

D.2 Air Quality

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 Proposed Project area. San Luis Obispo County has a Mediterranean climate. On the coast, summers and winters are mild compared to locations further inland. During the winter months, the Pacific High weakens and migrates to the south allowing Pacific storms into California. At Pismo Beach, which is approximately 15 miles southeast of DCPP, the average annual rainfall is just over 17 inches, most of which occurs between October and April (WRCC, 2004).

The DCPP site is within the coastal climate zone, where the ocean's influence is significant. The prevailing climate is semi-arid to arid. Low-level temperature inversions (from 1,000 to 2,500 feet) occur frequently over the coastal area. This tends to limit vertical dispersion of pollutants and can lead to increased concentrations of pollutants inland where prevailing winds carry the air. Prevailing onshore winds in the area of DCPP are from the northwest, which is the prevailing daytime wind direction for the entire county. The winds are also greatly influenced by local topography. At night, as the sea breeze dies, weak drainage winds flow down the coastal mountains and valleys to form a light, easterly land breeze. Occasional winter storms and offshore flows reverse the sea breezes so that winds flow from the east.

Existing Air Quality

Criteria Air Pollutants. With the assistance of the San Luis Obispo County Air Pollution Control District (SLOAPCD), the California Air Resources Board (CARB) compiles inventories and projections of major pollutant emissions and monitors air quality conditions in the region. Air quality conditions are tracked for both "criteria air pollutants" and "toxic air contaminants."

Criteria air pollutants are 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 (NO₂), sulfur dioxide (SO₂), 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 (VOC) and nitrogen oxides (NO_x) are also regulated as criteria pollutants because they are precursors to ozone formation. Certain VOCs may also qualify as TACs. Two subsets of particulate matter are inhalable particulate matter less than ten microns in diameter (PM₁₀) 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 and particulate matter have occurred in San Luis Obispo County. In spite of population growth and increased motor vehicle miles traveled, substantial progress has been made toward controlling these pollutants. Although air quality improvements have occurred, violations of ambient air quality standards for ozone and particulate matter can occur. The frequency of the violations and the current air quality conditions are summarized for ozone, PM₁₀, and PM_{2.5} in Table D.2-1. Refer to Section D.2.2 for details on the Applicable Regulations, Plans, and Standards.

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

Monitoring Locations	Year	Ozone	Ozone	Ozone	PM ₁₀	PM ₁₀	PM ₁₀	PM _{2.5}	PM _{2.5}
		Days Over 1-hr State Standard	Max 1-hr (ppm)	Max 8-hr (ppm)	Days Over 24-hr State Standard	Max 24-hr (µg/m ³)	Annual Average (µg/m ³)	Max 24-hr (µg/m ³)	Annual Average (µg/m ³)
San Luis Obispo County	1999	0	0.086	0.069	0	42.0	17.0	20.0	8.2
	2000	0	0.068	0.057	0	44.0	19.0	28.2	N/A
	2001	0	0.067	0.061	0	39.0	18.7	25.5	N/A
	2002	0	0.067	0.058	0	44.0	17.3	20.1	N/A
	2003	0	0.074	0.062	1	59.0	17.3	21.8	7.5

Source: Air Quality Data Website (CARB, 2004a).

Notes: State Standard: California Ambient Air Quality Standard (CAAQS)

ppm: parts per million

µg/m³: micrograms per cubic meter; days over PM₁₀ CAAQS is calculated based on monitoring every sixth day.

Station Locations: Grover City data for ozone and San Luis Obispo data for particulate matter.

Existing Emission Inventory

Emission sources in San Luis Obispo County are dominated by mobile sources, including on-highway motor vehicles, railroad locomotives, and marine vessels. CARB compiles regionwide emission inventories that include planning and forecast estimates for all groups of sources. The existing inventory shows that nearly 50 percent of all NO_x emissions in the region are from on-road motor vehicles, and more than 10 percent of NO_x emissions in the county are from construction-type equipment. Dust from construction activity in the county accounts for more than 10 percent of all PM₁₀. Relatively minor stationary sources are in use at DCPP for supporting routine operation of the power plant. The daily emissions from electric utilities, dust from construction activity, off-road equipment used during construction, ships, and all on-road motor vehicles are shown for inventory year 2003 in Table D.2-2.

Table D.2-2. Daily Emissions within San Luis Obispo County (2003)

Source Category	NO _x (ton/day)	VOC (ton/day)	PM ₁₀ (ton/day)	CO (ton/day)	SO _x (ton/day)
San Luis Obispo County totals	26.47	28.38	32.42	170.67	10.90
Source Category Subtotals					
Electric utilities / cogeneration	0.89	0.11	0.15	2.67	0.01
Construction and demolition dust	—	—	4.06	—	—
Off-road equipment (all construction and mining)	2.57	0.31	0.18	1.83	0.01
Ships and commercial boats (all vessels)	1.26	0.08	0.10	0.24	0.18
On-road motor vehicles (all on-road vehicles)	12.28	7.89	0.33	75.58	0.08

Source: 2003 estimated source category emissions from Almanac Emissions Data (CARB, 2004b).

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). 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.

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.

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 ppm
	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/m³: micrograms per cubic meter; "—": no standard
Source: CARB Ambient Air Quality Standards Table, 2003.

Attainment Status

Geographic areas are designated by either the U.S. Environmental Protection Agency (USEPA) or CARB as a nonattainment area if violations of the ambient air quality standards are persistent. San Luis Obispo County is classified as ~~a moderate nonattainment area for an area that attains~~ the State ozone standard, ~~and but~~ like many areas in the State of California, it is a nonattainment area with respect to the PM₁₀ CAAQS. Although the County was designated to be in attainment for the ozone CAAQS in 2004, the goal of SLOAPCD is to maintain the attainment status by mitigating projects that could cause new ozone violations from substantial emissions of ozone precursors. The area is designated as an attainment area for all other standards. A summary of the air quality status relative to the standards is provided in Table D.2-4.

Table D.2-4. Attainment Status of San Luis Obispo County

Air Basin	Ozone		Particulate Matter		CO		NO ₂		SO ₂	
	State	Federal	State	Federal	State	Federal	State	Federal	State	Federal
San Luis Obispo	Moderate Nonattainment <u>Attainment</u>	1-hr: A 8-hr: A	PM ₁₀ : N PM _{2.5} : A	PM ₁₀ : A PM _{2.5} : A	A	A	A	A	A	A

Note: A: Attains Ambient Air Quality Standards; N: Nonattainment.
Source: CARB, 2004c and USEPA, 2004.

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 non-attainment areas. These laws also provide the basis for the implementing agencies to develop mobile and stationary source performance standards.

The SLOAPCD 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 SLOAPCD maintains the regional Clean Air Plan, most recently revised in 2001. The Clean Air Plan is a compilation of measures and regulations that govern how the region will manage ozone precursors (NO_x and volatile organic compounds or VOCs) to eventually attain and maintain the State ozone standard. No State plan is required to meet State PM₁₀ 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 SLOAPCD permitting requirements [SLOAPCD Rule 201(C)]. Mobile and portable sources and temporary activities that cause emissions 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:

- **USEPA/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. These standards and ongoing rulemaking jointly address NO_x emissions and toxic particulate matter from diesel combustion.
- **CARB Portable Equipment Registration Program (SLOAPCD Rule 220).** This program allows owners or operators of portable engines and associated equipment to register their units under a State-wide portable program to operate their equipment throughout California without having to obtain individual permits from local air districts. Registered engines must comply with technological requirements, which may include injection timing retard, turbochargers, aftercoolers/intercoolers, or catalysts.
- **CARB Airborne Toxic Control Measures (SLOAPCD Rule 412).** CARB requires special dust control measures known as Asbestos Airborne Toxic Control Measures for any construction and grading operations in areas known to contain serpentinite soils with naturally occurring asbestos. Although this is a concern in parts of San Luis Obispo County, there is no serpentinite or asbestos-bearing ultramafic rock near development sites of the Proposed Project or alternatives.
- **CARB Diesel Risk Reduction Program.** In 2000, CARB established a number of strategies for reducing the exposure of Californians to toxic diesel particulate matter from on-road heavy-duty vehicles and off-road equipment. Through this program, CARB is implementing standards for lower levels of particulate matter emissions (0.15 grams per horsepower-hour for some engine classes) and cleaner diesel fuel (15 parts per million of sulfur) by 2006. The aim of the strategies is to provide a 75 percent reduction in diesel particulate matter from these sources by 2010 when compared to 2000 conditions (CARB, 2004d).

- **SLOAPCD Rule 401 – Visible Emissions.** This rule prohibits any activity causing air contaminant emissions darker than Ringelmann Number 2 (or approximately 40 percent opacity) for more than an aggregate of three minutes in any consecutive 60-minute time period.
- **SLOAPCD Rule 402 – Nuisance.** This rule prohibits any activity causing the discharge of air contaminants that cause or have a tendency to cause injury, detriment, nuisance, or annoyance to people and/or the public, or damage to any business or property.

D.2.3 Environmental Impacts and Mitigation Measures for the Proposed Project

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 a non-attainment area 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.

The SLOAPCD recommends using the CEQA process to mitigate emissions from any short-term construction activities that exceed quantitative thresholds. Mitigation defined in the SLOAPCD’s CEQA Air Quality Handbook (SLOAPCD, 2003) should be applied if the project causes potentially significant impacts in order to avoid conflicting with implementation of the applicable air quality plan. The thresholds of significance recommended for short-term activities are shown in Table D.2-5.

Table D.2-5. Significance Criteria Recommended by SLOAPCD

Construction Activities	NOx	VOC	PM ₁₀	CO	SOx
Quarterly Significance Criteria	2.5 ton/quarter	2.5 ton/quarter	2.5 ton/quarter	None	None
Daily Significance Criteria	185 lb/day	185 lb/day	PM ₁₀ : Any project with a grading area greater than 4.0 acres continuously worked.		

Source: SLOAPCD, 2003.

The SLOAPCD defines sensitive receptors as a school, hospital or senior center, or locations with a considerable number of children, elderly, or people with compromised respiratory or cardiac conditions. For projects having operations that emit TACs in close proximity to sensitive receptors, the SLOAPCD sometimes recommends preparing a health risk assessment to determine potential level of risk.

D.2.3.2 Replacement Steam Generator Transport

Delivery, offloading, and transport of the RSGs to the DCPP site would involve use of a wide range of diesel-powered and gasoline-powered equipment. Mobile and some heavy-duty, yet portable, stationary equipment would be used at Port San Luis for offloading, and tugboats would be used to maneuver the barges. The heavy-duty equipment that would be used to move the RSGs, provide portable power, and carry equipment includes large cranes, lifts, trucks, pumps, generators, and prime movers. Two push boats or tugboats may be used to stabilize the barge, and a crawler crane would be used to assemble and install a temporary bridge or barge ramp.

The Applicant provided an inventory of the equipment and vehicles anticipated for use during a typical day of RSG transport. This equipment inventory is shown in Table D.2-6.

Table D.2-6. Equipment and Vehicle Usage for RSG Transport

Type of Equipment	Quantity	Size or Power Rating	Fuel Type	Operating Hours or Miles Traveled Daily
Prime Movers				
Tugboats	2	1700 and 2300 hp	Diesel	24 hr
Tractor trailers	6	500 hp	Diesel	2 hr
Service Fleet: Off-Road				
Tractor trailers	3	400 hp	Diesel	2 hr
Hydraulic pumps for gantry crane	2	200 hp	Diesel	4 hr
Forklift	3	200 hp	Diesel	4 hr
Cranes	2	200 hp	Diesel	4 hr
Light towers	4	25 hp	Diesel	8 hr
Service Fleet: On-Road				
Tire/Utility/Mechanic Trucks	5	Light Duty Truck	Diesel	14 miles
Pickup Trucks	6	Light Duty Truck	Diesel	14 miles
Gasoline SUVs/autos	6	Light Duty Truck	Gas	14 miles
Gasoline traffic control vehicles	2	Light Duty Truck	Gas	14 miles

Source: PG&E, 2004a, Table 5.3-1 and PG&E, 2004b, Attachment 12.

Each of the transport equipment activities would cause short-term emissions from combustion of the fuels (NO_x, VOC, CO, SO₂, and diesel-related particulate matter and other pollutants). The equipment used by the Applicant would need to comply with the applicable standards of the USEPA/CARB Off-Road Mobile Source rules and may voluntarily comply with the CARB Portable Equipment Registration Program. The Applicant has committed to requiring its contractor to implement best management practices, including preparing a Diesel Combustion Emission Control Plan (PG&E, 2004c).

All of the emission sources would be temporary, occurring for only a few hours at any single location. At either end of the RSG transport route, the emissions would be persistent for no more than a few days during the period when the eight RSGs would be transferred to and from the transport trailers.

Diesel particulate matter from the heavy-duty equipment is a TAC that can cause both chronic and carcinogenic health effects. CARB lists this pollutant, and others routinely emitted as byproducts of fuel combustion, as a TAC with no identified threshold level below which there are no significant effects. ~~The hazardous effect would occur only if exposure is prolonged (over several years) and sensitive receptors are located near the sources.~~ Diesel emissions from equipment may also create objectionable odors.

Because the emissions from the equipment would be short-term, SLOAPCD does not recommend a detailed investigation of diesel particulate matter. However, SLOAPCD provided comments to the CPUC recommending that a human health risk assessment be prepared for the short-term (or acute) health risks associated with ~~small quantities of~~ acrolein emissions that would be caused by diesel equipment (SLOAPCD, 2004). Acrolein, an aldehyde, is a TAC found in tobacco smoke, forest fire emissions, and gasoline and diesel exhaust.

Impact A-1: Replacement activities would cause emissions from transport and construction equipment

Transporters, tugboats, and other heavy-duty equipment such as cranes and lifts would be used for RSG offloading and transport to the temporary RSG storage facility. The duration of transport activity would be about two to four days for each of the two separate shipments. Along the route, the sources would travel on paved surfaces at very slow speeds, ~~which essentially eliminates the likelihood of notable fugitive dust emissions~~. Combustion of fuels during transport of the RSGs would generate emissions (NOx, VOC, CO, SO₂, and diesel-related particulate matter) that would affect local air quality for the brief duration of transport activities.

Because San Luis Obispo County is a nonattainment area for ~~ozone and~~ particulate matter for CAAQS, these emissions would temporarily contribute to the existing violations of ~~ozone and~~ particulate matter in the region, and they could disrupt maintenance of the ozone CAAQS. To characterize the air quality impact, independent emission calculations were prepared based on the level of activity anticipated by the Applicant for a typical day of transport. The estimated emissions are shown in Table D.2-7.

Table D.2-7. Daily Emissions from RSG Transport

Transport Activity	NOx (lb/day)	VOC (lb/day)	PM ₁₀ (lb/day)	CO (lb/day)	SOx (lb/day)
Tugboats and barge (full day for stabilizing barge)	390.96	28.56	11.76	85.92	0.00
Off-road transport equipment (prime movers and cranes <u>with entrained road dust</u>)	173.99	8.44	5.78 <u>140.18</u>	38.64	17.50
On-road trucks / traffic control	0.80	0.40	0.50	3.10	0.00
Worker vehicles	5.20	3.50	5.60	47.30	0.00
Peak Daily Total for Transport	570.95	40.90	23.64 <u>158.04</u>	174.96	17.50
Significance Criteria	185	185	None	None	None

Source: PG&E, 2004b, Attachment 12 and PG&E, 2004a, Table 5.3-2.

Quarterly emissions from all transport activities are calculated by assuming that no more than five days of transport trips would occur, but that worker vehicle activity could occur throughout the 90-day period. The quarterly emissions for the transport trips of each shipment as well as Proposed Project worker vehicle trips are shown in Table D.2-8.

Table D.2-8. Quarterly Emissions from Transport

Transport Activity	NOx (ton)	VOC (ton)	PM ₁₀ (ton)	CO (ton)	SOx (ton)
Tugboats and barge	0.98	0.07	0.03	0.21	0.00
Off-road transport equipment	0.43	0.02	0.04 0.35	0.10	0.04
On-road trucks / traffic control	0.00	0.00	0.00	0.01	0.00
Worker vehicles	0.23	0.16	0.25	2.13	0.00
Total Emissions (per quarter)	1.65	0.25	0.30 0.63	2.45	0.04
Significance Criteria	2.5	2.5	2.5	None	None

Source: PG&E, 2004a, Table 5.3-3.

Daily emissions of NOx would be potentially significant (Class II), as shown in Table D.2-7, primarily as a result of tugboat operations associated with shipping the RSGs and stabilizing the barge. ~~Emissions of contaminants (NOx, VOC, CO, SO₂, and diesel related particulate matter) that would routinely occur in the exhaust of most marine vessels are included by SLOAPCD in the regionwide inventory that is the basis for regional attainment. However, the SLOAPCD emission inventory for attainment planning does not include tugboat activity (CARB, 2004b).~~

The potentially significant emissions shown above are based on the use of newer, or lower-emitting, transport equipment as part of a Diesel Combustion Emission Control Plan and the use of a Trip Reduction Plan that minimizes total DCPP traffic~~double occupancy vehicles or a vanpool by all commuters in worker vehicles. If the transport equipment is poorly maintained or if out of date engines are used, then the off road equipment emissions from transport would be likely to temporarily exceed the 185 pound per day significance criteria for daily emissions.~~—To manage the emissions from transport and all other construction-type activities, the Applicant has committed to implementing best management practices (BMPs) that are considered to be a part of the Proposed Project (PG&E, 2004c), including:

- Use of Caterpillar pre-chamber diesel engines (or equivalent) together with proper maintenance and operation to reduce emissions of NOx where feasible;
- Electrify equipment where feasible;
- Maintain all fossil-fueled equipment in tune per manufacturers specifications;
- Encourage use of catalytic converters on gasoline-powered equipment;
- Substitute diesel-powered equipment with gasoline-powered equipment where feasible;
- Use compressed natural gas or propane-powered portable equipment (e.g., compressors, generators, etc.) onsite instead of diesel-powered equipment where feasible;
- Fuel all off-road and portable diesel-powered equipment, including but not limited to, bulldozers, graders, cranes, loaders, scrapers, backhoes, generator sets, compressors, and auxiliary power units, with CARB-certified motor vehicle fuel if not operated on public roads;
- To the extent feasible, maximize the use of diesel construction equipment meeting the CARB's 1996 or newer certification standard for off-road heavy-duty diesel engines;
- Schedule construction truck trips during non-peak hours to reduce peak-hour emissions where feasible;
- Limit the length of the construction workday period, if necessary; and
- Implement the phasing of construction activities, if appropriate.

The SLOAPCD's CEQA Air Quality Handbook recommends implementing Best Available Control Technology for construction-related equipment (CBACT) if short-term emissions exceed the criteria (SLOAPCD, 2003). The definition of CBACT is periodically updated by SLOAPCD as diesel equipment technology improves, which means that determination of appropriate CBACT devices must be performed in consultation with SLOAPCD staff. The CBACT determination may also be part of an overall Construction Activity Management Plan (CAMP) that can address activity phasing or scheduling to minimize the amount of large construction equipment operating during any given time. Implementation of Mitigation Measures A-1a and A-1b, below, would ensure that trips are reduced to the extent feasible consistent with traffic mitigation goals established by Mitigation Measure T-3a, and that CBACT is implemented according to the most up-to-date recommendations of the SLOAPCD. Despite this recommended mitigation, emissions from tugboats would likely remain above the daily threshold established by the SLOAPCD.

The SLOAPCD recommendation to address the residual impact of tugboat emissions would be accomplished by an Applicant-funded mitigation program that provides emission reductions (or offsets) at non-project sources in the Avila Beach and Port San Luis communities. The level of funding recommended by SLOAPCD ~~would be is~~ calculated based on the quantity of daily project NO_x emissions exceeding the threshold (SLOAPCD, 2004). ~~Preliminary i~~nformation in Table D.2-7 indicates that ~~approximately~~ 1.544 tons of NO_x in excess of the thresholds would be generated by the short-term transport activity (i.e., 386 pounds over the threshold for eight days total). ~~According to 2004 cost data provided by SLOAPCD for this Proposed Project, t~~he cost of reducing one excess ton of NO_x is currently around \$8,500~~13,600~~. ~~The precise amount of funding or specific offsetting approach needed to mitigate the tugboat NO_x emissions would depend on the type of tugboats used and the specific operating schedule, and it should be determined through negotiation with the SLOAPCD. It would be appropriate to conduct this effort after a detailed offloading and transport plan is developed by PG&E. The~~ Therefore, \$21,000 ~~would be sufficient to fund~~ reductions ~~would be funded~~ through grant programs ~~managed by the SLOAPCD~~ like the Carl Moyer Heavy-Duty Engine Emission Reduction Program, which sponsors projects reducing NO_x and PM₁₀ from a wide range of sources such as marine vessels, agricultural engines, and stationary engines. If the SLOAPCD manages such a program for the Applicant, a 15 percent administration fee (\$3,150) would also be needed. Mitigation Measure A-1c would implement the program and the emission reductions. By providing ~~approximately~~ 1.544 tons of excess NO_x emission reductions (Mitigation Measure A-1c) and by implementing Mitigation Measures A-1a and A-1b, ~~would fully mitigate~~ the NO_x impacts caused by transport activities would be mitigated ~~so that no impact to air quality standards would occur~~ (Class II).

TAC emissions and odors from transport activities could cause a significant impact ~~according to the SLOAPCD~~ primarily due to the proximity of the activities to homes in Avila Beach and Port San Luis where children or elderly may reside (Class II). The health risk of TAC emissions is a function of lifetime average daily dose and the potency of the toxic contaminant. The known effects of diesel particulate matter are chronic or carcinogenic, and acute effects (from short-term exposure) are less well understood. There is no acute reference exposure level for diesel particulate matter. Because the dose of diesel particulate caused by the project, over the few days of transport, would be small when averaged over an entire 70-year lifetime, the short duration of these transport activities is not conducive for conducting a meaningful long-term human health risk assessment (SLOAPCD, 2004), and the health risks of diesel particulate matter would not likely be significant. Contaminants with known acute effects, such as acrolein, would be more likely to cause adverse health risks, as described below. ~~The short-term effects are of particular interest, given that transport activities would be unlikely to cause long-term effects. Because of the short duration, the effects of diesel particulate matter and odors would not be significant.~~

The SLOAPCD recommends a detailed analysis of acrolein emissions from diesel powered equipment and ambient concentrations (SLOAPCD, 2004). In order to assess the acute health hazards of acrolein, detailed information would be needed about the specific tugboats and heavy duty on-land equipment that would be used and their operating schedules. It would be appropriate to conduct this analysis after a detailed offloading and transport plan is developed. To ensure that surrounding receptors would not be exposed to substantial acrolein concentrations, Mitigation Measure A-1d is recommended. Depending upon the results of the health hazard analysis, public access in the immediate vicinity of offloading activities may need to be temporarily restricted to reduce this potential impact to a less than significant level. Mitigation Measure A-1d would also effectively avoid the short-term diesel odor impacts to homes in Avila Beach and Port San Luis.

By implementing the following feasible recommendations for trip reduction, diesel emissions control, mitigation funding, and analysis of acute health risks, shown in Mitigation Measures A-1a, A-1b, A-1c, and A-1d, the potentially significant ~~yet~~-short-term impact of emissions from transport activities would be reduced to a less than significant level (Class II).

Mitigation Measures for Impact A-1, Replacement activities would cause emissions from transport and construction equipment

- A-1a Develop and implement a trip reduction plan.** PG&E shall develop and implement a Trip Reduction Plan in cooperation with the SLOAPCD and CPUC to provide emission and congestion benefits for the duration of the steam generator replacement project. The goal of the plan shall be to achieve an average project-worker vehicle ~~occupancy of 2.0 and a project worker vanpool ridership of 10 percent~~ trip reduction of 50 percent as established by Mitigation Measure T-3a. The plan shall be approved by the SLOAPCD and CPUC at least 60 days before commencement of transport or construction activities.
- A-1b Develop and implement a diesel combustion emission control plan.** PG&E shall develop and implement a Diesel Combustion Emission Control Plan to implement the SLOAPCD recommendation of Best Available Control Technology for construction equipment (CBACT). The plan shall specify use of diesel combustion emission control measures consistent with recommendations identified in the most-recent SLOAPCD CEQA Air Quality Handbook, such as, but not limited to idling limitations, diesel oxidation catalysts, catalyzed diesel particulate filters, or other District approved emission reduction retrofit devices. The plan and CBACT approach shall be developed in cooperation with SLOAPCD and CPUC staff before commencing transport or construction activities. The complete plan shall be submitted to the CPUC at least 60 days prior to transport or construction activities.
- A-1c Offset tugboat NO_x emissions with an offsite mitigation program.** PG&E shall develop and implement or fund an offsite mitigation program that ~~would provide~~ approximately 1.544 tons of NO_x reductions from existing sources in the Avila Beach and Port San Luis communities. PG&E shall initiate this program such that the emission reduction project(s) is in place prior to commencing the RSG transport activities. PG&E shall accomplish this either by developing and implementing a program of reductions (e.g., installing diesel engine or marine vessel emission control systems) or by providing mitigation funding and a 15 percent administration fee to the SLOAPCD for emission-reducing projects identified by the SLOAPCD (e.g., through the Carl Moyer Program). If PG&E elects to implement its own emission reductions, then the approach shall be developed in cooperation with SLOAPCD and CPUC staff.

A-1d Conduct an acute health hazard screening analysis for the toxic diesel component acrolein. At least 60 days prior to the start of transport activities, PG&E shall perform an acute health hazard screening analysis for acrolein emissions during offloading and transport activities at Port San Luis and submit the analysis to the SLOAPCD and CPUC. The health hazard index shall be identified for the point of maximum impact, and all locations with a health hazard index greater than 1.0 shall be identified. PG&E shall consult with SLOAPCD staff to determine the appropriate level of mitigation (e.g., by restricting access or changing the proposed sequence of activities to minimize emissions) if the screening analysis reveals a maximum health hazard index greater than 0.1. PG&E shall develop and implement a strategy approved by SLOAPCD for temporarily restricting public access from any location where the acute health hazard index would be greater than 1.0, if necessary, before commencing offloading or transport activities.

D.2.3.3 Replacement Steam Generator Staging and Preparation

Construction equipment and a large temporary workforce would be mobilized during the design, staging, and preparation periods of the Proposed Project. It would be necessary to build or fabricate about 90,000 square feet of temporary facilities or modify existing buildings to house most project activities. The temporary staging area (TSA) would be developed to include the RSG storage facility and offices, fabrication, training, mock-up, weld testing, warehouse, and laydown areas. Preparing the containment access, decontamination, and parking facilities would also be included with this work. Mobile and heavy-duty off-road equipment used to construct these facilities would be diesel- and gasoline-powered. The range of equipment would include cranes, lifts, welders, generators, compressors, and other specialized tools. No substantial amount of earthmoving would occur because the TSA be located on a previously developed flat terrace area at the southern end of the site.

The construction activities during staging and preparation would involve routine construction equipment and on-road traffic. Emissions from on-road traffic would be caused by workers commuting and during the delivery of equipment, materials, or portable facilities (e.g., trailers). Use of various heavy-duty construction equipment would occur concurrently during construction of temporary facilities. The Applicant does not anticipate that emissions from staging and preparation activities would overlap with emissions from transport of the RSGs (Section D.2.3.2). However, similar to the emissions during transport (Impact A-1), combustion emissions from equipment used for staging and preparation activities would contribute to the existing violations of ~~ozone and~~ particulate matter or disrupt maintenance of ozone concentrations in the region during the short-term duration of the work. Tables D.2-8a and D.2-8b summarize the estimated emissions from construction of the temporary staging and preparation facilities, along with construction of the OSG Storage Facility (described in Section D.2.3.4).

Emissions of dust would be unlikely to cause a significant impact because the amount of land disturbed would be minimal (less than four acres). Additionally, the Applicant has committed (PG&E, 2004c) to implementing measures for dust control for all construction-type activities. The following measures for minimizing this less than significant impact are considered to be a part of the Proposed Project:

- Reducing the amount of disturbed area where possible;
- Watering surfaces in sufficient quantities to reduce airborne dust;
- Paving or stabilizing all disturbed work areas as soon as possible after soil-disturbing activities;
- Sweeping streets at the end of each day if visible soil material is carried onto adjacent paved roads; and
- Designating a person or persons to monitor the dust control program and order increased watering, as necessary, to prevent transport of dust offsite.

Table D.2-8a. Daily Emissions during RSG Staging and Preparation

	<u>NOx</u>	<u>VOC</u>	<u>PM₁₀</u>	<u>CO</u>	<u>SOx</u>
<u>RSG Staging and Preparation</u>	<u>(lb/day)</u>	<u>(lb/day)</u>	<u>(lb/day)</u>	<u>(lb/day)</u>	<u>(lb/day)</u>
<u>Construction equipment/dust</u>	<u>151.36</u>	<u>23.09</u>	<u>17.41</u>	<u>183.65</u>	<u>0.10</u>
<u>Concrete production</u>	<u>=</u>	<u>=</u>	<u>35.67</u>	<u>=</u>	<u>=</u>
<u>Commuters</u>	<u>5.20</u>	<u>3.50</u>	<u>5.60</u>	<u>47.30</u>	<u>0.00</u>
<u>Peak Daily Total for RSG Staging and Preparation</u>	<u>156.6</u>	<u>26.6</u>	<u>58.7</u>	<u>231.0</u>	<u>0.1</u>
<u>Significance Criteria</u>	<u>185</u>	<u>185</u>	<u>None</u>	<u>None</u>	<u>None</u>

Source: URBEMIS2002 estimates for construction, U.S. EPA AP-42 Section 11.12 for concrete, and PG&E, 2004a, Table 5.3-2 for commuters.

Table D.2-8b. Quarterly Emissions during RSG Staging and Preparation

	<u>NOx</u>	<u>VOC</u>	<u>PM₁₀</u>	<u>CO</u>	<u>SOx</u>
<u>RSG Staging and Preparation</u>	<u>(ton/quarter)</u>	<u>(ton/quarter)</u>	<u>(ton/quarter)</u>	<u>(ton/quarter)</u>	<u>(ton/quarter)</u>
<u>Construction equipment/dust</u>	<u>4.81</u>	<u>0.66</u>	<u>0.20</u>	<u>5.29</u>	<u>0.05</u>
<u>Concrete production</u>	<u>=</u>	<u>=</u>	<u>0.36</u>	<u>=</u>	<u>=</u>
<u>Commuters</u>	<u>0.23</u>	<u>0.16</u>	<u>0.25</u>	<u>2.13</u>	<u>0.00</u>
<u>Quarterly Emissions</u>	<u>5.04</u>	<u>0.82</u>	<u>0.81</u>	<u>7.41</u>	<u>0.05</u>
<u>Significance Criteria</u>	<u>2.5</u>	<u>2.5</u>	<u>2.5</u>	<u>None</u>	<u>None</u>

Source: URBEMIS2002 estimates for construction, U.S. EPA AP-42 Section 11.12 for concrete, and PG&E, 2004a, Table 5.3-3 for commuters.

During construction of the temporary facilities, [Table D.2-8b shows that](#) temporary emissions from the construction equipment and commuter vehicles would likely exceed the ~~185 pound per day~~ significance criteria for ~~quarterly daily~~ NOx emissions (similar to Impact A-1, [which would exceed the daily threshold](#)). As such, emissions from construction or removal of temporary staging facilities could substantially contribute to impeding attainment of the ambient air quality standards. The air quality impacts from staging and preparation activities would therefore be potentially significant (Impact A-1, Class II) unless feasible mitigation is implemented. Measures identified above (Mitigation Measures A-1a and A-1b) would reduce impacts from on-road traffic emissions and diesel equipment combustion emissions in a manner that would be consistent with SLOAPCD recommendations, which [specify CBACT \(SLOAPCD, 2003 p. 6-4\)](#). [These measures](#) would reduce this impact to a less than significant level.

D.2.3.4 Original Steam Generator Removal, Transport, and Storage

Removal, staging, transportation, and storage of the OSGs would involve use of typical construction equipment, such as cranes, lifts, and trucks. Transporters and other specialized sources (described further below) would also be needed. Heavy-duty equipment used for this work would be similar to that needed for facility staging and preparation (see Section D.2.3.3), except for the addition of transporters and lifts. Also, during the period of peak employment, up to ~~900-950~~ additional workers would commute to the DCPP site, causing additional worker vehicle commute emissions. Use of various heavy-duty construction equipment (e.g., lifts, steel cutting tools) would occur concurrently during steam generator removal, transportation, and storage.

Similar to the emissions during RSG transport (Impact A-1), combustion emissions from equipment used for OSG removal, transportation, and storage activities would contribute to the existing violations of ~~ozone and~~ particulate matter [or disrupt maintenance of ozone concentrations](#) in the region during the

short-term duration of the work. The Applicant provided an inventory of the equipment and vehicles anticipated for use during OSG removal and transportation. This equipment inventory is shown in Table D.2-9.

Table D.2-9. Equipment and Vehicle Usage for OSG Removal and Transportation

Type of Equipment	Quantity	Size or Power Rating	Fuel Type	Operating Hours or Miles Traveled Daily
Prime Movers				
Platform trailers	2	500 hp	Diesel	2 hr
Service Fleet: Off-Road				
Hydraulic pumps for gantry crane	1	400 hp	Diesel	6 hr
Lift system	1	200 hp	Diesel	6 hr

Source: PG&E, 2004a, Table 5.3-7.

Assuming implementation of a Diesel Combustion Emission Control Plan and use of [a Trip Reduction Plan that minimizes total DCP traffic](#)~~double occupancy vehicles or a vanpool by all commuters in worker vehicles~~ (Mitigation Measures A-1a and A-1b), the emissions from these activities would be as shown in Tables [D.2-10](#) and [D.2-10a](#).

Table D.2-10. Daily Emissions during OSG Removal and Transportation

	NO _x (lb/day)	VOC (lb/day)	PM ₁₀ (lb/day)	CO (lb/day)	Sox (lb/day)
OSG Removal Activity					
Prime movers and off-road fleet	27.0	4.4	1.0	37.7	0.0
Worker vehicles	23.6 <u>26.7</u>	15.8 <u>17.9</u>	25.0 <u>28.3</u>	212.7 <u>240.6</u>	0.1
Peak Daily Total for OSG Removal	<u>50.653.7</u>	<u>20.222.3</u>	<u>26.029.3</u>	<u>250.4278.3</u>	0.1
Significance Criteria	185	185	None	None	None

Source: PG&E, 2004c, Attachment 21.

Table D.2-10a. Quarterly Emissions during OSG Removal and Transportation

	NO _x (ton/quarter)	VOC (ton/quarter)	PM ₁₀ (ton/quarter)	CO (ton/quarter)	SO _x (ton/quarter)
OSG Removal Activity					
Prime movers and off-road fleet	<u>0.11</u>	<u>0.02</u>	<u>0.01</u>	<u>0.15</u>	<u>0.00</u>
Worker vehicles	<u>1.20</u>	<u>0.80</u>	<u>1.27</u>	<u>10.83</u>	<u>0.01</u>
Quarterly Emissions	<u>1.31</u>	<u>0.82</u>	<u>1.28</u>	<u>10.98</u>	<u>0.01</u>
Significance Criteria	<u>2.5</u>	<u>2.5</u>	<u>2.5</u>	<u>None</u>	<u>None</u>

Source: PG&E, 2004c, Attachment 21; adjusted for 90 days worker vehicles.

The emission estimates in Tables [D.2-10](#) and [D.2-10a](#) show that OSG removal and transportation activities would not substantially contribute to impeding attainment of the ambient air quality standards (Class II) provided that Mitigation Measures A-1a and A-1b are implemented.

Original Steam Generator Storage Facility

Storage of the OSGs would involve construction of a 18,000-square-foot reinforced concrete OSG Storage Facility. Excavation and relocation of approximately 2,300 cubic yards of material, along with backfilling, grading, and paving would be necessary. This construction activity would cause emissions similar to those for constructing the temporary staging facilities (see Section D.2.3.3), except for the increased earthwork and the need for concrete placement (discussed below). The Applicant anticipates that construction of the OSG Storage Facility would be completed before the RSGs are delivered, and that emissions from the transport activities would not overlap. The emissions of OSG Storage Facility construction could however overlap with those for constructing the temporary staging facilities.

Emissions that would occur from construction of the OSG Storage Facility and overlap with potentially significant emissions during staging, identified in Section D.2.3.3 above, could similarly contribute to impeding attainment of the ambient air quality standards. The air quality impacts from this construction activity would therefore be potentially significant (Impact A-1, Class II) unless feasible mitigation is implemented. Measures identified above (Mitigation Measures A-1a and A-1b) would reduce impacts from on-road traffic emissions and diesel equipment combustion emissions to a less than significant level.

Impact A-2: Construction of the Original Steam Generator Storage Facility would cause emissions from portable concrete batch sources

A temporary onsite concrete batch plant would supply the concrete for the OSG Storage Facility. Dry material handling and concrete mixing equipment would create emissions of dust and combustion contaminants. The portable concrete batch facility could require either a permit or registration with the SLOAPCD. As a portable equipment unit, the concrete batch facility may be registered with the Statewide Portable Equipment Registration Program (SLOAPCD Rule 220). The portable concrete batch sources could cause an adverse air quality impact if the Applicant does not comply with the requirements of the Portable Equipment Registration Program or obtain a permit to operate from the SLOAPCD. Registering or permitting the equipment would ensure that SLOAPCD-recommended pollution control devices are in place on the batch facility and that the anticipated emissions would be included in the inventory used for attainment planning. By implementing the following feasible recommendations (Mitigation Measure A-2a), the emissions would not be expected to impede attainment or maintenance of the ambient air quality standards, and this impact would be reduced to a less than significant level (Class II).

Mitigation Measures for Impact A-2, Construction of the Original Steam Generator Storage Facility would cause emissions from portable concrete batch sources

A-2a Use registered portable equipment. PG&E or its contractor shall (1) use portable concrete batch sources that are registered in the Statewide Portable Equipment Registration Program or permitted by the SLOAPCD; and (2) maintain the portable equipment according to the specifications of the Program or SLOAPCD. PG&E shall provide evidence to CPUC indicating that appropriate registration or permits are in place.

D.2.3.5 Replacement Steam Generator Installation

Installation of the RSGs would involve use of typical construction equipment, such as cranes, lifts, trucks, and welders. Emissions from this equipment would be similar to those related to RSG staging and preparation and OSG removal and transport described above (Sections D.2.3.3 and D.2.3.4). Based on the emission calculations provided for OSG removal and transportation, emissions during steam gene-

rator installation are not expected to impede attainment or maintenance of the ambient air quality standards, and with Mitigation Measures A-1a and A-1b, the air quality impacts would be less than significant (Impact A-1, Class II).

There would be no permanent emission sources associated with the Proposed Project or the return to service, and after project completion, air quality conditions would be unchanged when compared to the existing environmental setting.

D.2.4 Environmental Impacts and Mitigation Measures for the Alternatives

D.2.4.1 Replacement Steam Generator Offloading Alternative

The Replacement Steam Generator Offloading Alternative would involve use of heavy-duty equipment for offloading, transport, and barge maneuvering. In comparison to the Proposed Project, the equipment would not need to be used as much because the Intake Cove offloading location is closer to the proposed temporary staging areas. Tugboats, large cranes, and heavy-duty prime movers are the major sources that would be used. The Applicant provided an inventory of this equipment and the vehicles anticipated for use during a typical day of RSG transport from the Intake Cove to the RSG Storage Facility. The equipment inventory is shown in Table D.2-11.

Table D.2-11. Equipment and Vehicle Usage for RSG Offloading, Replacement Steam Generator Offloading Alternative

Type of Equipment	Quantity	Size or Power Rating	Fuel Type	Operating Hours or Miles Traveled Daily
Prime Movers				
Tugboats	2	1700 and 2300 hp	Diesel	24 hr
Tractor trailers	3	500 hp	Diesel	2 hr
Service Fleet: Off-Road				
Tractor trailers	3	400 hp	Diesel	1 hr
Hydraulic pumps for gantry crane	2	200 hp	Diesel	2 hr
Forklift	3	200 hp	Diesel	2 hr
Cranes	2	200 hp	Diesel	2 hr
Light towers	2	25 hp	Diesel	8 hr
Service Fleet: On-Road				
Tire/Utility/Mechanic trucks	5	Light Duty Truck	Diesel	2 miles
Pickup trucks	6	Light Duty Truck	Diesel	2 miles
Gasoline SUVs/autos	6	Light Duty Truck	Gas	2 miles

Source: PG&E, 2004a, Table 5.3-4 and PG&E, 2004b, Attachment 12.

Each of the transport equipment and activities would cause short-term emissions from combustion of the fuels (NO_x, VOC, CO, SO₂, and diesel-related particulate matter). The equipment used by the Applicant would need to comply with the applicable standards of the USEPA/CARB Off-Road Mobile Source rules and may voluntarily comply with the CARB Portable Equipment Registration Program or a Diesel Combustion Emission Control Plan developed by the Applicant (PG&E, 2004c). All of the sources would be temporary, probably lasting for two to four days for each of two shipments. The transport equipment and offloading activity would occur on paved surfaces resulting in very limited fugitive dust emissions. Emissions from transport operations (NO_x, VOC, CO, SO₂, and diesel-related particulate matter) would, how-

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ever, affect local air quality for the brief duration of transport activities. These emissions would temporarily contribute to the existing violations of ~~ozone and~~ particulate matter or disrupt maintenance of ozone concentrations in the region (Impact A-1). The estimated emissions are shown in Table D.2-12.

Table D.2-12. Daily Emissions from RSG Offloading, Replacement Steam Generator Offloading Alternative

Transport Activity	NOx (lb/day)	VOC (lb/day)	PM ₁₀ (lb/day)	CO (lb/day)	SOx (lb/day)
Tugboats and barge (full day for stabilizing barge)	390.96	28.56	11.76	85.92	0.00
Off-road transport equipment (prime movers and cranes <u>with entrained road dust</u>)	86.93	4.33	<u>2.8770.07</u>	16.94	17.50
On-road trucks	0.10	0.10	0.10	0.60	0.00
Worker vehicles	5.20	3.50	5.60	47.30	0.00
Peak Daily Total for Transport	483.19	36.49	<u>20.3387.53</u>	150.76	17.50
Significance Criteria	185	185	None	None	None

Source: PG&E, 2004b, Attachment 12 and PG&E, 2004a, Table 5.3-5.

Quarterly emissions from transport activities at the Intake Cove are calculated by assuming that no more than five days of transport trips would occur but that worker vehicle activity could occur throughout the 90-day period. The quarterly emissions for the transport of each shipment to the Intake Cove are shown in Table D.2-13.

Table D.2-13. Quarterly Emissions from Offloading, Replacement Steam Generator Offloading Alternative

Transport Activity	NOx (ton)	VOC (ton)	PM ₁₀ (ton)	CO (ton)	SOx (ton)
Tugboats and barge	0.98	0.07	0.03	0.21	0.00
Off-road transport equipment	0.22	0.01	<u>0.040.18</u>	0.04	0.04
On-road trucks	0.00	0.00	0.00	0.01	0.00
Worker vehicles	0.23	0.16	0.25	2.13	0.00
Total Emissions (per quarter)	1.43	0.24	<u>0.290.46</u>	2.39	0.04
Significance Criteria	2.5	2.5	2.5	None	None

Source: PG&E, 2004a, Table 5.3-6.

The Replacement Steam Generator Offloading Alternative would cause potentially significant emissions from transport equipment and worker vehicles during transport, similar to but less intense and of a shorter duration than the impact caused by the Proposed Project (Impact A-1). The location on DCPP property and the proximity of this offloading site to the proposed staging area would eliminate the need for certain transport equipment. The need for tugboats would however be similar to the Proposed Project. For the Replacement Steam Generator Offloading Alternative, the reduced need for transport would result in NOx emissions in excess of the thresholds (i.e., 298 pounds over the threshold for eight days total). Offsetting the tugboat emissions would fully mitigate the excess NOx emissions caused by tugboat activities so that no impact to air quality standards would occur. Impacts related to toxic air contaminants and odors from the Replacement Steam Generator Offloading Alternative would not cause a significant impact because there would be no sensitive receptors in close proximity.

Implementing the recommendations for trip reduction and diesel emissions control, identified above as Mitigation Measures A-1a and A-1b, and for offsetting tugboat emissions, Mitigation Measure A-1c, the short-term impact of emissions from transport through Intake Cove would be reduced to a less than significant level (Class II).

D.2.4.2 Temporary Staging Area Alternatives

The air quality impacts of developing the RSG storage facility and other temporary staging facilities at every alternative TSA location would be similar to each other and to the Proposed Project. In each case, mobile and heavy-duty off-road equipment would create diesel combustion emissions, and emissions from on-road traffic would be caused by workers commuting and during the delivery of construction materials. Similar to the emissions caused by transport activities of the Proposed Project (Impact A-1), combustion emissions from equipment at each alternative TSA location would contribute to regional violations of ~~ozone and~~ particulate matter or disrupt maintenance of ozone concentrations during the short-term duration of the work. Emissions of dust would not likely cause a significant impact because all alternative TSA locations would be located on previously paved surfaces, and the amount of land disturbed would be minimal.

The combustion emissions from activity at each alternative TSA location would be potentially significant (Impact A-1, Class II) unless feasible mitigation is implemented. Measures identified above (Mitigation Measures A-1a and A-1b) would reduce impacts from on-road traffic emissions and diesel equipment combustion emissions to a less than significant level.

D.2.4.3 Original Steam Generator Storage Facility Location Alternatives

The air quality impacts of developing the OSG Storage Facility Location Alternatives would be similar to one another and to the Proposed Project and preferred over the OSG Offsite Alternative discussed below. In each case, off-road construction equipment used for earthwork, excavation, and backfilling would create diesel combustion emissions, and emissions from on-road traffic would be caused by workers commuting and during the delivery of construction materials. Similar to the emissions caused by transport activities of the Proposed Project (Impact A-1), combustion emissions at each alternative OSG Storage Facility location would contribute to regional violations of ~~ozone and~~ particulate matter or disrupt maintenance of ozone concentrations during the short-term duration of the work. A temporary onsite concrete batch plant would be used, and it would create emissions of dust and combustion contaminants (Impact A-2), requiring a permit or registration with the SLOAPCD.

The combustion emissions from equipment at each alternative OSG Storage Facility location (Impact A-1, Class II) and emissions from the portable concrete batch plant (Impact A-2, Class II) would be potentially significant if feasible mitigation is not implemented. Measures identified above (Mitigation Measures A-1a, A-1b, and A-2a) would reduce these impacts to a less than significant level.

D.2.4.4 Original Steam Generator Offsite Disposal Alternative

Disposal of the OSGs at an offsite location would likely involve use of specialized transporters or heavy-duty tractor trailers on the roads accessing DCPP and regional highways. Transport by railway or barge would then be used for ultimate delivery to the disposal facility outside of California. Similar to the activities related to RSG delivery and transport described above in Section D.2.3.2 (Impact A-1, Class II), emissions from on-highway traffic for OSG offsite transport would not impede attainment or mainte-

nance of the ambient air quality standards, as long as feasible mitigation is implemented (Mitigation Measures A-1a and A-1b). ~~Railroad locomotive emissions are included in the SLOAPCD emission inventory for attainment planning (CARB, 2004b) and would not likely cause a significant air quality impact.~~ Emissions from tugboats, ~~which are not included in the emission inventory,~~ could be fully offset with Mitigation Measure A-1c.

D.2.5 Environmental Impacts of the No Project Alternative

The No Project Alternative would probably cause DCPP to shut down before the NRC license expiration, and emissions from DCPP routine operations, including workers' vehicles commuting to the site, would cease. Development scenarios foreseeable under the No Project Alternative could result in new generation or transmission facilities being installed in San Luis Obispo County or elsewhere in Northern California or the Southern Central Valley to compensate for the lost generation of DCPP. Although construction and operation of new power plants and transmission lines may be necessary, their locations and development schedules cannot be predicted.

New generation and construction activities would need to comply with local air quality management requirements and may require local permit review or review under CEQA. Construction would involve emissions from diesel-powered equipment and trucks and the emissions of vehicles used by commuting construction workers. It would also involve potentially significant, but temporary, levels of dust, depending on the amount of area disturbed by the construction activity. Most new generation facilities (e.g., non-renewable) would involve new major stationary sources. Stationary sources would be required to implement the Best Available Control Technology, and if occurring in nonattainment areas, new emissions would need to be offset with the shutdown of existing emission sources. These requirements are components of the New Source Review program, which applies to any new major source of emissions in the nation. These requirements are effective at minimizing but not eliminating the air quality impacts of new stationary sources of power generation. Residual impacts could occur if new power plants cause emissions to become localized within areas or neighborhoods of substantial existing pollution, creating so-called "hot spots."

D.2.6 Mitigation Monitoring, Compliance, and Reporting Table

Table D.2-14 shows the mitigation monitoring, compliance, and reporting program for Air Quality.

Table D.2-14. Mitigation Monitoring Program – Air Quality

IMPACT A-1	Replacement activities would cause emissions from transport and construction equipment (Class II)
MITIGATION MEASURE	A-1a: Develop and implement a trip reduction plan. PG&E shall develop and implement a Trip Reduction Plan in cooperation with the SLOAPCD and CPUC to provide emission and congestion benefits for the duration of the steam generator replacement project. The goal of the plan shall be to achieve an average project-worker vehicle occupancy-trip reduction of 50 percent as established by Mitigation Measure T-3a of 2.0 and a project-worker vanpool ridership of 40 percent. The plan shall be approved by the SLOAPCD and CPUC at least 60 days before commencement of transport or construction activities.
Location	All work areas
Monitoring / Reporting Action	Provide <u>Construction Activity Management Plan (CAMP) including a</u> Trip Reduction Plan approved by SLOAPCD to CPUC before commencing transport or construction activities
Effectiveness Criteria	Evidence of plan success by periodic observation of vehicle occupancy and vanpool ridership counts
Responsible Agency	CPUC, SLOAPCD
Timing	During all steam generator replacement activities
MITIGATION MEASURE	A-1b: Develop and implement a diesel combustion emission control plan. PG&E shall develop and implement a Diesel Combustion Emission Control Plan to implement the SLOAPCD recommendation of Best Available Control Technology for construction equipment (CBACT). The plan shall specify use of diesel combustion emission control measures consistent with recommendations identified in the most-recent SLOAPCD CEQA Air Quality Handbook, such as, but not limited to <u>idling limitations</u> , diesel oxidation catalysts, catalyzed diesel particulate filters, or other District approved emission reduction retrofit devices. The plan and CBACT approach shall be developed in cooperation with SLOAPCD and CPUC staff before commencing transport or construction activities. The complete plan shall be submitted to the CPUC at least 60 days prior to transport <u>or construction</u> activities.
Location	All work areas
Monitoring / Reporting Action	Provide <u>Construction Activity Management Plan (CAMP), including a</u> Diesel Combustion Emission Control Plan approved by SLOAPCD to CPUC before commencing transport or construction activities.
Effectiveness Criteria	Evidence of plan success by periodic inspection of diesel equipment
Responsible Agency	CPUC, SLOAPCD
Timing	During all steam generator replacement activities
MITIGATION MEASURE	A-1c: Offset tugboat NOx emissions with an offsite mitigation program. PG&E shall develop and implement or fund an offsite mitigation program that would provide <u>s approximately 1.544 tons of NOx reductions from existing sources in the Avila Beach and Port San Luis communities. PG&E shall initiate this program such that the emission reduction project(s) is in place prior to commencing the RSG transport activities.</u> PG&E shall accomplish this either by developing and implementing a program of reductions (e.g., installing diesel engine or marine vessel emission control systems) or by providing mitigation funding <u>and a 15 percent administration fee</u> to the SLOAPCD for emission-reducing projects identified by the SLOAPCD (e.g., through the Carl Moyer Program). If PG&E elects to implement its own emission reductions, then the approach shall be developed in cooperation with SLOAPCD and CPUC staff.
Location	Avila Beach and Port San Luis
Monitoring / Reporting Action	Provide <u>Construction Activity Management Plan (CAMP) including an</u> offsite mitigation program approved by SLOAPCD to CPUC and implement before commencing offloading or transport activities

Table D.2-14. Mitigation Monitoring Program – Air Quality

Effectiveness Criteria	Written description of mitigation program and record of program funding
Responsible Agency	CPUC, SLOAPCD
Timing	Prior to and during replacement steam generator transport activities
MITIGATION MEASURE	A-1d: Conduct an acute health hazard screening analysis for the toxic diesel component acrolein. <u>At least 60 days prior to the start of transport activities,</u> PG&E shall perform an acute health hazard screening analysis for acrolein emissions during offloading and transport activities at Port San Luis and submit the analysis to the SLOAPCD and CPUC. The health hazard index shall be identified for the point of maximum impact, and all locations with a health hazard index greater than 1.0 shall be identified. PG&E shall consult with SLOAPCD staff to determine the appropriate level of mitigation (e.g., by restricting access or changing the proposed sequence of activities to minimize emissions) if the screening analysis reveals a maximum health hazard index greater than 0.1. PG&E shall develop and implement a strategy approved by SLOAPCD for temporarily restricting public access from any location where the acute health hazard index would be greater than 1.0, if necessary, before commencing offloading or transport activities.
Location	Avila Beach and Port San Luis
Monitoring / Reporting Action	Provide copy of screening analysis to CPUC and access strategy approved by SLOAPCD, if necessary, before commencing offloading or transport activities.
Effectiveness Criteria	Copy of screening analysis and evidence of approval by SLOAPCD
Responsible Agency	CPUC, SLOAPCD
Timing	Prior to replacement steam generator transport activities
IMPACT A-2	Construction of the Original Steam Generator Storage Facility would cause emissions from portable concrete batch sources (Class II)
MITIGATION MEASURE	A-2a: Use registered portable equipment. PG&E or its contractor shall (1) use portable concrete batch sources that are registered in the Statewide Portable Equipment Registration Program or permitted by the SLOAPCD; and (2) maintain the portable equipment according to the specifications of the Program or SLOAPCD. PG&E shall provide evidence to CPUC indicating that appropriate registration or permits are in place.
Location	Onsite
Monitoring / Reporting Action	<u>Provide Construction Activity Management Plan (CAMP) approved by SLOAPCD with appropriate registration or permits for the Register-affected sources with CARB or SLOAPCD</u>
Effectiveness Criteria	Provide evidence of valid registration for sources to CPUC.
Responsible Agency	CPUC, CARB or SLOAPCD
Timing	Before and during construction of OSG Storage Facility

D.2.7 References

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