



Maricopa County

Air Quality Department

Permit Engineering Division
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April 29, 2015

Ms. Anne Carlton
Environmental Consultant, Corporate Environmental
Arizona Public Service
400 North 5th Street, MS 9303
Phoenix, Arizona 85004

Re: Request for Supplemental Information
Major Modification and Renewal of Permit V95007

Dear Ms. Carlton:

The Maricopa County Air Pollution Control Department (MCAQD) met with you and your team on April 22, 2015 to discuss the proposed major modification and renewal of APS Ocotillo Power Plant permit V95007. After receiving comments during the public notice period, MCAQD has determined that additional information will be required to meet the regulatory requirements and respond to all interested stakeholders. To that end, the discussion was fruitful and productive. Questions raised by commenters as well as background information in the record from similar projects should be helpful in forming the basis for providing the additional information required. The following list identifies specific topics that need further explanation.

1. BACT for GHG emissions from the gas turbines.
 - Please respond to the arguments that the Step 1 BACT analysis is incomplete because:
 - i. It fails to identify good combustion practices such as steam injection, dry low-NO_x (DLN) combustors and steam injected gas turbines (STIG) that could be used on the same LMS100 model turbines as proposed for the project.
 - ii. It fails to identify energy storage as an alternative to simple cycle gas turbines but with lower emissions.
 - iii. It fails to identify smaller units that could operate at 100% efficiency rather than 102 MW turbines operated at 25% load.
 - Please respond to the arguments that the Step 2 BACT analysis is flawed because:
 - i. It fails to properly consider highly efficient combined cycle plants that achieve their efficiency at full and partial load as well as a wide range of ramp rates that respond to fluctuations in demand.
 - ii. The operation of the turbines as proposed seems to be at greater frequency and for longer hours than is ordinarily the case for peaker plants and thereby justifies the operation of combined cycle units in lieu of simple cycle units.
 1. There are combined cycle turbines that are technically feasible to meet the projects generation purposes.
 2. The ability of combined-cycle units to act as peaking units has been recognized on a number of occasions at other plants.
 - Please respond to the arguments that the Step 5 BACT analysis is flawed because:

- i. It is improper to set the GHG limit based upon emissions when operating at 25% of load because operation at that load level is unnecessary considering the alternative technologies available and BACT should have to be met at all operational load levels.
 - ii. It is based on an improperly long averaging time.
 - iii. The limit excludes GHGs during startup and shutdown. (Note: Recent GHG BACT permits contain startup and shutdown emissions for GHGs separate from the BACT output based limits that apply at all other times. Please propose and justify a GHG startup and shutdown emission limit.)
 - iv. The GHG limit is the highest for similar facilities in the country and is less stringent than the proposed GHG NSPS for new electric generating units.
2. BACT for NOx emissions for the gas turbines.
 - Please respond to the argument that county rules require BACT for NOx but NOx BACT was improperly determined for the turbine being used for this project.
3. BACT for PM/PM_{2.5} emissions from the gas turbines.
 - Please respond to the argument that:
 - i. The net increase in PM and PM_{2.5} from the project exceed the PSD significance thresholds and, therefore, BACT is required.
 - ii. The Step 1 BACT analysis for PM and PM_{2.5} is flawed because it fails to identify commercially available good combustion practices for the turbines including steam injection.
 - iii. The Step 2 BACT analysis is flawed because it does not support the elimination of technologies such as DLN and steam injected gas turbines as being technically infeasible.
 - iv. Step 4 of the BACT analysis is flawed because the choice of water injection ignores technically feasible alternatives and that have less adverse, energy, environmental and economic impacts.
 - v. Step 5 of the BACT analysis is flawed because it failed to consider the results of using alternative combustion systems. Further, there is no basis for raising the Pio Pico PM BACT level by 6%.
4. BACT for PM/PM_{2.5} emissions from the cooling tower.
 - Please respond to the argument that alternative cooling methods to the hybrid cooling system design were not evaluated.
 - i. Dry cooling was not evaluated
 - ii. Water treatment of the makeup water to the cooling tower was not evaluated.
 - iii. Lower drift rate losses were not evaluated as BACT.
5. NOx emissions cap.
 - Please respond to the arguments supporting the statement that the NOx emissions cap is unenforceable.
6. Comments 1, 2, and 3 from the non-Sierra Club commenters all turn on whether the project is a reconstruction and will be addressed as a single response.

- Please respond to the argument that the project is a major modification and would require a significant net emissions increase for PM₁₀ and thereby triggers nonattainment area new source review for that pollutant.
7. Both commenters questioned the validity of voluntary emissions cap for PM₁₀/PM_{2.5}. One commenter argued that the regulations do not authorize the creation of an emissions cap at the same time as the major modification would occur to avoid the imposition of non-attainment area new source review. Both commenters maintain that the emissions cap as proposed is not sufficiently enforceable and, therefore, is invalid.
- Please respond to the argument that a voluntary emissions cap for PM₁₀/PM_{2.5} is invalid.
 - Please respond to the argument that the PM₁₀ cap is not enforceable as applied to PM₁₀ emissions from GT1 and GT2 as well as the gas turbines and the cooling tower.
8. Comments 6, 7, 8, 9, 10, 11, and 18 all pertain to the requirement in Section 165 of the Clean Air Act and 40 CFR Section 52.21 that an applicant for a PSD permit demonstrate, using air quality models, the facility's emissions of PSD-regulated pollutants will not cause or contribute to:
- A violation of the applicable NAAQS; or
 - Consuming the applicable PSD increments including Class II area increments and Class I area increments intended to protect visibility. The PSD regulations require that the air quality analysis be based on background ambient air quality; specific guidance as to model choice and protocol; model receptors; load screening and stack parameters; cumulative impact analysis and NAAQS-specific issues.
- The commenters cite a list of what are asserted to be deficiencies in the modeling and failure to support the findings required by 40 CFR Section 52.21.
- Please respond to the cited deficiencies and provide discussion that supports APS' overall conclusions from the air impact analysis.
 - Please provide a modeling protocol that follows the principles of 40 CFR Part 51, Appendix W and the "Air Dispersion Modeling Guidelines for Arizona Air Quality Permits" prepared by the Arizona Department of Environmental Quality.
 - Please describe in detail how required elements of the air quality inputs and analysis were met for this project.
9. Comment 12 asserts that GHG emissions have been underestimated because they do not include CO₂ emissions from the oxidation catalysts on the turbines and emergency generators. Please respond.
10. Comment 15 asserts that the MCAQD should require GHG BACT for pipeline fugitive emissions. Please respond.
11. Comment 16 says that the application does not accurately characterize turbine startup times. Please respond.
12. Comment 17 states that the application fails to accurately characterize the number of startups and shutdowns that will occur during normal operations. Please respond.

As you prepare your responses to the items in this letter and where you rely on decisions from courts of law, the Environmental Appeals Board, EPA and other permitting authorities, please clearly cite the source of the requisite decisions.

Procedurally, once we will receive the supplemental additions to the application APS submits we will use that information to re-draft the Technical Support Document (TSD) and the Permit Conditions. Upon completion of those documents, the proposed revised TSD and Permit Conditions will again be made available for supplemental public review and comment. Following the close of the comment period, a response to comments from both the first and second public notices will be completed. If appropriate, the proposed final permit will be forwarded to EPA Region 9 for their review.

As noted in the meeting, it is our desire to move as expeditiously as practical while fulfilling our obligation to provide the required level of regulatory oversight and evaluation. We trust you share in our goal to protect and improve air quality in Maricopa County. Please direct any questions to either Henry Krautter at 602-506-7302 (Henry.Krautter@mail.maricopa.gov) or to me at 602-506-1842 (Richard Sumner@mail.maricopa.gov).

Sincerely,



Richard A. Sumner, PE
Permitting Division Manager
Maricopa County Air Quality Department

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By email and USPS

Cc: Jo Crumbaker – MCAQD
Scott Treece – MCAQD
Henry Krautter – MCAQD
Roger Ferland – Consultant to MCAQD
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