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Subject Mirant-Potomac Unit 1 test protocols - City Concerns

Mike:

The City has reviewed the copy of Mirant's revised proposal and has several still unaddressed concerns. Following are potential problems with the sequencing and sufficiency of Mirant's RATA and trona testing procedures. These problems may have significant bearing on how well we can answer the questions of 1) how PM10 emission rates increase with the use of trona, 2) the effectiveness of the ESPs in controlling PM10 for baseline and trona injection and for the full load of operational conditions, and 3) quantifying the baseline PM10 emission rates for the current operational scenario for Unit 1.

The planned testing procedures should be remedied as described here:

1) the sequence of the test plan should be changed so that the flowrate RATA is performed before the trona and baseline PM10 and SO2 tests. What if the flowrate RATA, planned now to occur after all of the other tests, shows a poor result? That would then require the complete re-testing of baseline and trona injection conditions, which will be flowrate-based. While Mirant states that the flowrate RATA occurs from the same test ports as the Method 201A and 202 test ports and therefore cannot occur simultaneously, there is no apparent reason why Day's 2 current test of baseline PM10 cannot be delayed until after the flowrate RATA occurs;

2) it is not clear why Mirant is performing RATA tests under low load conditions only, as the test plan matrix describes. While the SO2 RATA form does show a load range, Mirant's cover letter contradicts that by stating that only a low load RATA will be performed. SO2, NOx, CO2 and flowrate RATA's should also be performed under mid and full load instead of only under low load as Mirant proposes;

3) where are the DEQ-required protocol forms for flowrate RATA (and for NO2 and CO2)? If this form was provided to DEQ, the City asks to review it. If not provided, Mirant should submit that form;

4) why does Mirant propose deviating from the Reference Method 6C by measuring from only two ports versus the required three for the SO2 RATA? It is not clear why this is necessary now when this is not Mirant's standard RATA procedure (the accompanying "Annual CEM RATA Test Protocol" does not include any mention of this deviation from the reference method and states that three test ports will be used);

5) Baseline PM10 emissions tests should occur under the range of potential operating loads. Therefore, the proposed baseline PM10 test (currently planned for Day 2, but would be shifted to Day 3 to allow pre-test flowrate RATA) must be expanded to include min and mid-load PM10 using methods 201A and 202 testing, at points upstream and downstream of the ESP. Particulate emissions are load-sensitive; lower loads are more likely to be characterized by conditions of incomplete combustion, which in turn promotes higher particulate emission rates. As you know that the current unit 1 operation scenario and potentially future operations may include operation of

the boiler at loads other than full load and with the potential of increased particulate emissions because of use of Trona, it is not sufficient to measure PM10 emission rates only under full load conditions and only at the ESP outlet;

6) Trona injection's effect on PM10 emissions should also be evaluated under the range of potential operating loads. Therefore, testing plans (currently planned for Day 3 and 4 of the test matrix) should be expanded to include PM10 testing at min and mid loads, instead of testing trona's impact on PM10 for max load conditions only as currently planned;

7) All testing using Methods 201A and 202 to determine PM10 emissions should occur at points both upstream and downstream of the ESP, instead of only at the downstream end as Mirant proposes. These data are necessary to determine the efficiency of the ESPs to control PM10. Mirant's test plan for trona includes pre-ESP and post-ESP testing for SO2 for the purposes of "evaluating trona distribution and performance." However, as equally important is the need to test pre-ESP and post-ESP levels of PM10 during the trona tests. It might be important to note that the only apparent means of monitoring the ESP's operational capability to date has been through opacity monitoring. However, a lack or presence of opacity in the gas stream provides no basis upon which to make a determination of this unit's control efficiency within the ranges that are important to this analysis.

8) Mirant should provide more detail to support the two statements made within the footnotes of its test plan matrix: a) "the test order may change depending on the initial test results," and b) "system testing may also be conducted between Day 1 and Day 2." What test results does Mirant anticipate that would warrant changing the test order, and how would the test order change? What is the nature of the system testing that may be conducted between Days 1 and 2?

9) It is not clear that temperature will be monitored and reported for baseline and trona injection conditions for all three load conditions. If not, this parameter should be measured and reported. Trona's reaction with SO2 may affect the temperature of the flue gas.

The results of these planned tests will in part supply the data that the City requested of DEQ on September 30, for the purpose of determining whether the Unit 1 operational scenario is a compliance scenario. However, DEQ should let the City know the status of the response to that data request, and if DEQ intends to respond to the City's September 30th request after these tests are complete, it should let the City know when to expect that full response.

Thank you very much.

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