# DOCKETED

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| **Docket Number:** | 13-AFC-01 |
| **Project Title:** | Alamitos Energy Center |
| **TN #:** | 210806 |
| **Document Title:** | Alamitos Energy Center Data Response Set No. 7 Questions |
| **Description:** | N/A |
| **Filer:** | Cindy Salazar |
| **Organization:** | CH2M HILL |
| **Submitter Role:** | Applicant Consultant |
| **Submission Date:** | 3/22/2016 12:19:04 PM |
| **Docketed Date:** | 3/22/2016 |

**From:** Salamy, Jerry/SAC
**To:** "Vicky Lee"; stephen.okane@AES.com
**Cc:** John Yee; Andrew Lee; Engel, Elyse/SJC; Salazar, Cindy/SCO
**Subject:** RE: AEC Questions Set No. 7
**Date:** Tuesday, March 22, 2016 12:03:00 PM

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Hi Vicky,

Below are the responses to your questions.

8. Cold, Warm, Hot Startup Definitions
   a. Combined Cycle Turbines
   b. Auxiliary Boiler
      iv. Response to item (ii) indicates a warm start occurs when the turbine/boiler has been shut down for more than 10 hours, and response to item (iii) indicates a hot start occurs when shutdown is for less than 10 hours. In response to my verbal query yesterday, Stephen indicated that shut down for 10 hours is a warm start. This is to keep all parties in the loop.

**Response:** Comment noted.

10. Auxiliary Boiler
    e. Commissioning
       iv. Response to item (ii) indicates the commissioning would take place over 5 days, up to 6 fired hours per day. The response also provided the daily emissions and total commissioning emissions for NOx, CO, and VOC. Since Rule 2012 requires an interim emission factor for NOx for the 42.2 lb total for the commissioning period, please provide total fuel usage for the commissioning period.

**Response:** The total auxiliary boiler fuel use is 414 million British thermal units (MMBtu) or 0.39 million cubic feet (MMCF).

30. Oil/Water Separators
    a. Throughput Conditions

Rule 1313(g) requires a monthly emission limit for non-attainment pollutants to establish a basis for calculating offset requirements. As you know, a throughput limit is a surrogate for emissions limit.

For OWS-1 (combined-cycle)--

Maximum throughput per month = (0.25 of annual in one month) (808,736.6 gal/yr) = 202,184 gal in any calendar month

For OWS-2 (simple-cycle)—

Maximum throughput per month = (0.25 of annual in one month)( 123,424.04 gal/yr) = 30,856 gal in any calendar month

Permit conditions will specify the above throughput limits. This is a heads-up in

case you have any comments now.

**Response:** AES is proposing to revise the emission factor used to calculate volatile organic compound (VOC) emissions from the oil/water separators based on the District's suggestion that the emission factor be corrected based on the vapor pressure of the materials expected to be in the stormwater. The U.S. Environmental Protection Agency (EPA) AP-42 emission factor, used to estimate the AEC's oil/water separator VOC emissions, is based on oil/water separators for petroleum refining operations, where process water used in the petroleum refining process is contaminated with petroleum products. Because AEC will primarily use lubricating oils and grease, AES proposes to correct the EPA AP-42 emission factor of 0.2 pounds (lb) per 1,000 gallons of throughput based on the vapor pressure of the lubricating oils expected to be used and the vapor pressure of crude oil using the following equation:

0.2 lb VOC/1000 gallons of throughput x (vapor pressure of lubricating oil, 0.01 milligrams mercury [mmHg] at 100 degrees Fahrenheit [°F][1] / vapor pressure of crude oil, 2 mmHg at 100°F[2]) = 0.001 lb VOC/1000 gallons of throughput

After review of the maximum monthly rainfall at Los Angeles International Airport (closest location with long-term precipitation records), the maximum monthly precipitation approximately equals the annual rainfall used to estimate the oil/water separator emissions. As such, the revised maximum monthly oil/water separator emissions are based on the annual oil/water separator throughput and the revised emission factor. The suggested maximum monthly VOC emissions from the oil water separators are as follows:

For OWS-1 (combined-cycle)--

Maximum throughput per month = (808,736.6 gallons per month [gal/month] x 0.001 lb VOC/1000 gallons of throughput) = 0.81 lb of VOC in any calendar month

For OWS-2 (simple-cycle)—

Maximum throughput per month = (123,424.04 gal/month x 0.001 lb VOC/1000 gallons of throughput) = 0.12 lb of VOC in any calendar month

b. Recordkeeping

If the separators are not pumped out every month, then requiring recordkeeping at the end of each and every calendar month would not be realistic.

i. How often does AES anticipate pumping out OWS-1 and OWS-2?

**Response:** The oil water separators drain secondary containment areas for oil/grease-containing equipment. Therefore, after each rain event, these secondary containment areas will be pumped out to ensure sufficient capacity is available for additional stormwater.

ii. Will the interval between the pumping out vary or be constant (e.g., every three months).

**Response:** As noted above, the secondary containment areas will be pumped out after each rain event.

iii. How would the gallonage pumped out be measured?

**Response:** The volume of water treated by the oil water separator can be estimated based on the duration of pumping and the oil water separator throughput of 400 gallons per minute.

iv. If the separators are not pumped out each and every month, the recordkeeping would need to be based on a multiple month average. For example, if AES pumps out both oil/water separators every three months, the condition could state: "The monthly limit is based on a 3-month average. Within 14 calendar days after the end of the 3-month period, the operator shall record the average throughput for the previous 3 months." Is this condition workable?

**Response:** As noted above, the secondary containment areas will be pumped out after each rain event.

[1] http://qclubricants.com/msds/CHEVRON%20_turbine_2190_TEP_msds.pdf

2 http://oilspill.fsu.edu/images/pdfs/msds-crude-oil.pdf

Thanks,

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**From:** Vicky Lee [mailto:VLee1@aqmd.gov]
**Sent:** Thursday, March 10, 2016 6:31 PM
**To:** Salamy, Jerry/SAC <Jerry.Salamy@CH2M.com>; stephen.okane@AES.com
**Cc:** John Yee <JYee@aqmd.gov>; Andrew Lee <ALee@aqmd.gov>
**Subject:** AEC Questions Set No. 7

Stephen O'Kane and Jerry Salamy,

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shall record the average throughput for the previous 3 months." Is this condition workable?

Thanks for your input.

Vicky Lee
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[1] http://qclubricants.com/msds/CHEVRON%20_turbine_2190_TEP_msds.pdf

[2] http://oilspill.fsu.edu/images/pdfs/msds-crude-oil.pdf