

## DOCKETED

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| <b>Docket Number:</b>   | 79-AFC-05C   |
| <b>Project Title:</b>   | Compliance - Application for Certification for PG&E Geysers Unit 16 (78-NOI-6) |
| <b>TN #:</b>            | 222538   |
| <b>Document Title:</b>  | Air Quality Emissions & Impact Anaylsis  |
| <b>Description:</b>     | N/A  |
| <b>Filer:</b>           | Raquel Rodriguez   |
| <b>Organization:</b>    | Calpine  |
| <b>Submitter Role:</b>  | Applicant  |
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**From:** Barbara McBride [<mailto:Barbara.McBride@calpine.com>]

**Sent:** Wednesday, February 07, 2018 5:24 AM

**To:** Winstead, Keith@Energy

**Cc:** Veerkamp, Eric@Energy; Brian Berndt; Bruce Carlsen; Root, Christine@Energy; Layton, Matthew@Energy; Davis, Chris@Energy; Bruce Carlsen; Brian Berndt

**Subject:** RE: Geysers application information request

Please find the attached responses to the information requested.

#### Air Quality Emissions and Impact Analysis

Each site will add an identical diesel fire pump to provide wet down capabilities for the cooling towers located at Units 16, 18 and 20. The emissions for the fire pumps is estimated below based on manufacturers data. In addition, the calculations were conducted for Unit 16 which is the facility which has the closest resident at 823 meters. The prioritization score below is based on the "CAPCOA Air Toxics "Hot Spots" Program Prioritization Guidelines" calculation. A priority score of less than one indicates that the site would be very low on the priority score and would likely not pose a risk. The risk indicated below of 0.064 indicates that this facility would be very low on the prioritization list.

Proposed Air Emissions:

Each facility will use an identical diesel fired engine:

Cummins 204 bhp Model CFP7EVS-F40. Operating Speed 1900 RPM. Proposed operation 50 hours per year.

| Pollutant   | grams/bhp-hr | lbs/hr | lbs/year | tons/year |
|-------------|--------------|--------|----------|-----------|
| CO          | 1.193        | 0.53   | 26.8     | 0.013     |
| NMHC        | 0.062        | 0.03   | 1.39     | 0.001     |
| NOx         | 2.475        | 1.11   | 55.6     | 0.028     |
| Particulate | 0.111        | 0.05   | 2.50     | 0.001     |

Proposed Impact Analysis:

Nearest resident to Unit 16 is located 823 meters away (To the unoccupied burnt Hilltop Facility)

Nearest resident to Unit 18 is located 1,080 meters away (To the Post 3 Security Gate)

Nearest resident to Unit 20 is located 2,011 meters away (To the Post 3 Security Gate)

AB2588 Risk Evaluation due to diesel particulate for the Unit 16 Diesel engine

Risk Factor: 3.00E-4

Emissions(lbs/year): 2.5

Receptor Proximity: 0.011

Norm Factor: 7700

Carcinogen Score 0.064

**Result: low priority and concern**

**Design Details**

*Pump Connection:*

The pump is located next to the circulating water pit. The suction piping runs from the pump suction over the pit wall, and is submerged below the pit normal water level. All suction piping is above ground (with the exception of the entrance over the wall into the existing pit).

*Water Supply:*

The water supply for the pump is from the circulating water pit, which is the same source as the tower basin. There is no other source of water to the pump.

*Make up Water*

There typically no makeup water to the cooling tower basin. During heat waves when evaporation of the water in the tower is highest, some supplemental make up water is added to the tower basins. This is typically domestic water, ground water, and/or tertiary treated water.

*Pump Outlet Construction*

The pump outlet to the distribution system is above-grade (no underground routing for piping). The pump discharge is at about 4.5' above finished grade, and the piping will be routed on "sleeper"-type supports that are anywhere from ~6" to 18" above finished grade.

#### *Control System*

The pump/engine controller is provided by the skid manufacturer as an integral part of the pump skid. It will be mounted and wired/connected to the engine at the factory. The engine will be manually started by the plant operator.

Please let me know if you have any additional questions or require any more information.