

PMFermiCOLPEm Resource

From: Olson, Bruce
Sent: Thursday, March 08, 2012 5:14 PM
To: Randall D Westmoreland
Cc: FermiCOL Resource; Hsia, Anthony
Subject: RAI 6356--Air Emission Inventory Data
Attachments: RAI 6356.doc

As we briefly discussed earlier today, here is a draft RAI regarding air emissions calculations for the Fermi 3 COL project. If you think it would be helpful, we could have a brief clarification call next week or soon thereafter.

Thanks.....

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Request for Additional Information No. 6356 Revision 2

Fermi Unit 3
Detroit Edison
Docket No. 52-033
SRP Section: EIS 2.9 - Meteorology and Air Quality
Application Section: ER 4.4.1

QUESTIONS for Hydrological & Meteorology Branch (RHMB)

EIS 2.9-***

This Request for Information refers to the Conformity Applicability Analysis contained in Attachment 1 to Detroit Edison letter NRC3-11-0008 (ML110670232) dated March 4, 2011, and the response to an air quality question contained in Attachment 2 to Detroit Edison letter NRC-11-0023 (ML11192A190), dated July 7, 2011.

- a. The emissions inventory used to develop the NRC-authorized construction emissions presented in NRC3-11-0008 include emissions from a Switchback Locomotive engine. Using the information contained in the Detroit Edison emissions inventory, the staff estimates that the total NOx emissions from this engine are 45.3 tons per year for the years 2013, 2014, and 2015. This one engine represents, on average, approximately 40% of the total NOx emissions from preconstruction and NRC-authorized construction activities during the years 2013 through 2015.
 - i. Please explain how this engine will be used; for example, will it be used to transport materials to the site or around the site?
 - ii. What is the basis for assuming 300 hours of engine operation per month?
 - iii. The NOx emission factor used for the Switchback Locomotive engine emission calculation is 8.60 g/hp-hr which corresponds to the Tier 0 emission factors for line-haul operation presented in Table 1 of EPA-420-F-09-025, "Emission Factors for Locomotives" (April 2009). However, it appears that the duty cycle for this locomotive may more appropriately approximate low power cycle operation in a switch yard. In this case, the Tier 0 NOx emission factor of 12.60 g/hp-hr for switch yard operation presented in Table 2 of EPA-420-F-09-025 may be more appropriate. Please justify the selection of 8.60 g/hp-hr for estimating Switchback Locomotive engine NOx emissions.
 - iv. Has consideration been given to using alternative forms of transportation that would result in lower NOx emissions?

- b. The staff made the following assumptions about the operation of the Marine Engines-Aggregate Barge Deliveries in order to reproduce the annual Marine Engine NOx emissions presented in Appendix A.1, "Construction Emissions Combustion Source Summary," of Detroit Edison's emissions inventory:
- 20 days/month of operation during the 1st year of engine operation (Oct 2012 – Sep 2013)
 - 8 days/month of operation during the 2nd and 3rd years of engine operation (Oct 2013 – Sep 2015)
 - 4 days/month of operation during the 4th year of engine operation (Oct 2015 – Mar 2016)

The assumptions listed above conflict with the following information in Detroit Edison's emissions inventory:

- The construction schedule provided in Appendix A.0 (pg A.0-1) which shows that the Pushboat for the Aggregate Transport Barge is not scheduled to operate in March 2016
- Note 2 of Appendix A.1.3 (pg A.1.3-2) which states the aggregate transport barge is scheduled to operate 20 days per month in 2012, 8 days per month in 2013 and 2014, and 4 days per month in 2015 and 2016.

Please confirm the assumptions used to generate the annual Marine Engine NOx emissions presented in Appendix A.1 of the emissions inventory.

- c. Please describe how the emissions inventory presented in NRC3-11-0008 accounts for emissions from commercial and construction deliveries during plant preconstruction and NRC-authorized construction.
- d. Detroit Edison's response provided in NRC3-11-0023 states, in part, that the building of the cooling tower and intake structure are preconstruction activities. COL/ESP-ISG-4, "Interim Staff Guidance on the Definition of Construction and on Limited Work Authorizations," [ML082970729] states the facility design determines whether the cooling towers and intake structures, and their related components, are within the scope of NRC-authorized construction activities.

In accordance with the guidance provided in COL/ESP-ISG-4, please demonstrate that the plant cooling tower and intake structure are not within the scope of NRC-authorized construction activities because they do not have a safety function.

- e. Detroit Edison's response provided in NRC3-11-0023 quotes COL/ESP-ISG-4 as stating that the estimates of the impact breakdown between preconstruction and construction activities do not need to be detailed in order to inform the decision-making process under NEPA. However, Section 3.2, "Emission Calculations," of EPA's General Conformity Training Module

(http://www.epa.gov/air/genconform/training/files/General_Conformity_Training_Manual.pdf) states that the degree of detail in the CAA emissions analysis for determining if the emissions are below the *de minimis* levels depends upon how close the total emissions are to the *de minimis* levels. Table 3 of Enclosure 1 to NRC3-11-0008 shows that the estimated maximum annual NOx emissions from the NRC-authorized construction of Fermi 3 is 91.7 tons, which is close to the *de minimis* level of 100 tons/yr. The EPA General Conformity Training Module states a more detailed study is called for if the total emissions are close to the *de minimis* levels.

Detroit Edison's response provided in NRC3-11-0023 also states the 18-month duration for site preparation activities (April 2011 – September 2012) would be almost entirely preconstruction activities. However, the air emissions analysis provided in NRC3-11-0008 assumes that 70% of the combustion source emissions and 50% of the fugitive source emissions result from NRC-authorized construction activities, regardless of whether the activities occurred during the 18-month preconstruction period or the subsequent 44-month NRC-authorized construction period.

Please provide a more detailed study of the emissions resulting from NRC-authorized construction activities, based on the most recent construction equipment schedule and timeline. Indicate on the timeline when NRC-authorized construction activities are assumed to begin. Justify why the emissions resulting from NRC-authorized construction activities should not be based on the percent of overall resources or the amount and type of equipment that would be used each year to perform NRC-authorized construction activities.