



June 24, 2013

Mr. Wayne Bixler
Air Quality Division
Arizona Department of Environmental Quality
1110 W. Washington Street
Phoenix, AZ85007

Re: Bowie Power Station Modeling Protocol

Dear Mr. Bixler:

Enclosed please find the Bowie Power Station Modeling Protocol. The Bowie Power Station turbines have been revised from GE Frame 7FA Model 3 to GE Frame 7FA Model 4 units. As a result of the use of Fast Start technology, emissions of nitrogen oxides (NO_x), carbon monoxide (CO), and volatile organic compounds (VOCs) from the project have decreased. Consequently, the air quality impact analyses will be revised and a new permit application will be submitted replacing the previous application. The best available control technology (BACT) analysis and the regulatory review will also be updated. The project remains significant for NO_x , CO, and particulate matter ($\text{PM}_{10}/\text{PM}_{2.5}$) but is insignificant for VOCs and SO_2 .

As you know, there have been a number of significant developments since the previous modeling report submission in October 2010. The US Environmental Protection Agency (EPA) has issued revised modeling guidance for the 1-hour nitrogen dioxide (NO_2) National Ambient Air Quality Standard (NAAQS) (March 2011). In January 2013, the US Court of Appeals for the District of Columbia Circuit granted a request from EPA to vacate and remand portions of the Prevention of Significant Deterioration (PSD) fine particulate matter ($\text{PM}_{2.5}$) rules addressing significant impact levels (SILs) for $\text{PM}_{2.5}$ so that EPA could voluntarily correct an error in the provisions. The Court also vacated parts of the PSD rules establishing a $\text{PM}_{2.5}$ significant monitoring concentration (SMC).

The Court's decision narrowly applied to $\text{PM}_{2.5}$ provisions and has been interpreted as such by EPA's subsequently released draft guidance for modeling $\text{PM}_{2.5}$ in March 2013. EPA's guidance confirmed EPA's long-standing policy recognizing that state permitting authority have the discretion of using representative air quality data from existing monitors to satisfy the preconstruction monitoring requirements f PSD permitting.

The Bowie application is not affected by the implications of this court case because it will not use SMCs. Bowie's application will use monitoring data that is representative of background conditions at Bowie, based on the research and analysis by our experts. EPA guidance and Environmental Appeals Board decisions unaffected by the recent case all stress that states have discretion to make determinations as to whether monitoring data are representative. We appreciate ADEQ's careful and thoughtful direction as to these determinations.

Largely because of these developments, there have been substantive revisions in some sections of the protocol. A bullet list is attached indicating the substantive revisions.

If you have questions or comments, please feel free to contact me.

Sincerely,



Gary K. Crane, Ph.D.

cc: BalajiVaidyanathan, ADEQ
Brian Parkey, ADEQ
Michael Burkhart, Kiewit
Martha Hyder, Wind River

Major Revisions to Bowie Power Station Modeling Protocol

Section 1.0 Introduction and Background

- ▶ Turbine model has been revised from GE Frame 7FA Model 3 to GE Frame 7FA Model 4.

Section 2.0 Regulatory Status

- ▶ No substantive changes.

Section 3.0 Ambient Data Requirements

- ▶ Expanded discussion of representative preconstruction data (entire Section 3.1).
- ▶ Proposed PM₁₀ and PM_{2.5} representative preconstruction data from Chiricahua National Monument (NM); Table 3-1 and Figures 3-1 and 3-2 added.
- ▶ Proposed CO representative preconstruction data from Pima County, 22nd and Craycroft monitoring location; Table 3-2 added.
- ▶ NO₂ Deming and Bowie nearby source tables and figures updated (Tables 3-3 and 3-4; Figures 3-4 and 3-5).
- ▶ I-10 traffic counts updated.
- ▶ Expanded discussion of background concentrations (Section 3.4).
- ▶ Table 3-5 Background Concentrations updated to most recent data and revised monitoring sites.
- ▶ Table 3-6 added; background concentrations for 1-hour NO₂ analysis based on most recent EPA guidance.

Section 4.0 Project Emission Sources

- ▶ Table 4-1 annual Bowie Power Station emissions and discussion of startup/shutdown hours updated to reflect GE 7FA Model 4 turbines.

Section 5.0 Class II Area Analyses

- ▶ All components of the AERMOD system (AERMOD, AERMET, AERMAP, AERSURFACE) updated to latest versions.
- ▶ Proposed emission scenarios (Section 5.2.2.2) and turbine/duct burner stack parameters discussion (Section 5.2.2.4/Table 5-1) updated to reflect GE 7FA Model 4.
- ▶ Discussion of AERMOD impact analysis methods (entire Section 5.4) expanded and updated to reflect recent guidance, including guidance regarding secondary PM_{2.5} formation.
- ▶ Table 5-5 updated.
- ▶ Proposed in-stack ratios reflect CAPCOA guidance.

Section 6.0 Class I Area Analyses

- ▶ Generally minor updates.
- ▶ Short discussion of secondary PM_{2.5} added in Section 6.2.1.

Sections 7.0 Additional Impact Analyses and 8.0 Presentation of Results

- ▶ No substantive changes.

Section 9.0 References

- ▶ Updated.