D.2 Air Quality

This section addresses the Proposed Project and alternatives as they would affect air quality. Section D.2.1 provides a description of the environmental setting, and the applicable air quality management plans, regulations, and requirements are introduced in Section D.2.2. An analysis of the Proposed Project impacts is provided in Section D.2.3, and the air quality impacts related to the project alternatives are described in Sections D.2.4 and D.2.5.

D.2.1 Environmental Setting for the Proposed Project

Climate and Meteorology

The semi-permanent Pacific High over the eastern Pacific Ocean dominates the climate in the project area. San Diego County has a subtropical climate. Summers are typically cool and winters are more mild near the ocean in comparison to locations further inland. Ambient temperatures occasionally occur below freezing or over 100°F. Peak temperatures increase away from the coast. During the winter months, the Pacific High weakens and migrates to the south allowing Pacific storms into California. At El Cajon, the average annual rainfall is 12 inches, most of which occurs between November and April (WRCC, 2003).

The project area is within coastal and transitional climate zones of San Diego County (SDAPCD, 2002). The ocean's influence is diminished but is still significant. The prevailing climate is semi-arid to arid. The reduced humidity prevents some air quality problems associated with mold spores but increases the amount of dust and particulate matter in the air. Communities in this region experience frequent summer morning fog and clouds and moderate humidity. The prevailing winds through central San Diego County are generally from the west, but are greatly influenced by local topography. Occasional winter storms and offshore flows reverse the winds so that they flow from the east.

Existing Air Quality

Criteria Air Pollutants. With the assistance of the San Diego County Air Pollution Control District (SDAPCD), the California Air Resources Board (CARB) compiles inventories and projections of emissions of the major pollutants and monitors air quality conditions. Air quality conditions are tracked for both "criteria air pollutants" and "toxic air contaminants." Figure D.2-1 shows the locations of air quality monitoring stations in the project area. The El Cajon station is within roughly 10 miles of most of the 35-mile ROW.

Criteria air pollutants refer to a group of pollutants for which regulatory agencies have adopted ambient air quality standards and region-wide pollution reduction plans. Criteria air pollutants include ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter, and lead. Toxic air contaminants (TACs) refer to a category of air pollutants that pose a present or potential hazard to human health, but which tend to have more localized impacts than criteria air pollutants. Reactive and volatile organic compounds and gases (ROG) and nitrogen oxides (NOx) are also regulated as criteria pollutants because they are precursors to ozone formation. Certain ROGs may also qualify as TACs. Two subsets of particulate matter are inhalable particulate matter less than ten microns in diameter (PM_{10}) and fine particulate matter less than 2.5 microns in diameter ($PM_{2.5}$).

Ambient Air Quality. Historically, violations of federal and State ambient air quality standards for ozone, particulate matter, and CO have occurred in San Diego County. Since the early 1970s, substantial progress has been made toward controlling these pollutants. Although some air quality improvements have occurred, violations of ambient air quality standards for particulate matter and ozone are persistent. The frequency of the violations and the current air quality conditions are summarized for ozone, PM_{10}, and CO in Table D.2-1. (The standards are discussed in more detail under Section D.2.2, Applicable Regulations, Plans, and Standards.)

Table D.2-1. Local Ambient Air Quality Monitoring Data

		Ozone	Ozone	Ozone	PM_{10}	PM_{10}	PM_{10}	CO	CO
Monitoring Location	Year	Days Over 1-hr State Standard	Max 1-hr (ppm)	Max 8-hr (ppm)	Days Over 24-hr State Standard	Max 24-hr ($\mu g/m^3$)	Annual Average ($\mu g/m^3$)	Max 1-hr (ppm)	Max 8-hr (ppm)
El Cajon, Redwood Ave.	1997	7	0.11	0.089	6	76	27.3	5.6	4.3
	1998	14	0.13	0.102	6	54	26.1	5.2	4.1
	1999	3	0.10	0.085	24	60	33.9	5.8	3.8
	2000	5	0.11	0.079	12	69	31.4	—	—
	2001	3	0.12	0.085	41	84	37.0	—	—
	2002	2	0.10	0.083	24	61	34.0	—	—

Source: CARB Air Quality Data CD-R, 2002a; and CARB Air Quality Data Website, 2003.

Notes: State Standard = California Ambient Air Quality Standard (CAAQS)
ppm = parts per million
$\mu g/m^3$ = micrograms per cubic meter; days over PM_{10} CAAQS is calculated based on monitoring every sixth day.
Station Location: All data are from the El Cajon monitoring station.

Border Region Air Quality

The California-Mexico border region surrounding San Diego County is characterized by air quality conditions that tend to be worse than in San Diego County itself. Imperial County (Calexico) leads the State in annual exceedances of the 24-hour PM_{10} National Ambient Air Quality Standards (NAAQS) and the 8-hour CO NAAQS. On the south side of the border, concentrations of PM_{10} exceed the U.S. Environmental Protection Agency (NAAQS) in Tijuana (approximately 12 times per year) and Mexicali (more than 150 times per year) (CARB, 2002b). Air quality problems in Tijuana and San Diego can be attributed to a combination of local emissions and emissions from the opposite side of the border (CARB, 2001).

Existing Emission Inventory

Existing emission sources in the project area include a diverse range of stationary sources, mobile sources, and smaller sources that are distributed area-wide. Mobile sources are commonplace throughout the suburban areas, including on-highway motor vehicles, heavy mobile equipment used for off-road purposes (e.g., construction equipment), aircraft, and railroad locomotives. CARB compiles region-wide emission inventories that include planning and forecast estimates for each of these groups of sources.

Power for the existing electrical system is provided by generators within San Diego County, southern California, and generators south of the California-Mexico border. Although power plants are an easily recognizable source of pollution, they represent only a small fraction of the California emission inventory for NOx and PM_{10} (CEC, 2003). Generation is provided by power plants that range in age and technology. Most recent additions to the in-State power plant fleet generally feature combined-cycle com-

Figure D.2-1. Air Quality Monitoring Network in Project Area

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bustion turbines or simple-cycle combustion turbines (examples of both types have recently been approved or are already operating in Otay Mesa and Escondido). Table D.2-2 summarizes the notable sources that provide (or are expected to provide) the majority of power to the electrical system of the project area.

Table D.2-2. Notable Generation Sources in Miguel-Mission Project Area

Power Plant	Location	Type of Facility	Available Rating (MW)*	NOx Emissions (lb/MW-hr)*	PM_{10} Emissions (lb/MW-hr)*	CO Emissions (lb/MW-hr)*
Existing Major Power Plants						
Duke – South Bay	Chula Vista	Multi-fuel boiler/turbine	693	0.44 est.	0.07	1.59
SDG&E – Encina	Carlsbad	Multi-fuel boiler/turbine	965	0.37 est.	0.06	0.84
SCE – San Onofre	San Onofre	Nuclear	2150	0.002	<0.001	0.001
Existing Peaker Plants						
Intergen – Larkspur	Otay Mesa	Gas-fired turbine	90	0.17	0.07	0.12
Intergen – Larkspur	Otay Mesa	Liquid-fuel backup	90	0.36	0.29	0.12
Calpeak – Border	Otay Mesa	Gas-fired turbine	49.5	0.12	0.07	0.15
Calpeak – Escondido	Escondido	Gas-fired turbine	49.5	0.21	0.07	0.15
Recently Approved Power Plants						
Calpine – Otay Mesa	Otay Mesa	Gas-fired turbine	510	0.06	0.07	0.11
Sempra – Palomar	Escondido	Gas-fired turbine	546	0.05	0.05	0.07
Imported from Mexican Power Plants						
Intergen – La Rosita Power Complex	Mexicali	Gas-fired turbine	560	0.11	0.17	0.38
Sempra – Thermoelectric de Mexicali	Mexicali	Gas-fired turbine	600	0.06	0.08	0.06
Other Generation Sources						
California fleet average (2001)	Statewide	Load-following	---	0.38	---	---
California fleet average (2001)	Statewide	Any fired fuel	---	0.45	0.29	---
Steam boilers retrofit for Rule 69	Any San Diego Co.	Gas-fired boiler	---	0.15	---	---
Steam boilers retrofit for Rule 69	Any San Diego Co.	Liquid-fuel boiler	---	0.40	---	---

* Ratings and Emission Factors are provided for informational purposes only. Depending on availability of data, emission factors are calculated based on permit limits and licensed rating or actual emissions reported to the SDAPCD and estimated availability.

D.2.2 Applicable Regulations, Plans, and Standards

Ambient Air Quality Standards

Air quality is determined by measuring ambient concentrations of criteria pollutants, which are air pollutants for which acceptable levels of exposure can be determined and for which standards have been set. The degree of air quality degradation is then compared to the current National and California Ambient Air Quality Standards (NAAQS and CAAQS). Because of unique meteorological conditions in California, and because of differences of opinion by medical panels established by CARB and the U.S. EPA, there is diversity between State and federal standards currently in effect in California. In general, the CAAQS are more stringent than the corresponding NAAQS. The standards currently in effect in California are shown in Table D.2-3.

Table D.2-3. National and California Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards	National Standards
Ozone (O_3)	1-hour	0.09 ppm	0.12 ppm
	8-hour	—	0.08 ppm
Respirable particulate matter (PM_{10})	24-hour	50 µg/m^3	150 µg/m^3
	Annual mean	20 µg/m^3	50 µg/m^3
Fine particulate matter ($PM_{2.5}$)	24-hour	—	65 µg/m^3
	Annual mean	12 µg/m^3	15 µg/m^3
Carbon monoxide (CO)	1-hour	20 ppm	35 pm
	8-hour	9.0 ppm	9.0 ppm
Nitrogen dioxide (NO_2)	1-hour	0.25 ppm	—
	Annual mean	—	0.053 ppm
Sulfur dioxide (SO_2)	1-hour	0.25 ppm	—
	24-hour	0.04 ppm	0.14 ppm
	Annual mean	—	0.03 ppm

Notes: ppm=parts per million; µg/m^3= micrograms per cubic meter; "—" = no standard
Source: CARB Ambient Air Quality Standards Table, 2003.

Air quality standards are designed to protect those people most susceptible to respiratory distress, such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and people engaged in strenuous work or exercise.

Attainment Status

Each geographic area is designated by either the U.S. EPA or CARB as a nonattainment area if violations of the ambient air quality standards are persistent. The San Diego area is classified as a serious nonattainment area for the State ozone standard, and like nearly every other county in the State of California, it is a nonattainment area with respect to the PM_{10} CAAQS. San Diego was successfully designated as an attainment area for the federal 1-hour ozone standard in 2003, but within the next few years the U.S. EPA will need to establish designations for the 8-hour ozone standard and the $PM_{2.5}$ standards. It is not clear whether San Diego would be likely to attain these more stringent standards. A summary of the air quality status within the County relative to meeting the NAAQS and CAAQS is provided in Table D.2-4.

Table D.2-4. Attainment Status of San Diego Air Basin

	Ozone		PM_{10}		CO		NO_2		SO_2	
Air Basin	State	Federal	State	Federal	State	Federal	State	Federal	State	Federal
San Diego	Serious Nonattainment	A	N	A	A	A	A	A	A	A

Note: A = Attains Ambient Air Quality Standards; N = Nonattainment.
Source: CARB, 2003 (http://www.arb.ca.gov/desig/desig.htm) and U.S. EPA, 2004 (http://www.epa.gov/region09/air/).

Air Quality Plans and Regulations

The federal Clean Air Act, as amended, and the California Clean Air Act both require that air quality management plans be formulated demonstrating how the ambient air quality standards will be achieved in nonattainment areas. These laws also provide the basis for the implementing agencies to develop mobile and stationary source performance standards.

The San Diego County Air Pollution Control District (SDAPCD) is the primary agency responsible for planning, implementing, and enforcing federal and State ambient standards within the County. In order to demonstrate how the area will eventually meet the standards, the SDAPCD maintains the Regional Air Quality Strategy, most recently revised in 2001. The Regional Air Quality Strategy (RAQS) is a compilation of measures and regulations that govern how the region will manage ozone precursors (NOx and volatile organic compounds or VOCs) to eventually attain and maintain the ozone standard. No State plan is required to meet State PM_{10} standards.

Emissions limitations are imposed upon sources of air pollutants by rules and regulations promulgated by the federal, State, or local agencies. Mobile sources of air pollutants and exhaust from off-road equipment are controlled by federal and State agencies through emission performance standards and fuel formulation requirements and are exempt from SDAPCD rules and regulations (Regulation XIV, Appendix A – Insignificant Units). Mobile and portable sources and temporary activities that cause emissions air contaminants are managed through a range of local, State and national programs mentioned below. Operation of emission sources will not interfere with progress in attainment of State and national ambient air quality standards, provided that they are compliant with the following programs:

- **U.S. EPA/CARB Off-Road Mobile Sources Emission Reduction Program.** The California Clean Air Act mandates CARB to achieve the maximum degree of emission reductions from all off-road mobile sources in order to attain the State ambient air quality standards. Off-road mobile sources include construction equipment. Tier 1 standards for large compression-ignition engines used in off-road mobile sources went into effect in California in 1996.
- **CARB Portable Equipment Registration Program.** This program allows owners or operators of portable engines and associated equipment to register their units under a statewide portable program to operate their equipment throughout California without having to obtain individual permits from local air districts.
- **SDAPCD Regulation IV – Prohibitions, Rule 50 – Visible Emissions.** This rule prohibits any activity causing air contaminant emissions darker than Ringelmann Number 1 (20 percent opacity) for more than an aggregate of three minutes in any consecutive 60 minute time period.
- **SDAPCD Regulation IV – Prohibitions, Rule 51 – Nuisance.** This rule prohibits any activity causing the discharge of air contaminants that cause or have a tendency to cause injury, detriment, nuisance, annoyance to people and/or the public, or damage to any business or property.

Border Region Air Quality Management

The U.S. EPA and CARB are participating in air quality management activities in the California-Mexico border region. Domestic efforts to manage air quality in the region include ambient air monitoring, vehicular emissions studies, and heavy-duty diesel vehicle inspections in the region (CARB, 2002b). Another recent focus of air quality management is related to power plants operating south of the border. The participants in the Border 2012 U.S.-Mexico Environmental Program recognize that energy trade

affects air quality in the border region and that more work with federal, State, and local governments in both countries as well as non-governmental organizations, businesses, and citizens is necessary to address the linkage of energy trade and air quality (U.S. EPA, 2003). In the past, local businesses, the U.S. EPA, and its Mexican federal counterpart, the Secretariat of Environment, Natural Resources, and Fisheries (SEMARNAP), have defined efforts to implement the use of natural gas instead of fuel oil at a major existing power plant in Rosarito (U.S. EPA, 2000) and study emissions from a geothermal power plant near Mexicali (U.S. EPA, 1999). Through the Border 2012 program, the U.S. EPA aims to develop additional specific emission control strategies in 2004.

D.2.3 Environmental Impacts and Mitigation Measures

D.2.3.1 Definition and Use of Significance Criteria

The significance of air quality impacts depends on the criteria established in the State CEQA Guidelines, Appendix G. Air quality impacts would be considered significant if the project 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 project region is non-attainment under an applicable federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).
- Expose sensitive receptors to substantial pollutant concentrations.
- Create objectionable odors affecting a substantial number of people.

To determine whether a significant impact would occur during construction, the SDAPCD informally recommends quantifying construction emissions and comparing them to thresholds found in the SDAPCD regulations for stationary sources. If emissions during project construction could exceed the thresholds that apply to stationary sources, then construction activities could have the potential to violate air quality standards or contribute substantially to existing violations. Emissions from project operations may also be quantified and compared to thresholds. The stringent recommendations of the South Coast Air Quality Management District are used here in lieu of specific recommendations from SDAPCD. Total operational emissions for comparison with these thresholds includes all emissions from motor vehicle use and stationary sources associated with the project. The significance thresholds are shown in Table D.2-5.

Table D.2-5. Air Quality Significance Thresholds

Significance Thresholds	NOx (lb/day)	PM_{10} (lb/day)	CO (lb/day)	SOx (lb/day)
Construction Significance	250	100	550	250
Operation Significance	55	150	550	150

Source: SDAPCD, Rule 20.2(d)(2) for construction and South Coast Air Quality Management District CEQA Air Quality Handbook for operation.

D.2.3.2 Project Protocols

Table D.2-6 shows the Project Protocols proposed by SDG&E for air quality.

Table D.2-6. Project Protocols – Air Quality

PP No.	Description
56	The following protocols would be employed to minimize the release of PM_{10}: prohibiting construction grading on days when the wind is significant, where feasible; covering all trucks hauling soil and other loose material, or require at least two feet of freeboard; erecting snow-fence type windbreaks in areas identified, as needed, by SDG&E; limiting vehicle speeds to 15 miles per hour on unpaved roads; treating unpaved roads with chemical stabilizers or by watering, as necessary; applying soil stabilizers to inactive construction areas on an as needed basis; and placing perimeter silt fencing, watering as necessary, or adding soil binders to exposed stockpiles of soil and other excavated materials.
57	To minimize mud and dust from being transported onto paved roadway surfaces, pave or apply chemical stabilization at sufficient concentration and frequency to maintain a stabilized surface starting from the point of intersection with the public paved surface and extending for a centerline distance of at least 100 feet and a width of at least 20 feet.
58	To the extent feasible, any other air pollution control measures approved by the Air Pollution Control District and the U.S. EPA as equivalent may be used.
59	If suitable park-and-ride facilities are available in the project vicinity, construction workers would be encouraged to carpool to the job site, to the extent feasible. The ability to develop an effective carpool program for the project would depend upon the proximity of carpool facilities to the job site, the geographical commute departure points of construction workers, and the extent to which carpooling would not adversely affect worker arrival time and the project's construction schedule.
60	To the extent feasible, unnecessary construction vehicle and idling time would be minimized. The ability to limit construction vehicle idling time is dependent upon the sequence of construction activities and when and where vehicles are needed or staged. Certain vehicles, such as large diesel-powered vehicles, have extended warmup times that limit their availability for use following startup. Where such diesel-powered vehicles are required for repetitive construction tasks, these vehicles may require more idling time. The project would apply a "common sense" approach to vehicle use; if a vehicle is not required for use immediately or continuously for construction activities, its engine would be shut off. Construction foremen would include briefings to crews on vehicle use as a part of preconstruction conferences. Those briefings would include discussion of a "common sense" approach to vehicle use.

Source: SDG&E, PEA, 2002.

D.2.3.3 Proposed Miguel-Mission 230 kV #2 Project

Impacts of Transmission Line Construction

Impact A-1: Construction Activities Would Create Emissions of Dust and Equipment Exhaust

Construction of the Proposed Project would involve activity throughout the 35-mile corridor, over a period of approximately 24 months. During construction, emissions that would be generated within the project ROW and substation boundaries would principally consist of exhaust emissions from heavy-duty diesel and gasoline-powered construction equipment (e.g., ozone precursors, carbon monoxide, and PM_{10}) and fugitive particulate matter (dust) from travel on unpaved surfaces. Beyond the boundaries of the ROW and substations, exhaust emissions would also be caused by workers commuting to and from the project site, from trucks hauling conductor, pole segments, and other equipment and supplies to the construction sites, dump trucks hauling away dirt or vegetation debris, and trucks delivering fresh concrete to pole sites along the corridor.

Diesel emissions from construction equipment may also create objectionable odors. However, it is anticipated that the temporary nature of these emissions in any single location would not affect nearby persons.

General construction, structure foundation excavation, structure delivery and setup, wire installation, fugitive dust from travel along the ROW, and substation work could each occur simultaneously on any given day of construction. To characterize the air quality impact, SDG&E prepared an estimate of maximum daily construction emissions assuming that several different activities could occur simultaneously (Supplemental Application No. 2, December 2002). However, supporting calculations were not included with the impact assessment, and the basis of the emission estimate was not verifiable, and additional independent analyses were necessary. The estimated construction emissions, including numerous emission reduction strategies (described below), are compared with the thresholds in Table D.2-7.

Table D.2-7. Emissions from Construction of Transmission Line and Substation Modifications

Construction Activity	NOx (lb/day)	PM10 (lb/day)	CO (lb/day)	VOC (lb/day)	SOx (lb/day)
Off-Road Equipment (Grading and Excavation)	103.3	9.5	91.9	20.4	13.6
Off-Road Equipment (Tower Foundation and Erection)	84.9	8.4	70.3	16.8	11.2
On-Road Trucks and Workers	24.2	0.7	61.7	5.0	0.2
Fugitive Dust	---	75.6	---	---	---
Daily Activity Totals	**212.5**	**94.2**	**223.8**	**42.1**	**25.0**
Significance Criteria	**250**	**100**	**550**	**None**	**250**

Source: Activity data from SDG&E, Supplemental Application No. 2, December 2002; emission estimates Aspen Environmental Group, 2004.

There are many strategies that can be used to reduce emissions during project construction. Dust suppression is normally necessary to avoid nuisances in areas with nearby sensitive receptors, and other strategies are usually appropriate for managing equipment operation to conserve fuel, avoid nuisance conditions, and reduce emissions. The Applicant specifically proposed PP-56 and PP-57 to reduce fugitive dust, and PP-58, PP-59, and PP-60 to reduce emissions caused by exhaust of construction equipment. The Applicant's PP-7, PP-11, and PP-12 would also help to reduce emissions by requiring compliance with SDAPCD rules and generally reducing wind erosion. The emissions shown in Table D.2-7 are based on assumptions of rigorous dust suppression (at all areas, including parking and staging areas) and use of newer, or lower-emitting, construction equipment. Without these assumptions, the emissions could exceed the significance criteria. Implementation of PP-56 through PP-60 along with the following recommendations, shown in Mitigation Measures A-1a through A-1b, would reduce this potentially significant impact to a level that is less than significant (Class II).

Mitigation Measure for Impact A-1, Construction Activities Would Create Emissions of Dust and Equipment Exhaust

A-1a **Suppress dust at all work or staging areas and on public roads.** SDG&E shall (1) pave, apply water three times daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas and staging areas if activity causes persistent visible emissions of fugitive dust beyond the work area; and (2) sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets.

A-1b **Use low-emission construction equipment.** SDG&E shall (1) use diesel engines that meet, at a minimum, 1996 CARB or U.S. EPA certified standards for off-road equipment that has a rating of more than 100 horsepower, or install high-pressure diesel injectors and retard the injection timing on any off-road equipment that was manufactured prior to 1996; (2) maintain construction equipment per manufacturing specifications; and (3) substitute small electric-powered equipment for diesel- and gasoline-powered construction equipment where feasible.

Impacts of Transmission Line Operations

Impact A-2: Inspection and Maintenance Would Cause Emissions from Mobile Source Activity

Once construction is complete, operational emissions would result from vehicle use that would be necessary for periodic maintenance, repair, and inspection of the project components. This would be the only direct air quality impact related to the project. General system monitoring, control, and inspections occur in the existing conditions and presently cause small amounts (around 1,000 vehicle-miles per month) of light and medium-heavy duty truck traffic (SDG&E, Supplemental Application No. 2, December 2002). The Proposed Project would not require a substantial number of new vehicle trips compared to the existing conditions. No new permanent employees would be needed to operate the Proposed Project. The incremental increase of emissions that would be caused by project vehicular traffic for inspection and maintenance activities would be minor.

Direct emissions from project vehicular traffic for maintenance activities would cause a negligible, less than significant impact, and mitigation measures are not required (Class III).

Impact A-3: Power Generated During Transmission Line Operation Would Cause Emissions from Power Plants

The Proposed Project would facilitate transmission of power from a network of power plants throughout San Diego County. The stated project objectives include reducing constraints on the State's transmission grid and increasing access to generating capacity, allowing more efficient use of the grid by generators. Indirect air quality impacts could be related to the project if increased power plant emissions would occur. Power delivered to the project area would occur at electrical generation facilities (including nuclear and natural gas–fired power plants) inside and outside of the region. The proposed 230 kV circuit would be rated at approximately 1,000 MW, which means it could accommodate power from a wide variety of sources. These sources include new and recently approved gas-fired combustion turbine power plants in the U.S. and Mexico (NOx emissions generally between 0.05 and 0.12 lbs per MW-hr) and existing multi-fuel boiler power plants in the San Diego region (NOx emissions generally around 0.4 lbs per MW-hr). The notable possible sources of power and their associated emission rates (per MW) are summarized in Table D.2-2.

Demand for electricity would not change as a result of the Proposed Project, and power generated in response to the demand would occur regardless of whether the Proposed Project is approved or disapproved. It is foreseeable that emissions could increase at some plants as they serve demand through use of the Proposed Project transmission system; however, other plants connected to the transmission grid might need to decrease operations, and consequently emissions, or change operations if increased competition forces them to shut down or serve demand elsewhere through other transmission facilities. By reducing constraints to the existing electrical system, the Proposed Project would generally improve the ability of power generators to respond to the demand. Therefore, the Proposed Project itself would not increase emissions.

Growth in electricity demand, although unrelated to the Proposed Project, could result in new power plant emissions in the future. Emissions from foreseeable future power generation within California would be subject to local air pollution control district requirements and CEQA.[1] This means that

[1] Information related to the California Power Plant and Energy Facilities Licensing Process is publicly available at http://www.energy.ca.gov/sitingcases/index.html. For example see: California Energy Commission, Final Decision, Otay Mesa Generating Project, April 2001 (Docket No. 99-AFC-5).

domestic power plant emissions would likely be publicly reviewed and mitigated to avoid significant impacts and ensure consistency with local air quality management goals and attainment plans. Other discretionary projects in the U.S. related to obtaining power from Mexico would similarly be subject to the requirements of the National Environmental Policy Act (NEPA process).[2]

The impact of emissions from power plants would be less than significant because the project would not change the demand for power, and the project would generally improve the efficiency of the generators delivering power by reducing constraints on the grid (Class III). It is also worth reiterating that as described above, emissions from power plants that may be connected to the Proposed Project in the future would also be subject to subsequent environmental review.

D.2.3.4 Future 230 kV Circuit within Miguel-Mission ROW

Construction activity associated with installing the future 230 kV circuit would result in additional air quality impacts, probably occurring over a shorter duration. Impact A-1 would occur, and as with the project, the impacts related to construction dust and equipment emissions would be temporary, but would warrant implementation of Mitigation Measures A-1a and A-1b. Implementing these measures would reduce air quality impacts during construction of the additional circuit to a level that would be less than significant (Class II).

Operation of an additional circuit would further facilitate transmission of power through San Diego County. Emissions from inspection and maintenance activities would remain similar to those for the Proposed Project (Impact A-2, Class III). The future 230 kV circuit would increase the rating of the Proposed Project by approximately 1,000 MW, and as with the project, it is foreseeable that emissions could increase at some power plants upon serving demand through a future circuit (Impact A-3). Similar to the Proposed Project, the additional circuit would not change the demand for power, and the efficiency of power delivery through the grid would generally be improved when compared to conditions without an additional circuit, which means no significant changes in emissions from power plants would occur (Class III).

D.2.4 Project Alternatives

D.2.4.1 Jamacha Valley 138 kV/69 kV Underground Alternative

Environmental Setting

Section D.2.1 describes the general air quality conditions for this alternative route because it would be near the Proposed Project. Jamacha Valley 138 kV/69 kV Underground Alternative would be located along Willow Glen Drive. There are scattered rural residences along Willow Glen Drive and the alignment would pass near the Singing Hills Memorial Park cemetery.

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[2] Information related to the U.S. Department of Energy NEPA review process for transmission lines across the U.S. border with Mexico is publicly available (FE Docket Nos. PP-234 and PP-235). For example see: Environmental Assessment for Presidential Permit Applications for Baja California Power, Inc. and Sempra Energy Resources, December 2001 (DOE/EA-1391). Also: Notice of Intent to Prepare an Environmental Impact Statement (Vol. 68, Federal Register, p. 61796, October 30, 2003).

Environmental Impacts and Mitigation Measures

Construction of the Jamacha Valley 138 kV/69 kV Underground Alternative would require short-term use of backhoes, boring equipment, trenchers, dump trucks, mobile cranes, haul trucks, and street sweepers. Emissions from this equipment would not be substantially different from those that would occur with the Proposed Project, although they would occur in the proximity of receptors along Willow Glen Drive and the Singing Hills Memorial Park cemetery. Localized short-term construction emissions would occur (Impact A-1), and implementation of PP-56 through PP-60 and Mitigation Measures A-1a and A-1b would reduce potentially significant impacts during the construction phase to less than significant levels (Class II).

Operational air quality impacts for all alternatives (Impacts A-2 and A-3) would be essentially the same for each alternative because each alternative would require some level of maintenance and inspection. No alternative would change the demand for power, which means no significant changes in emissions from power plants would occur. Air quality impacts during the operation would be insignificant (Class III) and would not require mitigation under any alternative.

Comparison to Proposed Project

Compared to the Proposed Project, this alternative would cause increased construction activities along Willow Glen Drive with the undergrounding of the 138 kV/69 kV line, which would be more likely to cause a nuisance from dust or equipment emissions during trenching and would have a longer construction duration. Operational air quality impacts would be similar to the Proposed Project.

Comparison to Proposed Project with Future Circuit

Compared to the Proposed Project with future circuit, this alternative with the future circuit would cause increased construction activities along Willow Glen Drive, which would be more likely to cause a nuisance from dust or construction equipment emissions. Operational air quality impacts would be similar to the Proposed Project.

D.2.4.2 Jamacha Valley Overhead A Alternative

Environmental Setting

Section D.2.1 describes the general air quality conditions for this alternative route because it would be within the existing ROW and therefore would have the same setting as the Proposed Project.

Environmental Impacts and Mitigation Measures

Construction of the Jamacha Valley Overhead A Alternative would require short-term use of equipment to install the poles for the 138 kV/69 kV line near the eastern edge of the ROW. Emissions of dust and equipment exhaust from installing poles in this location would be similar to those that would occur during installation of the 138 kV/69 kV poles under the Proposed Project. This alternative with also require extensions of existing access roads to the eastern side of the ROW. Localized short-term construction emissions would occur (Impact A-1), and implementation of PP-56 through PP-60 and Mitigation Measures A-1a and A-1b would reduce potentially significant impacts during the construction phase to less than significant levels (Class II).

Operational air quality impacts (Impacts A-2 and A-3) would essentially be the same as those described for the previous alternative and the Proposed Project (Class III).

Comparison to Proposed Project

Construction of the poles for the 138 kV/69 kV line near the eastern edge of the ROW under this alternative would consist of essentially the same construction activities in the Jamacha Valley, which have a similar ability to cause a nuisance from dust or construction equipment emissions. However, dust and equipment emissions would be greater under this alternative, due the need to extend or create access roads to access the eastern side of the ROW. Operational air quality impacts would be similar to the Proposed Project.

Comparison to Proposed Project with Future Circuit

Compared to the Proposed Project with future circuit, construction of the poles and access roads under this alternative with the future circuit would consist of similar construction activities, which have a similar ability to cause a nuisance from dust or construction equipment emissions. Operational air quality impacts would be similar to the Proposed Project.

D.2.4.3 Jamacha Valley Overhead B Alternative

Environmental Setting

Section D.2.1 describes the general air quality conditions for this alternative route because it would be within the existing ROW and therefore would have the same setting as the Proposed Project.

Environmental Impacts and Mitigation Measures

Construction of the Jamacha Valley Overhead B Alternative would require short-term use of equipment to install the additional 230 kV steel mono-poles, in conjunction with the work necessary to install the poles for the 138 kV/69 kV line. Emissions of dust and equipment exhaust from installation of installing new poles would be of a longer duration than those that would occur under the Proposed Project for tower modifications. Localized short-term construction emissions would occur (Impact A-1), and implementation of PP-56 through PP-60 and Mitigation Measures A-1a and A-1b would reduce potentially significant impacts during the construction phase to less than significant levels (Class II).

Operational air quality impacts (Impacts A-2 and A-3) would essentially be the same as those described for the previous alternative and the Proposed Project (Class III).

Comparison to Proposed Project

Compared to the Proposed Project, construction of additional poles under this alternative would result in longer construction activities in the Jamacha Valley, which have a greater ability to cause a nuisance from dust or construction equipment emissions. Operational air quality impacts would be similar to the Proposed Project.

Comparison to Proposed Project with Future Circuit

Compared to the Proposed Project with future circuit, construction of additional poles under this alternative with the future circuit would result in longer construction activities, which have a greater ability

to cause a nuisance from dust or construction equipment emissions. Operational air quality impacts would be similar to the Proposed Project.

D.2.4.4 City of Santee 138 kV/69 kV Underground Alternative

Environmental Setting

Section D.2.1 describes the general air quality conditions for this alternative route because it would be near the Proposed Project. City of Santee 138 kV/69 kV Underground Alternative would be located along an access road, Magnolia Avenue, and Princess Joann Road. The neighborhood along these roads would be bisected by the underground portion of this alignment. Numerous residences (approximately 50) would be on either side of the route.

Environmental Impacts and Mitigation Measures

Construction of City of Santee 138 kV/69 kV Underground Alternative would require short-term use of backhoes, boring equipment, trenchers, dump trucks, mobile cranes, haul trucks, and street sweepers. Emissions from this equipment would not be substantially different from those that would occur with the Proposed Project, although they would occur in the proximity of receptors along the Santee neighborhood streets. Localized short-term construction emissions would occur (Impact A-1), and implementation of PP-56 through PP-60 and Mitigation Measures A-1a and A-1b would reduce potentially significant impacts during the construction phase to less than significant levels (Class II).

Operational air quality impacts (Impacts A-2 and A-3) would essentially be the same as described for the previous alternative and the Proposed Project (Class III).

Comparison to Proposed Project

Compared to the Proposed Project, this alternative would cause increased construction activities along Magnolia Avenue and Princess Joann Road due to the trenching required to install the underground 138 kV/69 kV cables, which would be more likely to cause a nuisance from dust or equipment emissions and would have a longer construction duration. Operational air quality impacts would be similar to the Proposed Project.

Comparison to Proposed Project with Future Circuit

Compared to the Proposed Project with future circuit, this alternative with the future circuit would cause increased construction activities along Magnolia Avenue and Princess Joann Road, which would be more likely to cause a nuisance from dust or construction equipment emissions. Operational air quality impacts would be similar to the Proposed Project.

D.2.4.5 City of Santee 230 kV Overhead Northern ROW Boundary Alternative

Environmental Setting

Section D.2.1 describes the general air quality conditions for this alternative route because it would be located adjacent to the alignment of the Proposed Project.

Environmental Impacts and Mitigation Measures

Construction of the 230 kV circuit on the north side of the ROW would require short-term use of equipment to install the new steel mono-poles. Emissions of dust and equipment exhaust from installation of installing new poles would be similar in duration and severity to those that would occur for installation of the 138 kV/69 kV poles under the Proposed Project. Localized short-term construction emissions would occur (Impact A-1), and implementation of PP-56 through PP-60 and Mitigation Measures A-1a and A-1b would reduce potentially significant impacts during the construction phase to less than significant levels (Class II).

Operational air quality impacts (Impacts A-2 and A-3) would essentially be the same as those described for the previous alternative and the Proposed Project (Class III).

Comparison to Proposed Project

Compared to the Proposed Project, construction of the poles on the north side of the ROW under this alternative would result in similar construction activities. Although the activity for installing the poles would be further from homes along the south side of the ROW, the construction activities would have a similar ability to cause a nuisance from dust or equipment emissions. During operation of this alternative, air quality impacts would be similar to those of the Proposed Project.

Comparison to Proposed Project with Future Circuit

Compared to the Proposed Project with future circuit, construction of the poles on the north side of the ROW under this alternative with the future circuit would result in similar construction activities, which have a similar ability to cause noise or vibration nuisances during construction. During operation of this alternative, air quality impacts would be similar to those of the Proposed Project with the future 230 kV circuit.

D.2.5 Environmental Impacts of the No Project Alternative

Under the No Project Alternative, the Proposed Project would not be constructed, eliminating the air quality impacts discussed in Section D.2.3. Because some transmission projects would continue regardless of the Proposed Project, the No Project Alternative would not change air quality impacts from such transmission improvements. The No Project Alternative would not improve the efficiency of power delivery through the grid, and it could result in new generation capacity being installed in San Diego County or elsewhere to compensate for existing transmission system limitations and anticipated loads. Although it would be speculative to predict the type and location or schedule of development for new generation facilities needed to overcome the transmission system constraints remaining under the No Project Alternative, new power plants would need to comply with local air pollution control requirements and the local licensing process, which would likely force air quality impacts to be reduced to less than significant levels.

D.2.6 Mitigation Monitoring, Compliance, and Reporting Table

Table D.2-8 shows the mitigation monitoring, compliance, and reporting program for Air Quality.

Table D.2-8. Mitigation Monitoring Program – Air Quality

IMPACT A-1	**Construction Activities Would Create Emissions of Dust and Equipment Exhaust (Class II)**
MITIGATION MEASURE	**A-1a: Suppress dust at all work or staging areas and on public roads.** SDG&E shall (1) pave, apply water three times daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas and staging areas if activity causes persistent visible emissions of fugitive dust beyond the work area; and (2) sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets.
Location	All project work areas
Monitoring / Reporting Action	Monitor visible emissions of fugitive dust
Effectiveness Criteria	Evidence of controlled fugitive dust outside the work area
Responsible Agency	CPUC
Timing	During construction
MITIGATION MEASURE	**A-1b: Use low-emission construction equipment.** SDG&E shall (1) use diesel engines that meet, at a minimum, 1996 CARB or U.S. EPA certified standards for off-road equipment that has a rating of more than 100 horsepower, or install high-pressure diesel injectors and retard the injection timing on any off-road equipment that was manufactured prior to 1996; (2) maintain construction equipment per manufacturing specifications; and (3) substitute small electric-powered equipment for diesel- and gasoline-powered construction equipment where feasible.
Location	All project work areas
Monitoring / Reporting Action	Monitor equipment fleet, proper maintenance, and commitments in construction contracts
Effectiveness Criteria	Evidence of construction contracts specifying low-emission equipment
Responsible Agency	CPUC
Timing	Before and during construction

D.2.7 References

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