incomplete and do not support a designation of attainment or nonattainment.

State and federal ambient air quality standards are shown in Table 4.3-1; the attainment status of each CAAQS and NAAQS pollutant is shown in Table 4.3-2.

Presently, the ambient air in areas crossed by the IC Project Alignment is classified by the CARB as nonattainment for O_3 and PM_{10} in all jurisdictions. The ambient air in the area is either unclassified or classified as attainment for all other state-regulated air pollutants.

CARB operates an extensive network of air monitoring stations within California. The monitoring station network provides air quality monitoring data, including real-time meteorological data and ambient pollutant levels, as well as historical data. Table 4.3-3 presents the average ambient pollutant concentrations and the exceedances of state and federal standards that have occurred at the monitoring stations in the Great Basin Valleys Air Basin and Mojave Desert Air Basin from 2015 through 2017, the most recent years for which data are available.

Table 4.3-1: State and Federal Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards	National Standards
Ozone (O_3)	1 Hour	0.09 ppm (180 µg/m3)	—
	8 Hours	0.070 ppm (137 µg/m^3)	0.070 ppm (147 µg/m^3)
Respirable Particulate Matter (PM_{10})	24 Hours	50 µg/m^3	150 µg/m^3
	AAM	20 µg/m^3	—
Fine Particulate Matter ($PM_{2.5}$)	24 Hours	—	35 µg/m^3
	AAM	12 µg/m^3	12.0 µg/m^3
Carbon Monoxide (CO)	8 Hours	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)
	1 Hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)
Nitrogen Dioxide (NO_2)	AAM	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)
	1 Hour	0.18 ppm (339 µg/m^3)	0.100 ppm (188 µg/m^3)
Sulfur Dioxide (SO_2)	24 Hours	0.04 ppm (105 µg/m^3)	0.14 ppm (365 µg/m^3)
	1 Hour	0.25 ppm (655 µg/m^3)	0.075 ppm (196 µg/m^3)

Table 4.3-2: Attainment Status for the GBUAPCD, EKAPCD, and MDAQMD

	California Status			National Status		
Pollutant	GBUAPCD	EKAPCD	MDAQMD[1]	GBUAPCD	EKAPCD	MDAQMD[1]
O_3	Nonattainment	Nonattainment	Nonattainment	Attainment/ Unclassified	Nonattainment	Nonattainment
PM_{10}	Nonattainment	Nonattainment	Nonattainment	Attainment/ Unclassified	Nonattainment	Attainment/ Nonattainment
$PM_{2.5}$	Attainment	Attainment	Unclassified	Attainment/ Unclassified	Attainment/ Unclassified	Attainment/ Unclassified
CO	Attainment	Attainment	Attainment	Attainment/ Unclassified	Attainment/ Unclassified	Attainment/ Unclassified
NO_2	Attainment	Attainment	Attainment	Attainment/ Unclassified	Attainment/ Unclassified	Attainment/ Unclassified
SO_2	Attainment	Attainment	Attainment	Unclassified	Attainment	Unclassified
Pb	Attainment	Attainment	Attainment	Attainment/ Unclassified	Attainment	Attainment/ Unclassified
VRP	Unclassified	Unclassified	Unclassified	No Federal Standard		
Sulfates	Attainment	Attainment	Attainment	No Federal Standard		
H_2S	Attainment	Unclassified	Unclassified	No Federal Standard		

Notes:
1 Does not include the classifications for the Searles Valley Planning Area of MDAQMD as the IC Project Alignment is not located in this area.

Source: https://www.arb.ca.gov/desig/adm/adm.htm

Table 4.3-3: Ambient Air Quality

Pollutant	Air Basin	2015	2016	2017	2015	2016	2017
		# Days > State 1-Hour Standard			Max 1-Hour Observation		
Ozone	Great Basin Valleys	0	0	0	0.076	0.085	0.077
	Mojave Desert	26	25	33	0.132	0.132	0.156
		# Days > State 8-Hour Standard			Max State 8-Hour Average		
Ozone	Great Basin Valleys	3	5	4	0.074	0.079	0.072
	Mojave Desert	82	70	78	0.106	0.110	0.119
		# Days> National 8-Hour Standard			Max State 24-Hour Average		
Ozone	Great Basin Valleys	3	5	2	0.073	0.078	0.072
	Mojave Desert	80	65	75	0.105	0.109	0.118
		# Days>State 24-Hour Standard			Max State 24-Hour Average		
PM_{10}	Great Basin Valleys	21.1	15.5	23.9	677	214	995
	Mojave Desert	6.1	18.9	0	74.9	203.5	85.7

4.3.2 Regulatory Setting

Federal, state, and local regulations were reviewed for applicability to the IC Project.

4.3.2.1 Federal

4.3.2.1.1 Clean Air Act

The 1970 Federal Clean Air Act (CAA) established ambient air quality standards (AAQS) for six major pollutants—O_3, particle pollution (PM_{10}, $PM_{2.5}$), CO, NO_2, SO_2, and lead. These six air pollutants are known to have adverse impacts on human health and the environment. To protect human health and the environment, the U.S. EPA set primary and secondary maximum ambient thresholds for criteria pollutants. The primary thresholds were set to protect human health—particularly for children and the elderly, as well as for individuals who suffer from chronic lung conditions (e.g., asthma and emphysema). The secondary standards were set to protect the natural environment and prevent further deterioration of animals, crops, vegetation, and buildings. The NAAQS is comprised of the combined primary and secondary standards set by the EPA. The 1977 CAA Amendments required each state to develop and maintain a State Implementation Plan (SIP) for each criteria pollutant that exceeds the NAAQS for that pollutant. The SIP serves as a tool to reduce pollutants that are known to cause impacts if they exceed ambient thresholds and to achieve compliance with the NAAQS. In 1990, the CAA was amended to strengthen regulation of both stationary and mobile emission sources for the criteria pollutants.

In July 1997, the U.S. EPA developed new health-based NAAQS for O_3 and PM_{10}. However, these standards were not fully implemented until 2001, after the resolution of several lawsuits. The new federal O_3 standard of 0.080 parts per million (ppm), established in 1997, was based on a longer averaging period (8 hours versus 1 hour), recognizing that prolonged exposure to O_3 is more damaging. In March 2008, the EPA further lowered the 8-hour O_3 standard from 0.080 ppm to 0.075 ppm, and then lowered it again in 2015 to 0.07 ppm. The new federal PM standard is based on finer particles (2.5 microns and smaller versus 10 microns and smaller), recognizing that finer particles may have a higher residence time in the lungs and contribute to greater respiratory illness. In February 2007, the NAAQS for NO_2 was amended to lower the existing 1-hour standard of 0.25 ppm to 0.18 ppm, which is not to be exceeded; and established a new annual standard of 0.030 ppm, which is also not to be exceeded. The NAAQS are listed in Table 4.3-1.

4.3.2.2 State

4.3.2.2.1 California Clean Air Act

The California Clean Air Act (CCAA) requires air districts to develop and implement strategies to attain CAAQS. For some pollutants, the California standards are more stringent than the national standards. Regional air quality management districts are mandated to prepare an air quality plan specifying how federal and state standards would be met. The CARB enforces the CAAQS and works with the state's Office of Environmental Health Hazard Assessment in identifying toxic air contaminants (TACs) and enforcing rules related to TACs, including the Air Toxic Hot Spots Information and Assessment Act of 1987. Enacted to identify TAC hot spots where emissions from specific sources may expose individuals to an elevated risk of adverse health effects, this act requires that businesses or other establishments identified as significant sources of toxic emissions provide the affected population with information about health risks posed by the emissions. CARB also regulates mobile emission sources in California (e.g., construction equipment, trucks, and automobiles) and oversees the air districts. Relevant programs related to the oversight of mobile source emissions include the Off-Road and On-Road Mobile Sources Emission Reduction Programs, the Portable Equipment Registration Program (PERP), and the Airborne Toxic Control Measure for Diesel Particulate Matter (DPM) from Portable Engines. The Mobile Sources Emission Reduction programs are aimed at reductions of PM_{10}, CO, NO_x, and VOCs. CARB has also adopted specific control measures for the reduction of DPM from off-road, in-use diesel vehicles (rated 25 horsepower and higher), such as backhoes, bulldozers, and earthmovers used in construction projects. Additional DPM control measures are also in place for heavy-duty, on-road diesel trucks operated by public utilities and municipalities. The PERP and Airborne Toxic Control Measure for DPM from Portable Engines provide for statewide registration and control of DPM from portable engines rated 50 horsepower and higher.

4.3.2.3 Local

The California Public Utilities Commission (CPUC) has sole and exclusive state jurisdiction over the siting and design of the IC Project. Pursuant to CPUC General Order 131-D (GO 131-D), Section XIV.B, "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the CPUC's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters." Consequently, public utilities are directed to consider local regulations and consult with local agencies, but the counties' and cities' regulations are not applicable as the counties and cities do not have jurisdiction over the IC Project. The IC Project, however, must comply with applicable local air district regulations as discussed below.

The applicable air districts are responsible for regulating emissions from stationary sources in their air districts. The air districts are also responsible for developing, updating, and implementing the Air Quality Management Plans (AQMPs) for their air basins. An AQMP is prepared and implemented by an air pollution district for a county or region designated as being in "nonattainment" of the national and/or California ambient air quality standards.

4.3.2.3.1 Eastern Kern Air Pollution Control District

The EKAPCD seeks to attain and maintain NAAQS and CAAQS and to ensure air pollutants do not pose a nuisance or significant health threat. In 2017, the EKAPCD adopted two plans to address EKAPCD's nonattainment status for ozone: Reasonably Available Control Technology (RACT) State Implementation

Plan (SIP) and Ozone Attainment Plan. The EKAPCD has established the following rules, among others, to regulate air quality:

Rule 401 and Rule 402. These rules limit the emissions of visible particulate matter and wind erosion or fugitive dust from material handling and hauling, bulk storage, earthmoving, construction, and demolition. These rules prohibit any emissions of fugitive dust from construction, demolition, or other operations that remain visible in the atmosphere beyond the property line of the site of the source, except along roadways.

Rule 419. This rule prevents public nuisances.

4.3.2.3.2 Great Basin Unified Air Pollution Control District

The GBUAPCD is responsible for regulating emissions from stationary sources. GBUAPCD monitors air quality within the district and maintains an air monitoring network with monitoring stations through the GBVAB. The GBUAPCD seeks to pursue quantitative reductions in the amount of air pollutants being released within the district. The GBUAPCD has established the following rules, among others, to regulate air quality:

Rule 401—Fugitive Dust. This rule requires reasonable precaution measures to prevent visible particulate matter from being airborne, under normal wind conditions, beyond the source from which the emission originates.

Rule 402—Nuisance. This rule prohibits the discharge of air contaminants, from any source, or other materials that cause injury, detriment, nuisance or annoyance to the public.

Rule 404-A—Particulate Matter. This rule regulates the allowable concentration of particulate matter discharged per standard dry cubic foot of exhaust gas. Concentrations may not exceed 0.3 grains per standard dry cubic foot of exhaust gas.

Rule 404-B—Oxides of Nitrogen. This rule regulates the allowable concentration of nitrogen oxides emitted in exhaust fumes to not exceed 250 parts per million by volume.

Rule 416—Sulfur Compounds and Nitrogen Oxides. This rule controls the discharge of sulfur compounds and nitrogen oxides. Sulfur compounds may not exceed 0.2 percent by volume, and nitrogen oxides may not exceed 140 pounds per hour.

Rule 417—Organic Solvents. This rule prohibits the discharge of more than 15 pounds of organic materials into the atmosphere in one day, or more than 3 pounds in any one hour.

Rule 431—Particulate Emissions. The purpose of this rule is to improve and maintain the level of air quality in GBUAPCD communities by controlling the emissions of particulate matter, thereby protecting and enhancing the health of its citizens. The rule designates the town of Mammoth Lakes as a "High Road Dust Area (HRDA)," or a community where the GBUAPCD has determined that dust on roads contributes to exceedances of the state or federal 24-hour $PM_{2.5}$ or PM_{10} standards previously mentioned. This rule does not identify any further HRDAs but identifies the Board of the GBUAPCD as having the power to determine whether any additional communities qualify for HRDA status. The rule also calls for paved-road dust-reduction measures, as well as pollution-reduction education programs.

4.3.2.3.3 Mojave Desert Air Quality Management District

The MDAQMD stipulates rules and regulations with which all projects must comply. In addition, the MDAQMD provides methodologies for analyzing a project's impacts under CEQA. The following rules and regulations apply to all sources within the MDAQMD's jurisdiction.

Rule 401—Visible Emissions. A person shall not discharge into the atmosphere from any single source of emission whatsoever any air contaminant for a period or periods aggregating more than three minutes in any one hour which is:

(a) As dark or darker in shade as that designated No. 1 on the Ringelmann Chart, as published by the United States Bureau of Mines, or

(b) Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in subsection (a) of this rule

Rule 402—Nuisance. A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.

Rule 403—Fugitive Dust. This Rule includes the following restrictions:

(a) A person shall not cause or allow the emissions of fugitive dust from any transport, handling, construction or storage activity so that the presence of such dust remains visible in the atmosphere beyond the property line of the emission source. (Does not apply to emissions emanating from unpaved roadways open to public travel or farm roads. This exclusion shall not apply to industrial or commercial facilities).

(b) A person shall take every reasonable precaution to minimize fugitive dust emissions from wrecking, excavation, grading, clearing of land and solid waste disposal operations.

(c) A person shall not cause or allow particulate matter to exceed 100 micrograms per cubic meter when determined as the difference between upwind and downwind samples collected on high volume samplers at the property line for a minimum of five hours.

(d) A person shall take every reasonable precaution to prevent visible particulate matter from being deposited upon public roadways as a direct result of their operations. Reasonable precautions shall include, but are not limited to, the removal of particulate matter from equipment prior to movement on paved streets or the prompt removal of any material from paved streets onto which such material has been deposited.

(e) Subsections (a) and (c) shall not be applicable when the wind speed instantaneously exceeds 40 kilometers (25 miles) per hour, or when the average wind speed is greater than 24 kilometers (15 miles) per hour. The average wind speed determination shall be on a 15 minute average at the nearest official air-monitoring station or by wind instrument located at the site being checked.

Rule 403.2—Fugitive Dust Control for the Mojave Desert Planning Area. The purpose of this Rule is to ensure that the NAAQS for PM_{10} will not be exceeded due to anthropogenic sources of fugitive dust within the Mojave Desert Planning Area (MDPA); and to implement the control measures contained in the Mojave Desert Planning Area Federal PM_{10} Attainment Plan.

The requirements of this Rule shall apply to owners or operators of sources in the following categories within the MDPA:

(i) Construction/Demolition Activity;
(ii) Heavily Traveled Publicly Maintained Unpaved Roads;
(iii) Weed suppression activity;
(iv) Limestone processing activity in the Lucerne Valley Area; and
(v) Activities on Bureau of Land Management (BLM) land.

4.3.3 Significance Criteria

The significant criteria for assessing the impacts to air quality come from the California Environmental Quality Act (CEQA) Environmental Checklist. According to the CEQA Checklist, a project causes a potentially significant impact if it would:

- Conflict with or obstruct implementation of the applicable air quality plan
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation
- Result in a cumulatively considerable net increase of any criteria pollutant for which the Proposed Project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for O3 precursors)
- Expose sensitive receptors to substantial pollutant concentrations
- Create objectionable odors affecting a substantial number of people

4.3.3.1 Thresholds for Construction Emissions

Section 15002 of the CEQA Guidelines defines a significant effect on the environment as "a substantial adverse change in the physical condition which exists in the area affected by the proposed project." The impact of a project to air quality is determined by examining the types and levels of emissions generated by the IC Project and its impact on factors that affect air quality. As such, projects should be evaluated in terms of identified air pollution thresholds.

4.3.3.1.1 Great Basin Unified Air Pollution Control District

The GBUAPCD has no significance thresholds particular to its air basin. CEQA, however, allows reliance on standards or thresholds promulgated by other agencies. As such, this analysis utilizes the values developed by the EKAPCD based on location, topography and attainment status.

4.3.3.1.2 Eastern Kern Air Pollution Control District

The EKAPCD Guidelines for Implementation of CEQA provide significance thresholds. If the thresholds are exceeded, a potentially significant impact could result. A project would have a significant air quality impact on the environment, if it would:

- Emit criteria air pollutants levels exceeding the trigger levels in EKAPCD Rule 210.1 of: 15 tons per year of PM_{10}; 27 tons per year of SO_x; or 25 tons per year of VOC or NO_x;
- Emit more than 137 pounds per day of NO_x or VOC from motor vehicle trips (indirect sources only);
- Cause or contribute to an exceedance of any California or National Ambient Air Quality Standard;
- Exceed the District health risk public notification thresholds; or
- Be inconsistent with adopted federal and state Air Quality Attainment Plans.

4.3.3.1.3 Mojave Desert Air Quality Management District

The MDAQMD California Environmental Quality Act (CEQA) And Federal Conformity Guidelines notes, in relevant part:

> Any project is significant if it triggers or exceeds the most appropriate evaluation criteria. The District will clarify upon request which threshold is most appropriate for a given project; in general, the emissions comparison (criteria number 1) is sufficient:
>
> - Generates total emissions (direct and indirect) in excess of the thresholds given in Table 6;
> - Generates a violation of any ambient air quality standard when added to the local background;

- Does not conform with the applicable attainment or maintenance plan(s)

…

A significant project must incorporate mitigation sufficient to reduce its impact to a level that is not significant. A project that cannot be mitigated to a level that is not significant must incorporate all feasible mitigation. Note that the emission thresholds are given as a daily value and an annual value, so that multi-phased project (such as project with a construction phase and a separate operational phase) with phases shorter than one year can be compared to the daily value.

Table 6 – Significant Emissions Thresholds

Criteria Pollutant	Annual Threshold (tons)	Daily Threshold (pounds)
Greenhouse Gases (CO_2e)	100,000	548,000
Carbon Monoxide (CO)	100	548
Oxides of Nitrogen (NO_x)	25	137
Volatile Organic Compounds (VOC)	25	137
Oxides of Sulfur (SO_x)	25	137
Particulate Matter (PM_{10})	15	82
Particulate Matter ($PM_{2.5}$)	12	65
Hydrogen Sulfide (H_2S)	10	54
Lead (Pb)	0.6	3

4.3.4 Impact Analysis

4.3.4.1 Would the project conflict with or obstruct implementation of the applicable air quality plan?

4.3.4.1.1 Construction

No Impact. The MDAQMD, GBUAPCD, EKAPCD are the primary agencies responsible for managing local air quality and administering California and federal air pollution control programs ensuring attainment and maintenance of the ambient air quality standards. To this end, these districts have each established an air quality management plan (AQMP). Generally, a project may be inconsistent with an AQMP or applicable attainment plan if it could cause population and/or employment growth or growth in vehicle-miles traveled in excess of the growth forecasts included in an applicable AQMP or attainment plan. Because construction of the IC Project would not result in population growth, the IC Project would not conflict with the growth projections used in the development of the applicable AQMPs. Please see Section 4.14, Population and Housing, for a discussion of economic and population growth.

Furthermore, the emissions associated with IC Project construction would be temporary and would represent a very small fraction of the regional emission inventories included in the applicable AQMPs.

Construction of the IC Project would be performed in compliance with applicable air district rules and regulations; this would ensure that activities are consistent with air district efforts to achieve attainment and maintenance of the standards. IC Project-related emissions occurring in compliance with these rules and regulations would not conflict with or obstruct implementation of any applicable air quality plan.

Because the IC Project's construction emissions are not expected to substantially contribute to the regional emissions and would not conflict with the growth projections in the applicable AQMPs, and because construction of the IC Project would be performed in compliance with applicable air district rules and regulations, the IC Project would not conflict with or obstruct implementation of the applicable AQMPs, and there would be no impact.

4.3.4.1.2 Operations

No Impact. As presented in Chapter 3, SCE is currently performing operation and maintenance (O&M) activities, including inspections, along the subtransmission lines that would be rebuilt and reconductored under the IC Project. No material changes in O&M activities or the locations of these activities are anticipated with implementation of the IC Project, and therefore no impacts would be realized under this criterion during operations and maintenance.

4.3.4.2 Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

4.3.4.2.1 Construction

Less than Significant Impact with Mitigation. Emissions during the construction of the IC Project would include criteria air pollutants that could contribute to existing or projected violations of the ambient air quality standards for ozone and PM_{10}. The IC Project would result in air pollutant emissions from construction equipment and material handling at the various work areas, from off-site motor vehicle trips carrying workers and materials, and from helicopter use. Motor vehicles, helicopters, off-road equipment, and other construction equipment would directly emit criteria air pollutants and toxic air contaminants.

Emissions from ground construction activities were estimated using the California Emissions Estimator Model (CalEEMod) v2016.3.2. CalEEMod uses widely accepted models for emission estimates and default data from sources such as USEPA AP-42 emission factors, CARB vehicle emission models, and California Energy Commission and other agency studies. (California Air Pollution Control Officers Association [CAPCOA] 2013) Helicopter emissions were estimated based on the Swiss Federal Office of Civil Aviation (FOCA) Guidance on the Determination of Helicopter Emissions. (FOCA 2015) The modeling results are provided in Appendix F: Air Quality Calculations.

Table 4.3-4 summarizes the estimated construction emissions for the IC Project taking into account compliance with applicable local air district regulations, which would reduce construction-related impacts to air quality; these emissions would be reduced further through implementation of APM AIR-1, which stipulates the use of Tier 4 engines.

Table 4.3-4: Estimated Annual Construction Emissions, By District

District	VOC	NOx	CO	SO_2	PM_{10}	$PM_{2.5}$
GBUAPCD						
Annual Emissions (Tons/yr)	1.5	9.3	7.8	0	8.2	1.1
Significance Threshold (Tons/yr)	25	25	None	27	15	None
Exceedance?	**No**	**No**	**No**	**No**	**No**	**No**
MDAQMD						
Annual Emissions (Tons/yr)	2.8	16.8	14.1	0.1	14.9	2.1
Significance Threshold (Tons/yr)	25	25	100	25	15	12
Exceedance?	**No**	**No**	**No**	**No**	**No**	**No**
EKAPCD						
Annual Emissions (Tons/yr)	0.5	2.9	2.4	0	2.6	0.4
Significance Threshold (Tons/yr)	25	25	None	27	15	None
Exceedance?	**No**	**No**	**No**	**No**	**No**	**No**

As shown in Table 4.3-4, the IC Project's total annual emissions would be below all applicable significance threshold values, and therefore the impact would be less than significant with implementation of APM AIR-1.

4.3.4.2.2 Operations

Less than Significant Impact. As presented in Chapter 3, SCE is currently performing operation and maintenance (O&M) activities, including inspections, along the subtransmission lines that would be rebuilt and reconductored under the IC Project. No material changes in O&M activities or the locations of these activities are anticipated with implementation of the IC Project. These O&M activities, as described in *Chapter 3—Project Description*, are infrequent and small in scope, and thus would not contribute substantially to an existing air quality violation and would not exceed EKAPCD and MDAQMD significance thresholds. Therefore, impacts would be less than significant.

4.3.4.3 Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the Proposed Project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for O3 precursors)?

4.3.4.3.1 Construction

Less than Significant Impact with Mitigation. The IC Project is located in air basins that are classified as nonattainment for PM_{10}. As shown in Table 4.3-4, construction emissions would not exceed the MDAQMD significance threshold for PM_{10}. Therefore, construction of the IC Project would not result in a significant and unavoidable impact, and would not result in a cumulatively considerable net increase of a criteria pollutant. Impacts would be less than significant with implementation of APM AIR-1.

4.3.4.3.2 Operations

No Impact. As presented in Chapter 3, SCE is currently performing operation and maintenance (O&M) activities, including inspections, along the subtransmission lines that would be rebuilt and reconductored under the IC Project. No material changes in O&M activities or the locations of these activities are anticipated with implementation of the IC Project, and therefore O&M activities would not result in any increase in criteria pollutants. Therefore, no impacts would be realized under this criterion during operations and maintenance.

4.3.4.4 Would the project expose sensitive receptors to substantial pollutant concentrations?

4.3.4.4.1 Construction

Less than Significant Impact. Sensitive receptors in the vicinity of the IC Project Alignment could be exposed to increases in pollutants as a result of the fugitive dust released during excavation activities and vehicle travel on unpaved roads and as a result of the use of internal combustion engines on construction equipment. Pollutant emissions would be distributed over the construction period and across the IC Project Alignment, and thus would not be concentrated in any one area. As a result, the actual emissions that would be created at a single site, and thus at a single sensitive receptor, would be dramatically lower than the overall IC Project emissions.

In addition, compliance with applicable local air district regulations would reduce emissions from off-road equipment use. Impacts would be less than significant due to the separation between construction

activities and sensitive receptors, compliance with local air district regulations, and because sensitive receptors would only be exposed for short periods of time.

4.3.4.4.2 Operations

No Impact. As presented in Chapter 3, SCE is currently performing operation and maintenance (O&M) activities, including inspections, along the subtransmission lines that would be rebuilt and reconductored under the IC Project. No material changes in O&M activities or the locations of these activities are anticipated with implementation of the IC Project, and therefore no impacts would be realized under this criterion during operations and maintenance.

4.3.4.5 Would the project create objectionable odors affecting a substantial number of people?

4.3.4.5.1 Construction

Less than Significant Impact. Potential odor sources associated with construction of the IC Project include equipment exhaust. These emissions would be short-term, distributed throughout the alignment, and intermittent in nature, would disperse quickly, and would cease upon completion of construction. Because odors would be temporary and would disperse rapidly with distance from the source, and because the majority of construction activities would occur in unoccupied, open space areas, construction-generated odors would not result in the frequent or long-term exposure of a substantial number of people to objectionable odorous emissions. Therefore, impacts would be less than significant.

4.3.4.5.2 Operations

Less than Significant Impact. Potential odor sources associated with O&M activities include equipment exhaust. These emissions would be short-term, limited to the location of the O&M activity and intermittent in nature, would disperse quickly, and would cease upon completion of the O&M activity at a given location. Because odors would be temporary and would disperse rapidly with distance from the source, and because the majority of O&M activities would occur in unoccupied, open space areas, O&M-generated odors would not result in the frequent or long-term exposure of a substantial number of people to objectionable odorous emissions. Therefore, impacts would be less than significant.

4.3.5 Applicant Proposed Measures

As described above, SCE would comply with local air quality district regulations that include but are not limited to rules prohibiting the discharge of air contaminants that cause injury, detriment, nuisance or annoyance to the public; controlling the emission of particulate matter; implementing paved-road dust-reduction measures; and requiring taking reasonable precautions to minimize fugitive dust emissions from excavation, grading, and clearing of land. Compliance with these regulations would reduce emissions of PM_{10} to a level below the applicable significance threshold. Further, SCE would implement APM AIR-1; the full text of the APM is presented in Section 5.1.

4.3.6 Alternatives

Alternatives to the IC Project are addressed in Section 5.2, Description of Project Alternatives and Impact Analysis.

4.3.7 References

Eastern Kern Air Pollution Control District. 2012. Addendum to CEQA Guidelines. Addressing GHG Emission Impacts for Stationary Source Projects When Serving as Lead CEQA Agency. Available at http://www.kernair.org/Documents/CEQA/EKAPCD%20CEQA%20GHG%20Policy%20Adopted%203-8-12.pdf.

Great Basin Unified Air Pollution Control District. 2016. Rules and Regulations for the Great Basin Unified Air Pollution Control District. Available at https://www.gbuapcd.org/Docs/PermittingAndRules/RulesAndRegulations/GBUAPCD_Rules%20and%20Regulations.pdf.

Mojave Desert Air Quality Management District. 2016. California Environmental Quality Act (CEQA) And Federal Conformity Guidelines. Available at http://mdaqmd.ca.gov/home/showdocument?id=192.