

## 4.2 Air Quality

This section describes the environmental and regulatory settings and discusses impacts associated with the construction and operation of the Mesa 500-kilovolt (kV) Substation Project (proposed project) proposed by Southern California Edison Company (SCE, or the applicant) with respect to air quality resources. The South Coast Air Quality Management District (SCAQMD) submitted a letter during the scoping period requesting that the Environmental Impact Report (EIR) include an analysis based on the California Emission Estimator Model (CalEEMod); discuss the potential air quality impacts associated with construction and operation; analyze regional and local air quality impacts in comparison with SCAQMD thresholds of significance; include dispersion modeling, if necessary, as an alternative to the use of localized significance thresholds; include a mobile source health risk assessment; and include an analysis of all toxic air contaminant impacts due to the use of equipment potentially generating such air pollutants.

The SCAQMD also recommended the use of specific guidance and handbooks for the air quality analysis and for identifying possible mitigation measures.

### 4.2.1 Environmental Setting

Air quality is dependent on the quantities of air pollutants emitted from human-made and natural sources, as well as surface topography and prevailing meteorological conditions. California is divided into 15 air basins. The proposed project would be located in portions of Los Angeles County and Orange County under the jurisdiction of the South Coast Air Basin (SCAB).

#### 4.2.1.1 Climate

##### South Coast Air Basin

The distinctive climate of the SCAB is determined by its terrain and geographical location. The basin is made up of a coastal plain with connecting broad valleys and low hills and is bounded by the Pacific Ocean in the southwest quadrant. High mountains form the remainder of the perimeter of the basin. The general region lies in the semi-permanent high pressure zone of the eastern Pacific Ocean. As a result, the climate is mild, tempered by cool sea breezes. This usually mild climate is interrupted infrequently by periods of extremely hot weather, winter storms, or Santa Ana winds. Summer wind speeds average slightly higher than winter wind speeds. Coastal wind speeds average about 2 miles per hour higher than other parts of the basin (SCAQMD 1993).

#### 4.2.1.2 Ambient Air Quality

The topography and climate of Southern California combine to make the SCAB an area of high air pollution potential. During the summer months, a warm air mass frequently descends over the cool, moist marine layer produced by the interaction between the ocean's surface and the lowest layer of the atmosphere. The warm upper layer forms a cap over the cool marine layer and inhibits the pollutants in the marine layer from dispersing upward. Light winds during the summer can also further limit ventilation. Additionally, abundant sunlight triggers the photochemical reactions that produce ozone and most particulate matter (SCAQMD 2013).

1 **Air Pollutants**

2 The United States Environmental Protection Agency (EPA) has set National Ambient Air Quality  
3 Standards (NAAQS) for widespread pollutants from numerous and diverse sources considered  
4 harmful to public health and the environment. Primary standards set limits to protect public health,  
5 including the health of “sensitive” populations such as asthmatics, children, and the elderly.  
6 Secondary standards set limits to protect public welfare, including protection against visibility  
7 impairment and damage to animals, crops, vegetation, and buildings. The EPA periodically reviews  
8 the standards, as well as the science upon which they are based. The EPA has set NAAQS for seven  
9 principal pollutants, which are called “criteria” pollutants:

10

- 11 • Carbon monoxide (CO)
- 12 • Lead
- 13 • Nitrogen dioxide (NO<sub>2</sub>)
- 14 • Ozone
- 15 • Particulate matter less than or equal to 10 microns in diameter (PM<sub>10</sub>)
- 16 • Particulate matter less than or equal to 2.5 microns in diameter (PM<sub>2.5</sub>)
- 17 • Sulfur dioxide (SO<sub>2</sub>)

18

19 Ozone is not emitted directly from emission sources; rather, it is created near ground level by a  
20 chemical reaction between oxides of nitrogen (NO<sub>x</sub>) and reactive organic gases (ROGs) in the  
21 presence of sunlight. As a result, NO<sub>x</sub> and ROGs are often referred to as ozone precursors and are  
22 regulated as a means to prevent ground-level ozone formation. ROGs are sometimes also referred  
23 to as volatile organic compounds (VOCs).

24

25 The State of California has established California Ambient Air Quality Standards (CAAQS) for these  
26 criteria pollutants, as well as ambient air quality standards for sulfates, hydrogen sulfide (H<sub>2</sub>S),  
27 vinyl chloride, and visibility-reducing particles (VRPs). NAAQS and CAAQS are summarized in Table  
28 4.2-1.

29

**Table 4.2-1 Summary of National and California Ambient Air Quality Standards**

Pollutant	Averaging Time	NAAQS <sup>(1)</sup>		CAAQS <sup>(2)</sup>
		Primary	Secondary	
CO	8-hour	9 ppm	-	9 ppm
	1-hour	35 ppm	-	20 ppm
Lead	3-month (rolling average)	0.15 µg/m <sup>3</sup>	0.15 µg/m <sup>3</sup>	-
	Quarterly	-	-	-
	30-day	-	-	1.5 µg/m <sup>3</sup>
NO <sub>2</sub>	Annual	0.053 ppm	0.053 ppm	0.030 ppm
	1-hour	0.100 ppm <sup>(3)</sup>	-	0.18 ppm
Ozone	8-hour	0.075 ppm <sup>(4)</sup>	0.075 ppm <sup>(4)</sup>	0.070 ppm
	1-hour	-	-	0.09 ppm
PM <sub>10</sub>	Annual	-	-	20 µg/m <sup>3</sup>
	24-hour	150 µg/m <sup>3</sup>	150 µg/m <sup>3</sup>	50 µg/m <sup>3</sup>
PM <sub>2.5</sub>	Annual	12.0 µg/m <sup>3</sup>	15.0 µg/m <sup>3</sup>	12 µg/m <sup>3</sup>
	24-hour	35 µg/m <sup>3</sup>	35 µg/m <sup>3</sup>	-

**Table 4.2-1 Summary of National and California Ambient Air Quality Standards**

Pollutant	Averaging Time	NAAQS <sup>(1)</sup>		CAAQS <sup>(2)</sup>
		Primary	Secondary	
SO <sub>2</sub>	Annual	-	-	-
	24-hour	-	-	0.04 ppm
	3-hour	-	0.5 ppm	-
	1-hour	0.075 ppm <sup>(5)</sup>	-	0.25 ppm
Sulfates	24-hour	-	-	25 µg/m <sup>3</sup>
H <sub>2</sub> S	1-hour	-	-	0.03 ppm
Vinyl chloride	24-hour	-	-	0.01 ppm
VRP	8-hour	-	-	See note below <sup>(6)</sup>

Sources: EPA 2014; CARB 2014

Notes:

- (1) NAAQS (other than ozone, PM<sub>10</sub> and PM<sub>2.5</sub>, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth-highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard. For PM<sub>10</sub>, the 24-hour standard is not to be exceeded more than once per year on average over 3 years. The 24-hour standard is attained when the 3-year average of the weighted annual mean at each monitor within an area does not exceed 150 µg/m<sup>3</sup>. For PM<sub>2.5</sub>, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, do not exceed 35 µg/m<sup>3</sup>. The annual standard is attained when the 3-year average of the weighted annual mean at single or multiple community-oriented monitors does not exceed 12 µg/m<sup>3</sup>.
- (2) Standards for ozone, CO (except Lake Tahoe), SO<sub>2</sub> (1- and 24-hour), NO<sub>2</sub>, PM<sub>10</sub>, PM<sub>2.5</sub>, and visibility-reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded.
- (3) The 3-year average of the 98<sup>th</sup> percentile of the daily maximum 1-hour average must not exceed 0.100 ppm.
- (4) 2008 standard. The 3-year average of the 4<sup>th</sup> highest daily maximum 8-hour average concentration over each year must not exceed 0.075 ppm.
- (5) The 3-year average of the 99<sup>th</sup> percentile of the daily maximum 1-hour average must not exceed 0.075 ppm.
- (6) Extinction coefficient of 0.23 per kilometer—visibility of 10 miles or more due to particles when relative humidity is less than 70 percent.

Key:

- µg/m<sup>3</sup> micrograms per cubic meter
- CAAQS California Ambient Air Quality Standards
- CO carbon monoxide
- H<sub>2</sub>S hydrogen sulfide
- NAAQS National Ambient Air Quality Standards
- NO<sub>2</sub> nitrogen dioxide
- PM<sub>10</sub> particulate matter less than or equal to 10 microns in diameter
- PM<sub>2.5</sub> particulate matter less than or equal to 2.5 microns in diameter
- ppm parts per million
- SO<sub>2</sub> sulfur dioxide
- VRP visibility-reducing particles

1  
2 SCAQMD is the local air pollution control agency for the SCAB. The SCAQMD operates 38 permanent  
3 multi-pollutant monitoring stations, and four single pollutant source impact air monitoring within  
4 its jurisdiction (SCAQMD 2014a).

5  
6 The closest air monitoring stations to the proposed project are the Pico Rivera, Los Angeles-North  
7 Main Street, Compton, Pasadena, and Azusa monitoring stations. The Pico Rivera monitoring station  
8 is located approximately 2.7 miles south of the proposed Mesa Substation site, east of the single  
9 transmission line tower replacement in Commerce, and southeast of the proposed streetlight  
10 conversion in Bell Gardens. The Los Angeles-North Main Street monitoring station is located  
11 approximately 6.9 miles northwest of the Mesa Substation. The Compton monitoring station is  
12 located approximately 4.6 miles south of the South Area. The Pasadena monitoring station is  
13 located approximately 2.7 miles west of the Goodrich substation. The Azusa monitoring station is

1 located approximately 9.5 miles east of the Goodrich Substation (SCAQMD 2014a). Historical air  
2 pollutant measurements at these air quality monitoring stations are presented in Table 4.2-2.  
3

**Table 4.2-2 Pollutant Measurements at Air Quality Monitoring Stations in the Proposed Project Area**

Station	Year	Gas Air Pollutant Measurements <sup>(1)</sup> (ppm)								Particulate Air Pollutant Measurements <sup>(2)</sup> (µg/m <sup>3</sup> )			
		CO		NO <sub>2</sub>		Ozone		SO <sub>2</sub>		PM <sub>10</sub>		PM <sub>2.5</sub>	
		1-hr	8-hr	1-hr	Ann	1-hr	8-hr	1-hr	24-hr	24-hr	Ann	24-hr	Ann
Pico Rivera	2013	3.6	2	0.061	-	0.101	0.063	-	-	-	-	29	-
	2012	2.7	2.2	0.055	-	0.106	0.071	-	-	-	-	29	-
	2011	2.7	2.4	0.073	-	0.096	0.061	-	-	-	-	27	-
Los Angeles-North Main Street	2013	2.5	1.8	0.063	-	0.081	0.06	0.006	0.002	57.0	-	12	-
	2012	2.2	1.9	0.069	-	0.093	0.068	0.005	0.002	80.0	-	36.4	-
	2011	2.8	2.4	0.067	-	0.087	0.06	0.009	0.002	53.0	-	30	-
Compton	2013	5.8	3.5	0.062	-	0.090	0.063	-	-	-	-	24	-
	2012	5.2	4	0.063	-	0.086	0.064	-	-	-	-	30	-
	2011	5.8	4.7	0.065	-	0.082	0.061	-	-	-	-	13	-
Pasadena	2013	2.5	1.7	0.060	-	0.099	0.07	-	-	-	-	21	-
	2012	2.4	1.6	0.056	-	0.111	0.08	-	-	-	-	26	-
	2011	2.9	2.2	0.073	-	0.107	0.077	-	-	-	-	30	-
Azusa	2013	3.1	1.7	0.057	-	0.115	0.08	-	-	65.0	-	26	-
	2012	1.8	1.2	0.062	-	0.134	0.079	-	-	78.0	-	25	-
	2011	2.4	1.4	0.065	-	0.111	0.082	-	-	76.0	-	27	-

Sources: EPA 2015b, SCAQMD 2014b.

Notes:

(1) 1-hour CO, 8-hour CO, 1-hour NO<sub>2</sub>, and 1-hour ozone reported as maximum concentrations. 8-hour ozone reported as fourth-highest concentration.

(2) 24-hour PM<sub>10</sub> reported as maximum concentration. 24-hour PM<sub>2.5</sub> reported as 98<sup>th</sup> percentile concentration.

Key:

µg/m<sup>3</sup> micrograms per cubic meter  
ann annual  
CO carbon monoxide  
hr hour  
NO<sub>2</sub> Nitrogen dioxide  
PM<sub>10</sub> particulate matter less than or equal to 10 microns in diameter  
PM<sub>2.5</sub> particulate matter less than or equal to 2.5 microns in diameter  
Ppm parts per million  
SO<sub>2</sub> sulfur dioxide

4

The EPA compares ambient air criteria pollutant measurements to NAAQS to assess the status of the air quality of regions within the United States. Similarly, the California Air Resources Board (CARB) compares air pollutant measurements in California to CAAQS. Based on these comparisons, regions are designated as being in one of the following categories for the criteria air pollutants:

- Attainment.** A region is designated as in “attainment” if monitoring shows that ambient concentrations of a specific pollutant are less than or equal to NAAQS or CAAQS. An attainment area for an NAAQS that has been redesignated from nonattainment is classified as a “maintenance area” for a 10-year period to ensure that the air quality improvements are sustained.
- Nonattainment.** If the NAAQS or CAAQS are exceeded for a pollutant, then the region is designated as in “nonattainment” for that pollutant. Nonattainment areas can be further classified based on the severity of the exceedance of the relevant standard.
- 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.

The attainment status for Los Angeles County under both the NAAQS and CAAQS is summarized in Table 4.2-3. Due to the process involved with assigning designations, a county may be designated as in nonattainment even if there are no exceedances of ambient standards as shown in Table 4.2-1.

**Table 4.2-3 Attainment Status in Los Angeles County**

Pollutant	Attainment Status	
	NAAQS	CAAQS
	Los Angeles County	Los Angeles County
CO	Attainment	Attainment
Lead	Nonattainment	Attainment
NO <sub>2</sub>	Attainment	Attainment
Ozone	Nonattainment (Extreme)	Nonattainment
PM <sub>10</sub>	Attainment/Maintenance	Nonattainment
PM <sub>2.5</sub>	Nonattainment (Moderate)	Nonattainment
SO <sub>2</sub>	Attainment	Attainment
Sulfates	–	Attainment
H <sub>2</sub> S	–	Unclassified
VRP	–	Unclassified

Sources: EPA 2015a, CARB 2015.

Key:

CAAQS California Ambient Air Quality Standards

CO Carbon monoxide

H<sub>2</sub>S hydrogen sulfide

NAAQS National Ambient Air Quality Standards

NO<sub>2</sub> nitrogen dioxide

PM<sub>10</sub> particulate matter less than or equal to 10 microns in diameter

PM<sub>2.5</sub> particulate matter less than or equal to 2.5 microns in diameter

SO<sub>2</sub> sulfur dioxide

VRP visibility-reducing particles

## 21 Toxic Air Contaminants

22 Toxic air contaminants (TACs) are air pollutants suspected or known to cause cancer, birth defects,  
23 neurological damage, or death. With the exception of lead, no ambient air quality standards have

1 been established for TACs. Instead, the compounds are managed on a case-by-case basis, depending  
 2 on the quantity and type of emissions and proximity of potential receptors. Currently, the SCAQMD  
 3 does not require a health risk assessment for TACs for construction projects with duration of less  
 4 than five years (Wong 2015).

5  
 6 **4.2.1.3 Sensitive Receptors**

7  
 8 The SCAQMD defines a sensitive receptor as “a person in the population who is particularly  
 9 susceptible to health effects due to exposure to an air contaminant.” Sensitive receptors are usually  
 10 found in the following places (SCAQMD 2005):  
 11

- Schools
- Playgrounds
- Childcare centers
- Long-term health care facilities
- Residences
- Rehabilitation centers
- Convalescent centers
- Hospitals
- Retirement homes

12  
 13 Table 4.2-4 summarizes the sensitive receptors located within 100 meters of the proposed project,  
 14 which is consistent with SCAQMD determinations.  
 15

**Table 4.2-4 Receptors Located within the Vicinity of the Proposed Project**

Receptor	Jurisdiction(s)	Distance and Direction from Nearest Component
Occupied residences	Monterey Park	280 feet from the proposed Mesa Substation site area
Occupied residences	Monterey Park and Montebello	Adjacent to 220-kV transmission and 66-kV subtransmission line ROWs and Staging Yard 1 near the proposed Mesa Substation
Best Western Plus Markland Hotel <sup>(1)</sup>	Monterey Park	Adjacent to Mesa Substation site
Schurr High School	Montebello	Adjacent to the 220-kV transmission line ROW, Staging Yard 2, and Telecommunications Route 2A southwest of the Mesa Substation site
Occupied residences	Montebello	Adjacent to Telecommunications Route 3
La Merced Intermediate School	Montebello	Adjacent to Telecommunications Route 3
Occupied residences	Montebello	Adjacent to Telecommunications Routes 2A and 2B
Occupied residences	Monterey Park, unincorporated Los Angeles County, and Rosemead	Adjacent to Telecommunications Route 1
Whittier Narrows Recreation Area	unincorporated Los Angeles County	Crossed by Telecommunications Route 1; about 100 feet from Staging Yard 7
Bosque del Rio Hondo (Park)	unincorporated Los Angeles County	Adjacent to Telecommunications Route 1
Triangle Park	Rosemead	100 feet from Telecommunications Route 1
Don Bosco Technical Institute	Rosemead	Adjacent to Telecommunications Route 1

**Table 4.2-4 Receptors Located within the Vicinity of the Proposed Project**

Receptor	Jurisdiction(s)	Distance and Direction from Nearest Component
Three convalescent homes	Rosemead	Approximately 150, 180, and 270 feet from Telecommunications Route 1
Occupied residences	Rosemead	About 220 feet from Staging Yard 6
Occupied residences	Commerce	Approximately 1,000 feet from Staging Yard 5
Occupied residences	Bell Gardens	75 feet from the street light source line conversion from overhead to underground configuration within Loveland Street
Occupied residences	Pasadena	Approximately 350 feet from construction areas at Goodrich Substation; about 140 feet from Staging Yard 4
Pasadena City College Community Education Center	Pasadena	Approximately 300 feet east of the edge of Goodrich Substation
Vina Vieja Park and Alice Frost Kennedy Off-Leash Dog Area	Pasadena	1,200 feet north of Goodrich Substation
Occupied residences	South El Monte	About 220 feet from Staging Yard 7

Note:

(1) A hotel is considered a sensitive receptor because it is in effect a temporary residence.

Key:

kV kilovolt

ROW right-of-way

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## 4.2.2 Regulatory Setting

Ambient air quality and air pollutant emissions from stationary and mobile sources are managed under a framework of federal, state, and local rules and regulations.

### 4.2.2.1 Federal

#### Clean Air Act

The Clean Air Act (CAA; United States Code Title 42, Chapter 85) is the law that defines the EPA's responsibilities for protecting and improving the nation's air quality and the stratospheric ozone layer. The last major change in the law, the CAA Amendments of 1990, was enacted by Congress in 1990. Legislation passed since then has resulted in several minor changes. Under the CAA, the EPA oversees implementation of federal programs for permitting new and modified stationary sources, controlling toxic air contaminants, and reducing emissions from motor vehicles and other mobile sources. The sections of the CAA that are most applicable to the proposed project are Title I (Air Pollution Prevention and Control), Title II (Emission Standards for Mobile Sources), and Title V (Permits).

Title I of the CAA requires establishment of NAAQS, air quality designations, and plan requirements for nonattainment areas. States are required to submit a state implementation plan (SIP) to the EPA for areas in nonattainment with NAAQS. The SIP, which is reviewed and approved by the EPA, must demonstrate how state and local regulatory agencies will institute rules, regulations, and/or other programs to achieve attainment with NAAQS.

1 Title II of the CAA contains a number of provisions regarding mobile sources, including  
2 requirements for reformulated gasoline, new tailpipe emission standards for cars and trucks,  
3 standards for heavy-duty vehicles, and a program for cleaner fleet vehicles.  
4

5 Title V of the CAA requires an operating permit program for larger industrial and commercial  
6 sources that release pollutants into the air. Operating permits include information on which  
7 pollutants are being released, how much may be released, and what steps the source's owner or  
8 operator is required to take to reduce the pollutants. Permits must include plans to measure and  
9 report the air pollutants emitted.  
10

#### 11 **4.2.2.2 State**

##### 12 **California Clean Air Act**

13  
14 The California Clean Air Act outlines a statewide air pollution control program in California. CARB is  
15 the primary administrator of the California Clean Air Act, while local air quality districts administer  
16 air rules and regulations at the regional level. CARB is responsible for establishing the CAAQS,  
17 maintaining oversight authority in air quality planning, developing programs for reducing  
18 emissions from motor vehicles, developing air emission inventories, collecting air quality and  
19 meteorological data, and preparing the SIP.  
20

21 CARB is also responsible for regulations pertaining to TACs. The Air Toxics "Hot Spots" Information  
22 and Assessment Act was enacted in 1987 as a means to establish a formal air toxics emission  
23 inventory risk quantification program. Assembly Bill 2588, as amended, establishes a process that  
24 requires stationary sources to report the type and quantities of certain substances their facilities  
25 routinely emit.  
26

#### 27 **4.2.2.3 Regional and Local**

##### 28 **SCAQMD**

##### 29 ***Air Quality Management Plan***

30  
31 The SCAQMD, along with the Southern California Association of Governments (SCAG), develops  
32 regional air quality plans for the SCAB to ensure attainment of national and state ambient air  
33 quality standards. The Final 2012 Air Quality Management Plan (AQMP) was adopted by the AQMD  
34 Governing Board in February 2013. The plan outlines policies and practices intended to achieve  
35 attainment levels for the federal 24-hour PM<sub>2.5</sub> standard and the federal 8-hour ozone standard  
36 (SCAQMD 2013). Mobile sources are identified as the chief source of NO<sub>x</sub>, an ozone precursor.  
37 Measures in the plan to reduce mobile source emissions are not directly relevant to the proposed  
38 project but instead are used in a more general way to inform the SCAQMD's incentive programs for,  
39 e.g., repowering old equipment with lower-emitting engines. The AQMP also contains regional  
40 transportation control measures such as reduction in NO<sub>x</sub> emissions from cargo handling  
41 equipment and locomotives. Short-term control measures for PM<sub>2.5</sub> are not related to activities  
42 associated with the proposed project but do include measures such as reducing emissions from  
43 residential wood burning, open burning, and ports.  
44

45 The following measures from the AQMP are relevant to the proposed project:  
46

- 47 • **CTS-01 – Further VOC Reductions from Architectural Coatings:** This measure would  
48 regulate VOC emissions from architectural coatings, including by removing an exemption  
49 related to coatings that come in small containers and by requiring the use of application

1 techniques that have a higher transfer efficiency. SCAQMD Rule 1113 regulates this area;  
2 compliance with CTS-01 would occur through amending Rule 1113.

- 3 • **CTS-02 – Further VOC Reductions from Miscellaneous Coatings, Adhesives, Solvents,  
4 and Lubricants:** This measure would regulate VOC emissions from coatings, adhesive,  
5 solvent, and lubricants. SCAQMD Rule 1144 regulates VOCs in metalworking fluids and  
6 direct-contact lubricants; Rule 1168 regulates VOCs in adhesive and sealant applications;  
7 Rule 1171 regulates VOCs used in insolvent cleaning operations. Compliance with CTS-02  
8 would occur through amending the SCAQMD rules.
- 9 • **FUG-01 – VOC Reductions form Vacuum Trucks:** This measure seeks to reduce emissions  
10 from vacuum trucks (which are often used to transport gasoline). The only current  
11 regulation of vacuum truck emissions is related to use of vacuum trucks for tank and  
12 pipeline degassing control devices. Compliance would occur through establishing a new rule  
13 or regulation related to use of control technology.

#### 14 **Rule 403: Fugitive Dust Regulations**

16 The purpose of Rule 403 is to reduce the amount of particulate matter entrained in the ambient air  
17 as a result of human-caused fugitive dust sources by requiring actions to prevent, reduce, or  
18 mitigate fugitive dust emissions. The rule also requires construction activities to use applicable best  
19 available control measures to minimize fugitive dust emissions from a wide variety of construction  
20 activities, including backfilling, clearing, earth-moving activities, stockpiling, and vehicle traffic.

#### 21 **Rule 1166: Volatile Organic Compound Emissions from Decontamination of Soil**

23 Rule 1166 requires that an approved mitigation plan be obtained from SCAQMD prior to excavation  
24 of an underground storage tank or piping which has stored VOCs, excavating or grading soil  
25 containing VOC material, handling or storing VOC-contaminated soil, or the treatment of VOC-  
26 contaminated soil at a facility.

#### 27 **Rule 1403: Asbestos Emissions from Demolition /Renovation Activities**

29 The purpose of Rule 1403 is to limit asbestos emissions from demolition and renovation activities.  
30 Rule 1403 contains specific requirements regarding surveying, notification, scheduling, and  
31 removal procedures if asbestos is found.

#### 32 **County of Los Angeles General Plan**

34 The Air Quality Element of the County of Los Angeles General Plan contains the following goal and  
35 policy relevant to the proposed project (County of Los Angeles 2015):

- 37 • **Goal AQ 1:** *Protection from exposure to harmful air pollutants.*
- 38 • **Policy AQ 1.3:** *Reduce particulate inorganic and biological emissions from construction,*  
39 *grading, excavation, and demolition to the maximum extent feasible.*

#### 40 **Other General Plans**

42 General Plans for the following jurisdictions were also reviewed, but none of the goals and policies  
43 related to air quality contained in these documents were found to be applicable to the proposed  
44 project:

- 46 • City of Bell Gardens (1995) General Plan

- 1 • City of Commerce (2008) General Plan
- 2 • City of Industry (2014) General Plan
- 3 • City of Monterey Park (2000) General Plan
- 4 • City of Montebello (1973) General Plan
- 5 • City of Pasadena (2004) General Plan
- 6 • City of Rosemead (2010) General Plan
- 7 • City of Santa Clarita (2011) General Plan
- 8 • City of South El Monte (2000) General Plan

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### 10 **4.2.3 Impact Analysis**

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#### 12 **4.2.3.1 Methodology and Significance Criteria**

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##### 14 **Methodology**

15 The existing air quality in the proposed project area was evaluated using data obtained from the  
16 SCAQMD's network of air quality monitoring stations. Relevant monitoring data are presented in  
17 Table 4.2-2, above. Recent regulations and guidance from the EPA, CARB, and SCAQMD were also  
18 reviewed.

19

20 Sensitive receptors were determined based on information provided by the applicant and desktop  
21 review of nearby land uses. A sensitive receptor, as defined by SCAQMD, means any residence  
22 including private homes, condominiums, apartments, and living quarters; schools; preschools;  
23 daycare centers; health facilities such as hospitals or retirement and nursing homes; long term care  
24 hospitals; hospices; prisons; and dormitories or similar live-in housing. Sensitive receptors within  
25 100 meters of the proposed project are included in the analysis.

26

27 Construction emissions were estimated with CalEEMod using project-specific information (e.g., the  
28 project's anticipated size, schedule, land use, and construction methods) to simulate the anticipated  
29 PM<sub>10</sub>, PM<sub>2.5</sub>, CO, NO<sub>x</sub>, ROGs, and oxides of sulfur (SO<sub>x</sub>) emissions. Using these data, CalEEMod  
30 calculated the peak daily emissions for a range of pollutants within each year of construction.

31

##### 32 **Significance Criteria**

33 The significance criteria were defined based on the checklist items presented in Appendix G of the  
34 California Environmental Quality Act (CEQA) Guidelines. The proposed project would cause a  
35 significant impact on air quality if it would:

36

- 37 a) Conflict with or obstruct implementation of the applicable air quality plan;
- 38 b) Violate any air quality standard or contribute substantially to an existing or projected air  
39 quality violation;
- 40 c) Result in a cumulatively considerable net increase of any criteria pollutant for which the  
41 project region is nonattainment under an applicable federal or state ambient air quality  
42 standard (including releasing emissions which exceed quantitative thresholds for ozone  
43 precursors);
- 44 d) Expose sensitive receptors to substantial pollutant concentrations; or

e) Create objectionable odors affecting a substantial number of people.

The SCAQMD has adopted significance thresholds in its SCAQMD CEQA Air Quality Handbook for air quality. The SCAQMD's regional significance thresholds present quantitative emissions thresholds by which to evaluate whether a project would have a significant impact on air quality. To determine significance, the quantitative emission thresholds presented in Table 4.2-5 were compared to daily maximum emissions.

**Table 4.2-5 South Coast Air Quality Management District CEQA Air Quality Significance Thresholds**

Threshold Category	Pollutant	Construction	Operations
<b>Mass Daily Thresholds</b>	NO <sub>x</sub>	100 lbs/day	55 lbs/day
	VOC	75 lbs/day	55 lbs/day
	CO	550 lbs/day	550 lbs/day
	PM <sub>10</sub>	150 lbs/day	150 lbs/day
	PM <sub>2.5</sub>	55 lbs/day	55 lbs/day
	Lead	3 lbs/day	3 lbs/day
	SO <sub>x</sub>	150 lbs/day	150 lbs/day
<b>TAC and Odor Thresholds</b>	TACs (including carcinogens and non-carcinogens)	<b>Maximum Incremental Cancer Risk</b> ≥ 10 in 1 million <b>Cancer Burden</b> > 0.5 excess cancer cases (in areas ≥ 1 in 1 million) <b>Hazard Index</b> ≥ 1.0 (project increment)	
	Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402	
<b>Ambient Air Quality Standards</b>	NO <sub>2</sub> <sup>(1)</sup>	<b>1-hour average:</b> 0.18 ppm (State) <b>Annual average:</b> 0.03 ppm (State) and 0.0534 ppm (Federal)	
	PM <sub>10</sub>	<b>24-hour average:</b> 10.4 µg/m <sup>3</sup> <b>Annual average:</b> 1 µg/m <sup>3</sup>	<b>24-hour average:</b> 2.5 µg/m <sup>3</sup> <b>Annual average:</b> 1 µg/m <sup>3</sup>
	PM <sub>2.5</sub>	<b>24-hour average:</b> 10.4 µg/m <sup>3</sup>	<b>24-hour average:</b> 2.5 µg/m <sup>3</sup>
	SO <sub>2</sub>	<b>1-hour averages:</b> 0.25 ppm (State) and 0.075 ppm (Federal - 99th percentile) <b>24-hour average:</b> 0.04 ppm (State)	
	Sulfates	<b>24-hour average:</b> 1 µg/m <sup>3</sup> (State)	
	CO <sup>(1)</sup>	<b>1-hour averages:</b> 20 ppm (State) and 35 ppm (Federal) <b>8-hour average:</b> 9.0 ppm (State/Federal)	
	Lead	<b>30-day average:</b> 1.5 µg/m <sup>3</sup> (State) <b>Rolling 3-month average:</b> 0.15 µg/m <sup>3</sup> (Federal) <b>Quarterly average:</b> 1.5 µg/m <sup>3</sup> (Federal)	

Source: SCAQMD 1993

Note:

<sup>(1)</sup> SCAQMD is in attainment; a project is significant if it causes or contributes to an exceedance of significance thresholds.

Key:

µg/m<sup>3</sup> micrograms per cubic meter

CO carbon monoxide

H<sub>2</sub>S hydrogen sulfide

Lbs pounds

NO<sub>2</sub> nitrogen dioxide

NO<sub>x</sub> oxides of nitrogen

PM<sub>10</sub> particulate matter less than or equal to 10 microns in diameter

PM<sub>2.5</sub> particulate matter less than or equal to 2.5 microns in diameter

ppm parts per million

SCAQMD South Coast Air Quality Management District

SO<sub>2</sub> sulfur dioxide

**Table 4.2-5 South Coast Air Quality Management District CEQA Air Quality Significance Thresholds**

Threshold Category	Pollutant	Construction	Operations
--------------------	-----------	--------------	------------

SO<sub>x</sub> oxides of sulfur  
TAC toxic air contaminant  
VOC volatile organic compounds

1  
2 To further evaluate air quality impacts associated with the construction phase, this analysis  
3 assesses the project’s localized emissions using the SCAQMD’s Final Localized Significance  
4 Threshold (LST) Methodology (SCAQMD 2008). The LST Methodology applies to on-site emissions  
5 and impacts from NO<sub>x</sub>, CO, PM<sub>10</sub>, and PM<sub>2.5</sub> concentrations. The LST Methodology does not apply to  
6 emissions from on-road vehicles. Additionally, the LST Methodology states that “screening  
7 procedures are by design conservative, that is, the predicted impacts tend to overestimate the  
8 actual impacts.” Therefore, the determination made from the LST Methodology provides a means of  
9 conducting a screening analysis to assess whether a significant impact to local air quality would  
10 result from project construction activities.

11  
12 LSTs are determined by geographical zone and distance to sensitive receptors. The proposed  
13 project would be located within Source Receptor Area Zone 11 South San Gabriel Valley. Sensitive  
14 receptors have been identified within approximately 280 feet of the proposed substation. Sensitive  
15 receptors have been identified within approximately 100 feet from transmission ROWs. The LSTs  
16 for the Zone 11-South San Gabriel Valley are shown in Table 4.2-6.

**Table 4.2-6 Localized Significance Thresholds for Zone 11—South San Gabriel Valley**

Distance to Nearest Receptor (meters)	Pollutant (pounds per day)					
	NO <sub>x</sub>	CO	PM <sub>10</sub> — Construction	PM <sub>10</sub> — Operation	PM <sub>2.5</sub> — Construction	PM <sub>2.5</sub> — Operation
	5 acre					
<b>100</b>	184	2,549	59	15	19	5
	5 acre					
<b>280</b>	213	5,442	116	28	53	13

Source: SCAQMD 2009

Key:

CO carbon monoxide  
NO<sub>x</sub> oxides of nitrogen  
PM<sub>10</sub> particulate matter less than or equal to 10 microns in diameter  
PM<sub>2.5</sub> particulate matter less than or equal to 2.5 microns in diameter

18  
19 **4.2.3.2 Applicant Proposed Measures**

20  
21 To reduce air pollutant emissions during construction activities, the applicant has committed to the  
22 following applicant proposed measures (APMs) as part of the design of the proposed project:

- 23  
24 • **APM-AIR-01: Fugitive Dust.** During construction, surfaces disturbed by construction  
25 activities would be covered or treated with a dust suppressant until completion of activities  
26 at each site of disturbance. On-site unpaved roads and off-site unpaved access roads utilized  
27 during construction within the proposed project area would be effectively stabilized to

control dust emissions (e.g., using water or chemical stabilizer/suppressant). On-road vehicle speeds on unpaved roadways would be restricted to 15 miles per hour.

- **APM-AIR-02: Tier 3 Engines.** Off-road diesel construction equipment with a rating between 100 and 750 horsepower (hp) would be required to use engines compliant with EPA Tier 3 non-road engine standards. In the event that a Tier 3 engine is not available, the equipment would be equipped with a Tier 2 engine, and documentation would be provided from a local rental company stating that the rental company does not currently have the required diesel-fueled off-road construction equipment or that the vehicle is specialized and is not available to rent. Similarly, if a Tier 2 engine is not available, that equipment would be equipped with a Tier 1 engine and documentation of unavailability would be provided.

#### 4.2.3.3 Environmental Impacts

##### **Impact AQ-1: Conflict with or obstruct implementation of the SCAQMD Air Quality Management Plan.**

*NO IMPACT*

##### **Construction**

The South Coast AQMP outlines the SCAQMD's long-term strategies for reaching attainment status for the federal 24-hour PM<sub>2.5</sub> standard and the federal 8-hour ozone standard. Most control measures relate either to control of stationary sources or to actions the SCAQMD or other agencies will take to incentivize emissions reductions. Three VOC-reducing policies in the AQMP would relate to construction of the Mesa Substation Project, since the project would involve architectural coatings, adhesives, solvents, and vacuum trucks (for fuel transport). Any of the three relevant AQMD control measures (CTS-01, CTS-02, FUG-01) would be developed into SCAQMD rules or regulations. SCE would be required to comply with all relevant SCAQMD rules and regulations as they become enforceable. Construction of the proposed project would not conflict with or obstruct implementation of the AQMP. There would be no impact.

If soil contamination, including petroleum hydrocarbons, is discovered during ground disturbance activities, SCE would comply with SCAQMD Rule 1166 "Volatile Organic Compound Emissions From Decontamination of Soil". Construction of the proposed project in compliance with Rule 1166 would not conflict or obstruct the implementation of Rule 1166. There would be no impact.

Similarly, if demolition activities result in the discovery of asbestos, SCE would comply with SCAQMD Rule 1403 "Asbestos Removal". Construction of the proposed project in compliance with Rule 1403 would not conflict or obstruct the implementation of Rule 1166. There would be no impact.

##### **Operation and Maintenance**

Operation and maintenance of the Mesa Substation Project would not create permanent full-time or part-time employment positions that would result in an increase in population or require new housing that would result in a new emissions source. Emissions from vehicles used during operation and maintenance would therefore be within the AQMP's projections. Operation and maintenance of the proposed project would not conflict with or obstruct implementation of the AQMP. There would be no impact.

**Impact AQ-2: Violate any air quality standard or contribute substantially to an existing or projected air quality violation.**

*SIGNIFICANT AND UNAVOIDABLE WITH MITIGATION*

**Construction**

Criteria air pollutants would be emitted from the engine exhaust of diesel- and gasoline-fueled on-site construction equipment and on-road vehicles (i.e., delivery trucks and crew vehicles). On-site earth-moving activities (e.g., grading or trenching) and vehicle travel in unpaved areas would also generate fugitive dust. Heavy-duty diesel- and gasoline-powered equipment and vehicles at the work sites would include equipment such as loaders, graders, backhoes, cranes, and trucks. Worker vehicles would include those used by the construction crews to commute to and from proposed project work and staging areas.

The peak daily emissions represent the highest estimated emissions on a given day from all concurrent construction activities. The peak daily emissions anticipated for each year of construction are compared to the SCAQMD daily significance thresholds as summarized in Table 4.2-7. Detailed emission calculations are presented in Appendix C, "Air Calculations."

**Table 4.2-7 Proposed Project Regional Peak Daily Construction Emissions (lbs/day)**

Year	ROG	CO	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
2016	104.78	667.04	1,154.28	1.25	157.93	55.91
2017	91.47	626.22	1,029.54	1.38	180.10	60.74
2018	57.13	335.25	497.91	0.72	52.28	24.73
2019	45.31	358.68	501.94	0.86	94.15	28.48
2020	30.56	162.27	198.01	0.32	34.58	9.90
2021	3.70	35.79	35.61	0.10	24.18	4.05
SCAQMD Significance Threshold	75	550	100	150	150	55
Exceed Significance Thresholds?	Yes	Yes	Yes	No	Yes	Yes

Key:

- CO carbon monoxide
- lbs pounds
- NO<sub>x</sub> oxides of nitrogen
- PM<sub>10</sub> particulate matter less than or equal to 10 microns in diameter
- PM<sub>2.5</sub> particulate matter less than or equal to 2.5 microns in diameter
- ROG reactive organic gases
- SCAQMD South Coast Air Management District
- SO<sub>x</sub> oxides of sulfur

The result of the pollutant criteria analysis indicates that SO<sub>x</sub> emissions would not exceed the SCAQMD daily significance threshold. However, ROG, CO, PM<sub>10</sub>, and PM<sub>2.5</sub> emissions during the first two years of construction (2016 and 2017) would exceed the applicable thresholds and would be significant. In addition, peak daily NO<sub>x</sub> emissions would exceed the applicable thresholds in construction years 2016, 2017, 2018, 2019, and 2020 and would be significant.

To reduce emissions of ROGs, CO, NO<sub>x</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub>, SCE would implement APM-AIR-01 and APM-AIR-02. APM-AIR-01 would result in a reduction of PM<sub>10</sub> and PM<sub>2.5</sub> emissions. The intent of APM-AIR-02 is to reduce ROG, CO, SO<sub>x</sub>, NO<sub>x</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> emissions. APM-AIR-01 would result in emission reductions of these criteria pollutants; however, implementation of APM-AIR-02 would not necessarily result in emission reduction because it allows, in cases where higher-tier engines are unavailable, the use of lower-tier engines. As the use of higher-tier engines is phased in, the

availability of engines differs by geographic region. The applicant has not indicated, nor are there known reliable statistics of, what type of equipment is available with a higher-tier engine. The results of applying these APMs were evaluated using CalEEMod and the resulting emissions for the proposed project are presented in Table 4.2-8. CalEEMod assumptions in Table 4.2-8 include that Tier III engines are available for all engines as required by APM-AIR-02.

**PM<sub>10</sub> and PM<sub>2.5</sub>**

The SCAQMD requires compliance with Rule 403. Implementation of Rule 403 requirements, which include several best management practices to reduce PM<sub>10</sub> and PM<sub>2.5</sub> emissions, would further reduce fugitive dust emissions. Furthermore, APM-AIR-01 would on its own reduce fugitive PM<sub>10</sub> and PM<sub>2.5</sub> emissions by 55 percent, which would be sufficient to drop emissions below significance thresholds. PM<sub>10</sub> and PM<sub>2.5</sub> emissions would be less than significant with implementation of APM-AIR-01. Impacts would be less than significant after APMs.

**Table 4.2-8 Proposed Project Regional Peak Daily Construction Emissions (lbs/day) with Implementation of APM-AIR-01 and APM-AIR-02**

Year	ROG	CO	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
2016	38.15	725.86	899.55	1.25	58.18	29.37
2017	30.98	689.56	574.66	1.38	74.36	32.91
2018	29.00	406.72	320.63	0.72	27.26	16.54
2019	19.45	437.86	366.85	0.86	41.85	19.71
2020	19.39	195.67	140.31	0.32	16.46	8.18
2021	2.35	43.39	29.89	0.10	9.37	2.69
SCAQMD Significance Threshold	75	550	100	150	150	55
Exceed Significance Thresholds?	No	Yes	Yes	No	No	No

Note: Calculations assume Tier III engines are available for all equipment under APM-AIR-02.

Key:

- APM applicant proposed measure
- CO carbon monoxide
- lbs pounds
- NO<sub>x</sub> oxides of nitrogen
- PM<sub>10</sub> particulate matter less than or equal to 10 microns in diameter
- PM<sub>2.5</sub> particulate matter less than or equal to 2.5 microns in diameter
- ROG reactive organic gases
- SCAQMD South Coast Air Management District
- SO<sub>x</sub> oxides of sulfur

**Reactive Organic Gases**

As previously stated, there is a chance that not all equipment would be Tier III and also a chance that no equipment would be Tier III, depending on availability of the equipment. As shown in Table 4.2-8, with implementation of APM-AIR-02 for all equipment, emissions from ROGs would be less than significant. In the worst-case scenario that Tier III equipment is not available, Tier II engines would be used, peak daily ROG emissions would remain significant. Implementation of Mitigation Measure (MM) AQ-1 would further reduce ROG emissions from project construction activities by requiring that all construction equipment greater than 100 hp be compliant with Tier 4 standards and that all construction equipment greater than 50 hp be complaint with Tier 3 off-road emission standards. However, like APM-AQ-02, MM AQ-1 does not guarantee emission reduction due to the ability to utilize lower tier engines in the event that the required higher tier engines are not available. Therefore, emissions from ROGs would be less than significant if engine selection meets the highest tier requirement in APM-AIR-02 and MM AQ-1. However, as previously described, the

1 impact would remain significant if Tier 3 and Tier 4 engines were not available. If sufficient  
2 numbers of Tier 3 and Tier 4 engines are not available, MM AQ-2 would be implemented to offset  
3 additional ROG emissions above the significance threshold. ROG emissions would be less than  
4 significant with implementation of MM AQ-2 if APM AQ-02 and MM AQ-1 do not result in reductions  
5 of ROG to less than significant levels. Impacts would be less than significant after mitigation.  
6

7 **Carbon Monoxide**

8 Peak daily CO emissions after implementation of APM-AIR-02, assuming Tier III engines were  
9 available as per APM-AIR-02, would still be approximately 726 pounds per day and 690 pounds per  
10 day for the years 2016 and 2017, respectively; an increase over emissions prior to implementation  
11 of APM AIR-02. The technology utilized in higher tier engines increases generation of CO. For both  
12 years, peak daily CO emissions would exceed the SCAQMD significance threshold of 550 pounds per  
13 day, the same as for the proposed project prior to implementation of APM-AIR-02. Therefore, the  
14 greater the implementation of APM-AIR-02, the higher the CO emissions. Impacts would still be  
15 significant after implementation of APM-AIR-02. Given that a decrease of NO<sub>x</sub> emissions would  
16 increase CO emissions, CO cannot feasibly be reduced. CO impacts would be significant and  
17 unavoidable.  
18

19 **Nitrogen Oxides**

20 Peak daily NO<sub>x</sub> emissions after full implementation of APM-AIR-02 would reduce NO<sub>x</sub> emissions but  
21 not to below significance, as shown in Table 4.2-8. If Tier III engines are not available, as previously  
22 described, emissions may also still be as shown in Table 4.2-7. Under either scenario, emissions  
23 would still be significant after any degree of implementation of APM-AIR-02. Implementation of MM  
24 AQ-1 would further reduce NO<sub>x</sub> and CO emissions from project construction activities by requiring  
25 that all construction equipment greater than 100 hp be compliant with Tier 4 standards and that all  
26 construction equipment greater than 50 hp be compliant with Tier 3 off-road emissions standards.  
27 However, as previously described, MM AQ-1 does not guarantee emission reduction due to the  
28 ability to utilize lower tier engines in the event that the required higher tier engines are not  
29 available. Emission estimates presented in Table 4.2-9 assume that Tier III and Tier IV engines are  
30 available for all engines as required by MM AQ-1. A summary of the estimates of the construction  
31 emissions after the full application of this mitigation measure is presented in Table 4.2-9. With the  
32 implementation of MM AQ-1, NO<sub>x</sub> emissions during construction would be reduced, but under any  
33 level of higher tier engine implementation they would still be significant in construction years 2016  
34 and 2017.  
35

**Table 4.2-9 Proposed Project Regional Peak Daily Construction Emissions (lbs/day) with  
Implementation of APM-AIR-01, APM-AIR-02, and MM AQ-1**

Year	ROG	CO	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
2016	29.28	725.86	380.87	1.25	58.18	29.37
2017	23.78	689.56	243.31	1.38	74.36	32.91
2018	22.26	406.72	135.75	0.72	27.26	16.54
2019	14.93	437.86	155.32	0.86	41.85	19.71
2020	14.88	195.67	59.41	0.32	16.46	8.18
2021	1.80	43.39	12.66	0.10	9.37	2.69
SCAQMD Significance Threshold	75	550	100	150	150	55

**Table 4.2-9 Proposed Project Regional Peak Daily Construction Emissions (lbs/day) with Implementation of APM-AIR-01, APM-AIR-02, and MM AQ-1**

Year	ROG	CO	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Exceed Significance Thresholds?	No	Yes	Yes	No	No	No

Note: Calculations assume Tier III and Tier IV engines are available for all equipment.

Key:

- APM applicant proposed measure
- CO carbon monoxide
- lbs pounds
- NO<sub>x</sub> oxides of nitrogen
- PM<sub>10</sub> particulate matter less than or equal to 10 microns in diameter
- PM<sub>2.5</sub> particulate matter less than or equal to 2.5 microns in diameter
- ROG reactive organic gases
- SCAQMD South Coast Air Management District
- SO<sub>x</sub> oxides of sulfur

1  
2 MM AQ-3 would require that additional measures be implemented to reduce daily emissions of NO<sub>x</sub>,  
3 which may include the use of 2010 and newer haul trucks or trucks that meet EPA 2007 model year  
4 NO<sub>x</sub> emissions requirements and/or that all construction equipment be outfitted with BACT devices  
5 certified by CARB and that achieve emissions reductions that are no less than what could be  
6 achieved by a Level 3 diesel emission emissions control strategy for a similarly sized engine as  
7 defined by CARB regulations.

8  
9 MM AQ-4 would require the applicant and SCE to calculate estimated emissions of NO<sub>x</sub> that would  
10 still exceed the SCAQMD daily threshold after implementation of MM AQ-2 and to submit these  
11 calculations to California Public Utilities (CPUC) staff for review prior to construction. Due to the  
12 ability to utilize lower tier engines under APM-02 and MM AQ-1, it is anticipated that construction-  
13 related emissions of NO<sub>x</sub> would still exceed SCAQMD daily emission thresholds for NO<sub>x</sub>. Therefore,  
14 the MM AQ-4 would offset NO<sub>x</sub> emissions from project construction activities and reduce impacts to  
15 less than significant levels.<sup>1</sup> With the implementation of MM AQ-1, MM AQ-3 and MM AQ-4, the  
16 short-term impacts of NO<sub>x</sub> emissions associated with project construction would be less than  
17 significant under this criterion.

18  
19 A summary of potential impacts is provided in Table 4.2-10 by criteria pollutant.  
20

**Table 4.2-10 Summary of Significance Conclusions and Mitigation Measures**

Criteria Pollutant	Significance	APM	Significance after APM	MM	Significance after MM
ROG	Significant	APM-AIR-02	Less than significant with full implementation of APM-AIR-02 Significant with no implementation of APM-AIR-02	MM AQ-1 MM AQ-2	<b>Less than significant with mitigation</b>

<sup>1</sup> With regard to MM AQ-3, the SCAQMD has indicated that the purchase of either Regional Clean Air Incentive Market Trading Credits (RTCs) or Mobile Source Emission Reduction Credits (MSERCs) would constitute appropriate mitigation for construction-related impacts associated with emissions of NO<sub>x</sub> over the threshold established by the SCAQMD.

**Table 4.2-10 Summary of Significance Conclusions and Mitigation Measures**

Criteria Pollutant	Significance	APM	Significance after APM	MM	Significance after MM
CO	Significant	N/A	N/A	N/A	<b>Significant and unavoidable</b>
NO <sub>x</sub>	Significant	APM-AIR-02	Significant with any level of implementation of APM-AIR-02	MM AQ-1, MM AQ-3, MM AQ-4	<b>Less than significant with mitigation</b>
SO <sub>x</sub>	<b>Less than significant</b>	N/A	N/A	N/A	N/A
PM <sub>10</sub>	Significant	APM-AIR-01	<b>Less than significant</b>	N/A	N/A
PM <sub>2.5</sub>	Significant	APM-AIR-01	<b>Less than significant</b>	N/A	N/A

Note: Bold text indicates final impact determination.

Key:

APM applicant proposed measure

CO carbon monoxide

MM mitigation measure

N/A not applicable

NO<sub>x</sub> oxides of nitrogen

PM<sub>10</sub> particulate matter less than or equal to 10 microns in diameter

PM<sub>2.5</sub> particulate matter less than or equal to 2.5 microns in diameter

ROG reactive organic gases

SCAQMD South Coast Air Management District

SO<sub>x</sub> oxides of sulfur

1

2 **Operation and Maintenance**

3 Operation and maintenance (O&M) of the proposed project would continue to be conducted at the  
4 same frequency and intensity as for the existing facilities in the proposed project area. Therefore,  
5 emissions from operations and maintenance activities would be similar to baseline conditions in  
6 the project area and would be less than significant.

7

8 **Impact AQ-3: Result in a cumulatively considerable net increase of any criteria pollutant for**  
9 **which the project region is nonattainment.**

10 *LESS THAN SIGNIFICANT WITH MITIGATION*

11

12 **Construction**

13 Emissions generated by the proposed project from construction activities would cause temporary  
14 increases in ambient air pollutant concentrations for which the project region is nonattainment.  
15 Impacts would be significant.

16

17 As shown in Table 4.2-3, the SCAQMD is currently in nonattainment for ozone, PM<sub>10</sub>, and PM<sub>2.5</sub>. As  
18 discussed under Impact AQ-2 and shown in Table 4.2-7, maximum daily construction emissions  
19 would exceed the regional significance thresholds for NO<sub>x</sub> and ROG, which are ozone precursors.  
20 Implementation of APM-AIR-02 and MM AQ-1 to control NO<sub>x</sub> emissions from vehicles and heavy  
21 equipment would reduce regional NO<sub>x</sub> emissions; however, emission reduction is not guaranteed  
22 due to the ability to utilize lower tier engine in the event that the required higher tier engine are  
23 unavailable. MM AQ-3 requires additional measures to reduce NO<sub>x</sub> emissions. MM AQ-4 would  
24 require that the applicant purchase NO<sub>x</sub> credits to reduce construction-related impacts associated  
25 with NO<sub>x</sub> emissions over the daily threshold established by the SCAQMD. With implementation of

1 MM AQ-1, MM AQ-3, and MM AQ-4, the temporary impacts from emissions of NO<sub>x</sub>, an ozone  
2 precursor, would be reduced to less than significant. Similarly, implementation of APM-AIR-02 and  
3 MM AQ-1 to control ROG emissions from vehicles and heavy equipment would reduce regional ROG  
4 emissions; however, emission reduction is not guaranteed due to the ability to utilize lower tier  
5 engine in the event that the required higher tier engine are unavailable. MM AQ-2 would require  
6 purchase of ROG emissions credits to reduce construction-related impacts associated with ROG  
7 emissions over the daily threshold established by the SCAQMD. With implementation of MM AQ-1  
8 and MM AQ-2, the temporary impacts from emissions of ROG, an ozone precursor, would be  
9 reduced to less than significant. Therefore, construction impacts under this criterion would be less  
10 than significant with mitigation.

## 11 12 **Operation and Maintenance**

13 Operations and maintenance of the proposed project would continue to be conducted at the same  
14 frequency and intensity as for the existing facilities in the proposed project area. Ozone, PM<sub>10</sub>, and  
15 PM<sub>2.5</sub> emissions from O&M activities would therefore be similar to baseline conditions in the project  
16 area and would not result in a cumulatively considerable increase in any of these three criteria  
17 pollutants for which the project region is in nonattainment. Therefore, impacts under this criterion  
18 during operations would be less than significant.

## 19 20 **Impact AQ-4: Expose sensitive receptors to substantial pollutant concentrations.**

21 *SIGNIFICANT AND UNAVOIDABLE WITH MITIGATION*

## 22 23 **Construction**

24 Sensitive receptors in the vicinity of the proposed project would be exposed to emissions of TACs as  
25 a result of construction activities. The main TAC that would be released during construction would  
26 be diesel particulate matter from construction equipment and heavy-duty vehicles traveling to  
27 construction areas. Minor amounts of other TACs would be emitted from such sources as gasoline-  
28 powered worker vehicles and construction equipment.

29  
30 The CARB and Office of Environmental Health Hazard Assessment have identified diesel PM as a  
31 carcinogenic substance and has also defined a reference exposure level based on chronic exposure.  
32 According to the Office of Environmental Health Hazard Assessment, chronic exposure is defined as  
33 human exposures greater than eight years. Under the Office of Environmental Health Hazard  
34 Assessment guidelines for carcinogenic exposure, cancer risk should be evaluated over a 70-year  
35 lifetime.

36  
37 Construction of the proposed project is short term relative to the exposure periods for carcinogenic  
38 and chronic risks. The duration of work occurring in the North Area and South Area, at satellite  
39 substations, along transmission corridors, and along the telecommunications routes would be very  
40 short term, occurring for less than 5 years at any given location. Activities at the proposed Mesa  
41 Substation site would occur over a longer 55-month period in comparison with other components.  
42 However, work would still occur in different locations and at different intensity levels across the  
43 site over the 55-month period, which is far below the 8-year (96-month) threshold for chronic  
44 exposure. Therefore, sensitive receptors within the vicinity of the project area would not be  
45 continuously exposed to diesel particulate matter for the entire 55-month duration of construction.  
46 Furthermore, the SCAQMD currently does not require a health risk assessment for TACs for  
47 construction projects with duration of less than five years (Wong 2015). Given the SCAQMD's  
48 typical requirements for when a health risk assessment is appropriate, and given the duration of

work at given location, a health risk assessment was not prepared for the proposed project. Sensitive receptors would not be exposed to substantial concentrations of TACs.

The SCAQMD has also identified LSTs for CO, NO<sub>x</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub>. Using the SCAQMD methodology, an LST analysis was performed for construction activities expected to result in the highest level of emissions. Daily construction emissions for the substation, transmission/subtransmission, and street light conversion were compared to SCAQMD LST significance thresholds. Table 4.2-11 presents a summary of the significance determinations using the LST methodology.

As shown in Table 4.2-11, CO, PM<sub>10</sub>, and PM<sub>2.5</sub> emissions would not exceed the SCAQMD LST and would be less than significant. However, emissions of NO<sub>x</sub> during substation phases would exceed the LST significance thresholds and would have a short-term, significant impact on air quality during construction. The implementation of MM AQ-1 and MM AQ-3 would reduce NO<sub>x</sub> emissions, as shown in Table 4.2-8. However, NO<sub>x</sub> emissions would still exceed the localized significance thresholds. The implementation of MM AQ-4 would only address NO<sub>x</sub> emissions on a regional level, given that it requires purchasing credits rather than implementing measures to reduce project related emissions, and no additional feasible mitigation is available. Therefore, impacts under this criterion for construction emissions would be significant and unavoidable.

**Table 4.2-11 Comparison of Emissions (lbs/day) by Construction Activity to South Coast Air Quality Management District Localized Significance Thresholds <sup>(1)</sup>**

	CO	NO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
<b>Mesa Substation<sup>(2)</sup></b>	318.27	425.03	14.59	14.17
LST for Mesa Substation	5442	213	116	53
Exceed Threshold?	No	Yes	No	No
<b>Transmission/Subtransmission<sup>(3)</sup></b>				
Lattice Steel Tower Foundations	35.57	40.29	1.49	1.47
Tubular Steel Pole Foundations	25.52	31.62	1.17	1.17
Lattice Steel Tower Erection	32.29	36.49	1.44	1.43
Tubular Steel Pole Erection	15.69	17.64	0.69	0.69
Tubular Steel Pole Foundation Removal	19.78	25.70	1.07	1.07
Duct Bank Installation	18.87	23.58	1.07	1.07
LST for Transmission/Subtransmission	2549	184	59	19
Exceed Threshold?	No	No	No	No

Sources: SCE 2015

Notes:

<sup>(1)</sup> Thresholds for South San Gabriel Valley receptor areas.

<sup>(2)</sup> LST thresholds based on 5-acre site and distance of 280 meters to receptor (as a linear interpolation between 200 and 500 meters).

<sup>(3)</sup> LST thresholds based on 5-acre site and distance of 30 meters to receptor (as a linear interpolation to take into account various distances to transmission structures).

Key:

CO carbon monoxide

lbs/day pounds per day

LST Localized Significance Threshold

NO<sub>x</sub> oxides of nitrogen

PM<sub>10</sub> particulate matter less than or equal to 10 microns in diameter

PM<sub>2.5</sub> particulate matter less than or equal to 2.5 microns in diameter

## Operation and Maintenance

Operations and maintenance of the proposed project would continue to be conducted at the same frequency and intensity as for the existing facilities in the proposed project area. Therefore,

1 emissions from O&M activities would be similar to baseline conditions in the project area and  
2 would be less than significant.

3  
4 **Impact AQ-5: Creation of objectionable odors affecting a substantial number of people.**  
5 *LESS THAN SIGNIFICANT*

6  
7 **Construction**

8 Exhaust from construction equipment and vehicles would create odors from the combustion of fuel  
9 during construction. These emissions would be temporary in nature, would disperse quickly, and  
10 would be limited by the relatively small number of vehicles on site. In addition, most sensitive  
11 receptors would be located far enough away from the proposed project to be affected by any odors  
12 caused by construction from the site. The geographic extent for odor impacts is 36 feet, given that is  
13 the maximum distance at which perception of diesel exhaust emissions can be perceived (Colucci  
14 and Barnes 1970). The Best Western Markland hotel is located adjacent to the western boundary of  
15 the proposed Mesa Substation site. However, work would occur in various locations across the site  
16 throughout construction. Construction within 35 feet of the Best Western Markland Hotel would be  
17 limited to grading and transmission structure installation activities. Therefore, the amount of odor  
18 perceptible to people at the rear of the Best Western Markland Hotel would not affect a substantial  
19 number of people. Construction of the proposed project would have a less than significant impact  
20 under this criterion.

21  
22 **Operation and Maintenance**

23 Operations and maintenance of the proposed project would continue to be conducted at the same  
24 frequency and intensity as for the existing facilities in the proposed project area. Therefore,  
25 emissions from O&M activities would be similar to baseline conditions in the project area and  
26 would be less than significant.

27  
28 **4.2.4 Mitigation Measures**

29  
30 **MM AQ-1: Construction Emission Reduction Measures.** SCE shall implement the following  
31 emission reduction measures for all construction activities:

- 32  
33 1. All off-road diesel-powered construction equipment with engines greater than 100  
34 horsepower (hp) shall be compliant with Tier 4 off-road emissions standards where  
35 available. In the event that equipment with a Tier 4 engine is not available for any off-road  
36 engine larger than 100 hp, ~~that engine shall be operated with tailpipe retrofit controls that~~  
37 ~~reduce exhaust emissions of NO<sub>x</sub> to no more than Tier 4 emission levels.~~ SCE shall  
38 investigate all available diesel retrofit technologies to reduce emissions. Any technologically  
39 feasible retrofit control technologies must be implemented. If emission levels equivalent to  
40 Tier IV standards cannot be reached, the emissions shall be reduced to the maximum extent  
41 possible based on the selected retrofit technology. Diesel retrofit technologies investigated  
42 shall include, but are not limited to, the Air Resource Board currently verified diesel  
43 emission control strategies. SCE shall document the results of its investigation for review  
44 by the CPUC.
- 45 2. All off-road diesel-powered construction equipment with engines greater than 50 hp shall  
46 be compliant with Tier 3 off-road emissions standards where available. In the event that  
47 equipment with a Tier 3 engine is not available for any off-road engine larger than 50 hp,  
48 ~~that engine shall be operated with tailpipe retrofit controls that reduce exhaust emissions of~~

1 NO<sub>x</sub> to no more than Tier 3 emission levels. SCE shall investigate all available diesel retrofit  
2 technologies to reduce emissions. Any technologically feasible retrofit control technologies  
3 must be implemented. If emission levels equivalent to Tier III standards cannot be reached,  
4 the emissions shall be reduced to the maximum extent possible based on the selected  
5 retrofit technology. Diesel retrofit technologies investigated shall include, but are not  
6 limited to, the Air Resource Board currently verified diesel emission control strategies. SCE  
7 shall document the results of its investigation for review by the CPUC.

- 8 3. Equipment with an engine not compliant with the Tier 3 or Tier 4 standards, as applicable,  
9 will be allowed on a case-by-case basis only when the applicant has documented that no  
10 Tier 3 or Tier 4 equipment (or emissions equivalent retrofit equipment) is available for a  
11 particular equipment type. Each case shall be documented with signed written  
12 correspondence by the appropriate construction contractor, along with documented  
13 correspondence from at least two construction equipment rental firms representing a good  
14 faith effort to locate engines that meet Tier 3 or Tier 4 requirements, as applicable.  
15 Documentation will be submitted to CPUC staff for review before equipment is used on the  
16 project.
- 17 4. Submit to CPUC staff and/or construction monitors a copy of each piece of construction  
18 equipment's certified tier specification, best available control technology (BACT)  
19 documentation, and/or CARB or SCAQMD operating permit, as applicable, at least 15 days  
20 prior to mobilization of each applicable unit of equipment. In the event that unforeseen  
21 equipment replacement is required after the initial notification, replacement equipment  
22 may be used so long as notification is submitted 24 hours prior to mobilization of the  
23 replacement equipment.
- 24 5. Idling construction equipment will be turned off when not in use for periods longer than 15  
25 minutes.

26  
27 **MM AQ-2: Volatile Organic Compounds Credits.** The remaining emissions of VOC/ROG resulting  
28 from construction of the proposed Mesa Substation Project shall be mitigated through the purchase  
29 of Emissions Trading Credits (ETCs) for every pound of VOC/ROG in excess of the SCAQMD regional  
30 significance threshold of 100 pounds per day, as measured. The total amount of VOC/ROG ETCs to  
31 be purchased shall be calculated once the construction schedule is finalized. The applicant shall  
32 purchase and submit documentation of purchase of the required ETC to the SCAQMD prior to the  
33 start of construction. The applicant shall also track actual daily ROG emissions during construction  
34 according to a monitoring plan that includes records of equipment and vehicle usage and submit  
35 the results of this tracking to CPUC staff on a monthly basis. If monthly reports indicate that too few  
36 credits have been purchased to compensate for ROG emissions after implementation of all  
37 applicable mitigation measures, the applicant shall purchase additional ROG credits within 6  
38 months of the end of construction. The applicant shall submit proof of the purchase of credits  
39 within 7 months of the end of construction.

40  
41 **MM AQ-3: Measures to Reduce NO<sub>x</sub> Emissions.** Prior to construction, the applicant and SCE will  
42 submit proposed additional measures to reduce daily emissions of NO<sub>x</sub> to CPUC staff for review and  
43 approval, with the measures implemented depending on the amount of Tier III and Tier IV engines  
44 available at the time of construction. Measures may include the following:

- 45  
46 1. The use of 2010 and newer haul trucks (e.g., material delivery trucks and soil  
47 import/export) or the use of trucks that meet EPA 2007 model year NO<sub>x</sub> emissions  
48 requirements if 2010 model year or newer diesel trucks cannot be obtained.

1       2. ~~A requirement that, during project construction, all construction equipment shall be~~  
2       ~~outfitted with BACT devices certified by CARB and that achieve emissions reductions that~~  
3       ~~are no less than what could be achieved by a Level 3 diesel emissions control strategy for a~~  
4       ~~similarly sized engine as defined by CARB regulations.~~

5       3. Other measures as determined appropriate by the applicant and SCE in consultation with  
6       the SCAQMD.

7  
8       **MM AQ-4: Mitigation Agreement for Purchase of Oxides of Nitrogen (NO<sub>x</sub>) Credits.** Twenty  
9       days prior to the start of project construction, the applicant shall provide CPUC staff with an  
10       estimate of the total construction -related NO<sub>x</sub> emissions after implementation of all applicable  
11       mitigation measures, broken down by individual construction day. All NO<sub>x</sub> emissions that would  
12       exceed the daily threshold of 100 pounds per day shall be offset through the purchase of either  
13       Regional Clean Air Incentive Market Trading Credits (RTCs), Mobile Source Emission Reduction  
14       Credits (MSERCs), or a combination of RTCs and MSERCs. For each day that estimated NO<sub>x</sub>  
15       emissions are less than 100 pounds per day, the purchase of NO<sub>x</sub> offset credits is not required.

16  
17       The total amount of NO<sub>x</sub> RTCs and/or MSERCs to be purchased shall be determined by the CPUC  
18       after the construction schedule and operating conditions are finalized, based on estimates provided  
19       by the applicant as described above. The NO<sub>x</sub> emission credits shall be purchased and submitted to  
20       the CPUC prior to the start of project construction. Credits must be current for the time the project  
21       takes place. The applicant shall also track actual daily NO<sub>x</sub> emissions during construction according  
22       to a monitoring plan that includes records of equipment and vehicle usage and submit the results of  
23       this tracking to CPUC staff on a monthly basis. If monthly reports indicate that too few credits have  
24       been purchased to compensate for NO<sub>x</sub> emissions after implementation of all applicable mitigation  
25       measures, the applicant shall purchase additional NO<sub>x</sub> credits within 6 months of the end of  
26       construction. The applicant shall submit proof of the purchase of credits within 7 months of the end  
27       of construction.  
28

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