

**PACIFIC GAS AND ELECTRIC COMPANY  
Embarcadero-Potrero 230 kV Transmission Project  
NTP # 2 Horizontal Directional Drill Submittal**

<b>APM or MM addressed:</b>	APM AQ-2. <b>Minimize Construction Exhaust Emissions.</b>
<b>Attachments:</b>	CARB certificates
<b>Date Submitted:</b>	August 3, 2014

**APM AQ-2. Minimize Construction Exhaust Emissions.**

*The following measures will be implemented during construction to further minimize the less-than-significant construction exhaust emissions:*

- *Encourage construction workers to take public transportation to the project site where feasible.*
- *Minimize construction equipment exhaust by using low-emissions or electric construction equipment where feasible. Develop a plan demonstrating that the off-road equipment (more than 50 horsepower) to be used would achieve a project-wide fleet-average 20 percent NO<sub>x</sub> reduction and 45 percent PM reduction compared to the most recent CARB fleet average. Acceptable options for reducing emissions include the use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, add-on devices such as particulate filters, and/or other options as such become available.*
- *Minimize unnecessary construction vehicle idling time. 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 warm-up times following start-up that limit their availability for use following start-up. Where such diesel-powered vehicles are required for repetitive construction tasks, these vehicles may require more idling time. The project will apply a “common sense” approach to vehicle use, such that idling is reduced as far as possible below the maximum of five consecutive minutes required by regulation (13 CCR 2485). If a vehicle is not required for use immediately or continuously for construction activities or other safety-related reasons, its engine will be shut off.*
- *Minimize welding and cutting by using compression or mechanical applications where practical and within standards.*

*Encourage use of natural gas or electric powered vehicles for passenger cars and light-duty trucks where feasible and available.*

*MM-A-1: Achieve minimum emission standards. This measure incorporates and supplements portions of APM AQ-2, Minimize Construction Exhaust Emissions. PG&E shall maintain all construction equipment properly in accordance with manufacturer’s specifications, and ensure that equipment is checked by a certified visible emissions evaluator. All off-road construction diesel engines not registered under the CARB Statewide Portable Equipment Registration Program shall meet at a minimum the Tier 2 California Emission Standards for Off-Road Compression-Ignition Engines as specified in California Code of Regulations (CCR) Title 13, Chapter 9, Sec. 2423(b)(1). All marine commercial harbor craft, except gasoline-powered small craft, shall meet at a minimum the Tier 2 Marine Engine Emission Standards (CCR Title 17, Sec. 93118.5).*

**PG&E response:**

The following measures will be implemented during project construction:

- a. All construction equipment shall be maintained in proper tune according to manufacturer’s specifications, and checked by a certified visible emissions evaluator prior to being brought on-site;

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- b. All off-road and portable diesel powered equipment shall be fueled with CARB-certified motor vehicle diesel fuel (non-taxed version suitable for use off-road);
- c. Diesel construction equipment shall meet CARB's Tier 2 certified engines or cleaner off-road heavy-duty diesel engines (e.g., Tier 3 and Tier 4, where feasible), and comply with the State Off-Road Regulation (CCR Title 13, Article 4.8, Chapter 9, Section 2449);
- d. On-road heavy-duty diesel trucks shall meet CARB's 2007 or cleaner certification standard for on-road heavy-duty diesel engines, and comply with the State On-Road Regulation;
- e. All on and off-road diesel equipment shall not idle for more than 5 minutes, except as needed to perform a specified function (e.g., concrete mixing). Signs shall be posted in the designated queuing areas and or job sites to remind drivers and operators of the 5 minute idling limit per PG&E guidelines and per 13 CCR 3485;
- f. Locate stationary diesel-powered equipment and haul truck staging areas as far as practicable from sensitive receptors; contractors will apply a "common sense" approach to vehicle use; if a vehicle is not required for use immediately or continuously for construction activities, its engine will be shut off. Construction foremen will include briefings to crews on vehicle use as part of pre-construction briefings;
- g. Use emission control devices at least as effective as the original factory-installed equipment;
- h. To the extent feasible, equipment shall be powered with electricity;
- i. To the extent feasible, alternatively fueled construction equipment shall be used onsite, such as compressed natural gas (CNG), liquefied natural gas (LNG), propane or biodiesel.