

Wayne Bixler

From: Wayne Bixler
Sent: Monday, October 28, 2013 7:59 AM
To: 'Shepherd, Don'
Cc: John Notar; Bret Anderson; Mark Podrez (podrez@rtpenv.com); Robert C. Arpino; Gary K. Crane
Subject: RE: Bowie Power Station
Attachments: bow5001.res; bow5001.sum; bow5002.res; bow5002.sum; ftbow51.res; ftbow51.sum; ftbow52.res; ftbow52.sum

Don,

Please see below for additional information provided by Bowie Power Station in response to your comments/questions. The CD referenced regarding the VISCREEN files was part of the hard copy application package sent to John, (I have also attached the VISCREEN input/output files if you need them).

Phase Two

This application is for the first phase of the project. SouthWestern Power Group II is aware of the potential for difficulties with the second phase. As visibility and deposition modeling results are heavily influenced by emissions during startup, and combined cycle combustion turbine Fast Start technology is in the early stages of use, SouthWestern believes that Fast Start technology will improve and startup emissions for the second phase will be lower than the first phase.

VISCREEN

The VISCREEN input and output files are on the "Modeling Files" CD, included with the hard copy application package.

The emission scenario used in VISCREEN is the same as that used in CALPUFF. The emissions are on page E-80 of the Modeling Report. The emissions in table E6-7 are for the entire facility and the values on page E-80 have to be multiplied by the number of pieces of equipment and added together:

$NO_x = (22.00 \text{ lb/hour} * 2 \text{ turbines}) + 0.90 \text{ lb/hour auxiliary boiler} + 0.21 \text{ lb/hour emergency fire pump} = 45.11 \text{ lb/hour}$

$PM_{10}/PM_{2.5} = (8.33 \text{ lb/hour} * 2 \text{ turbines}) + 0.18 \text{ lb/hour auxiliary boiler} + 0.01 \text{ lb/hour emergency fire pump} + (0.1 \text{ lb/hour/cell} * 9 \text{ cooling tower cells}) = 17.75 \text{ lb/hour}$

Increment

Yes, the difference in impacts is due to the different models. AERMOD was used for the Chiricahua NM which is entirely within 50 km of the source, while CALPUFF was used for the Chiricahua WA to include those areas beyond 50 km. An excerpt from the modeling protocol included below provides a more detailed explanation.

An analysis of the proposed source's effect on Class I increments and AQRVs in the Chiricahua WA will be made using the most recent EPA-approved version of the long-range transport model CALPUFF (version 5.8). The nearest boundary of the Chiricahua WA is approximately 47 km from the project site, while the farthest edge is approximately 77 km. CALPUFF will be applied for the Bowie project to estimate impacts at the Chiricahua WA, including for receptors that are within 50 km of the Bowie project site.

Given that Chiricahua NM lies completely within 50 km of the project site, however, only AERMOD will be used to predict impacts for comparison with the NO₂, PM₁₀, and PM_{2.5} Class I significance levels shown in Table 5-5 at this Class I area. Deposition impacts at this Class I area will be assessed with CALPUFF because AERMOD lacks the required chemical processing capabilities for this type of impact analysis.

Please let me know if you have any additional questions.

Regards,

Wayne D. Bixler

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From: Shepherd, Don [mailto:don_shepherd@nps.gov]

Sent: Thursday, October 24, 2013 3:27 PM

To: Wayne Bixler

Cc: John Notar; Bret Anderson

Subject: Bowie Power Station

Wayne,

The federal shutdown meant that i could not get to this until today, so here are some initial informal comments and questions.

I assume this application is for two of the four planned combined cycle combustion turbines (CCCTs)--correct? If so, it looks like adding the second set of CCCTs will be problematic with regard to deposition and visibility.

We noticed that, in Table 5-7, the increment consumption results for the closer Chiricahua NM were much lower than for the farther Chiricahua WA. (Is this due to the use of different models?) Please explain/verify these results.

Near-field visibility (VISCREEN) modeling:

- Please provide the VISCREEN input and output files.
- How were the VISCREEN NOx and PM10 emission rates determined? For example, is the 45.11 lb NOx/hr for one CCCT or both together? What operating condition does this represent?

thanks,

--

Don Shepherd

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"the man who really counts in the world is the doer, not the mere critic" TR 1891