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Project Title:	Humboldt Bay Generating Station - Compliance
TN #:	222028
Document Title:	Humboldt Bay Generating Station's Responses to Data Request No. 2 - Humboldt Diesel Pilot Fuel Increase Amendment.
Description:	Attached is the HBGS response to the data request received back on September 26, 2017.
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HBGS Air Quality Petition to Amend (06-AFC-07C)

Data Request 2 – Response

15. **Please clarify the discrepancies in the historic annual quantities of diesel fuel use by correcting the diesel mode fuel-use data provided in response to DR#2 so that all past diesel fuel-use is accurately reported for all modes of operation. (Spreadsheet format would be acceptable.)**

All diesel records were reviewed, including all AQ-153 submittals and database values, down to minute level data, from 2011 through 2016, for all 10 units.

This resulted in updated diesel usage tables. The attached excel tables include summations of all diesel fuel consumed by the units, by month, and split between diesel mode and natural gas mode (pilot fuel). These values were calculated by totaling every single minute of data for each unit, for each month. PG&E also compiled all AQ-153 records, and determined summations of diesel usage from those records as well. The totals from the minute level diesel data were then compared to the totals from AQ-153 submittals, and the totals were all within 1%.

In the attached file, there is a tab for each individual unit, in addition to two summary tabs. One summary tab shows the total diesel use for each month from 2011 through 2016. The second summary tab shows the total diesel mode usage compared against the summations of the different modes of diesel operation (inadvertent trips to diesel, natural gas curtailments, source testing, and maintenance and testing).

When reviewing the tables, please note that LFO (light fuel oil) is used in place of Diesel Mode. Pilot indicates the amount of diesel used as pilot fuel during natural gas mode operations.

PG&E apologizes for the delay in getting this information in an accurate and acceptable form. It appears the previous totals sent over were back-calculated based on heat inputs derived from fuel analyses, and not totals from the flow meters. PG&E is now actively working with our database vendor to improve the accuracy of the totalizing parameters, so this information is more readily available in the future.

Please disregard the previously submitted diesel summary tables, and rely on these new tables, which are more accurate.

16. **Please describe the pilot diesel fuel control and delivery system used on the individual engines. Are flow adjustments possible to control pilot diesel fuel flow to individual cylinders or is any adjustment applied equally to all cylinders of an engine?**

The system in use is as follow:

There are a total of 4 diesel flow meters on each engine. Two each for pilot and diesel, consisting of an inlet and outlet meter. The fuel coming out of the unit (outlet) is recorded against the fuel going into the unit (inlet), to determine the fuel consumption. This applies for both the pilot and diesel meters.

It is a bulk monitoring system, and the fuel is applied evenly across all cylinders. There is no way to enrich individual cylinders with extra diesel fuel.

17. Please describe the procedures PG&E proposes to use to accurately measure and report diesel use during all modes of operation, assuming the amendment request is approved by the Energy Commission.

PG&E proposes the following changes for reporting diesel mode operations. All diesel mode operations will be summarized in each semi-annual report (SC-9). Outside of the SC-9 reporting, PG&E suggests reporting instances of diesel mode operation that result in consumption of above 500 gallons of fuel. This would eliminate the notification of the inadvertent trips to diesel, and would instead provide notification of purposeful, extended diesel runs.

PG&E is receptive to this change, and open to other triggers (i.e. instead of 500 gallons, we can set a duration, or just say inadvertent trips are to be reported in SC-9, while purposeful diesel mode operations will be reported via AQ-153).

		2011	2012
			Diesel M
Total	LFO	**217,343.4**	**156,954.4**
miscellaneous trips to diesel		4,294.3	4,278.2
natural gas curtailments		95,722.3	44,316.2
source testing		94,447.2	62,951.6
maintenance and testing		23,953.4	45,403.8
Total		**218,417.2**	**156,949.8**
Difference (gallons)		**1,073.8**	**-4.6**
Percent Difference		**0.49%**	**0.00%**

All data compiled using AQ-153 submittal records in combination with summaries of minu

LFO = light fuel oil = diesel

ode Summary All Units

2013	2014	2015	2016
156,431.9	82,514.4	52,676.4	19,545.1
2,713.5	4,554.3	8,999.0	6,505.5
90,401.9	0.0	0.0	0.0
59,144.3	78,624.4	43,098.9	11,119.0
3,687.3	150.5	399.7	1,875.6
155,947.0	83,329.2	52,497.6	19,500.1
-484.9	814.8	-178.8	-45.0
-0.31%	0.99%	-0.34%	-0.23%

ute level data across all 10 units, from 2011 through 2016