

Filename: ..\EngRev\CoolidgePower.Supp.tsd2
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Date: 6/17/09

**Technical Support Document - Supplemental TSD #2
Coolidge Power, LLC
Permit # V20635.000**

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This Supplemental TSD #2 explains the justification of the initial modeling analysis conducted by the applicant to be sufficient to verify that the PM₁₀ increment analysis for the proposed project will not exceed. The proposed project would operate as a synthetic minor source under Prevention of Significant Deterioration (PSD).

1. PM₁₀ Increment Consumption Analysis Requirement

Initial modeling analysis performed by the applicant indicated that when operated at maximum load conditions based on the turbine manufacturer's emission rates, the proposed facility could potentially cause PM₁₀ ambient impacts exceeding the "significance level" that would trigger an increment consumption analysis under EPA's new source review guidance.

2. PM₁₀ Increment Consumption Analysis Summary

To verify that the PM₁₀ increment for the proposed project will not exceed the "maximum allowable increase," the applicant performed an increment consumption analysis, *See Coolidge Generation Station 24-Hour PM₁₀ Increment Analysis* (CH2MHILL, April 2009). The analysis was based on the following input:

- Increment consumption was assessed over a significant impact area (SIA) receptor grid that covered the area around the proposed site where modeled ambient 24-hour PM₁₀ concentrations could exceed the SIL.
- Worst case scenario of all 12 combustion turbines running continuously for 24 hours along with 16 start-up and shutdown events over a 24-hour period was used.
- The source inventory area extended 50 km out from the SIL impact area for buoyant plume sources and 10 km for non-buoyant plume sources.
- Allowable annual PM₁₀ emission rates from the inventory were converted to grams per second to approximate conservative estimates of 24-hour PM₁₀ emission rates for the year 2009.
- Local trends in growth and agricultural activity were also investigated to determine if any additional increment was consumed since the minor source baseline date of February 1, 2009.

3. PM₁₀ Increment Consumption Analysis Result

Analysis conducted by the applicant indicated that the worst-case impacts from this facility standing alone and the worst case aggregate impacts both reached about 20 µg/m³ or about 66% of the 30 µg/m³ PM₁₀ increment.

4. EPA's Comments on PM₁₀ Increment Consumption Analysis

The EPA offered additional comment (S. Bohning e-mail, 6/15/09) regarding possible consideration of additional modeling using Screen 3 and ISCT3 with "screening meteorology" to further confirm the conclusion that the facility was not violating, and would not violate, the PM₁₀ increment. However, the EPA also acknowledged that since the source in question is synthetic minor source with respect to PSD, the discretion lies with the local agency as to whether to further pursue the suggested analysis.

5. PCAQCD's Conclusion

PCAQCD finds that in reality, the facility constitutes a battery of simple-cycle turbine units, configured to normally operate in a "peaking" configuration. Given the thermodynamic inefficiency relative to "base load" power plants, this facility will only operate for an extended duty cycle under emergency or other abnormal circumstances. As such, the applicant's analysis, considering ambient impacts based on continuous operation for 24 hours, represents a conservative characterization of potential impacts.

Given the relative margin of safety relative to the "maximum allowable increase" for PM₁₀, PCAQCD concludes that the maximum allowable increment will not be exceeded by the proposed project and therefore, and that the PM₁₀ consumption analysis performed by the applicant is considered sufficient to support and justify PCAQCD's conclusion.