PMFermiCOLPEm Resource

From: Olson, Bruce
Sent: Tuesday, March 20, 2012 7:55 AM
To: FermiCOL Resource
Subject: FW: Courtesy Copy of Letter sent to MDEQ by Detroit Edison--PREDECISIONAL--DELIBERATIVE--
Attachments: Fermi 3 General Conformity Letter to MDEQ 3 19 12.pdf

Thanks.....

Bruce Olson
Environmental Project Manager
Nuclear Regulatory Commission
NRO/DSER/RAP2
301-415-3731

From: Randall D Westmoreland [mailto:westmorelandr@dteenergy.com]
Sent: Monday, March 19, 2012 5:19 PM
To: Olson, Bruce; Colette Luff
Cc: Michael K Brandon; Peter W Smith
Subject: Courtesy Copy of Letter sent to MDEQ

Bruce and Colette,

Please find attached a courtesy copy of a letter sent to the Michigan Department of Environmental Quality regarding
a request to determine if the State Implementation Plan will accomodate Fermi 3 construction air emission estimates.

Randall Westmoreland
Nuclear Development-Licensing
Technical Expert
Office: 313-235-3368
****
CARING ABOUT THE ENVIRONMENT IS THE NATURE OF
OUR JOB.

Hearing Identifier: Fermi_COL_Public
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Subject: FW: Courtesy Copy of Letter sent to MDEQ by Detroit Edison--PREDECISIONAL--DELIBERATIVE--
Sent Date: 3/20/2012 7:54:52 AM
Received Date: 3/20/2012 7:54:55 AM
From: Olson, Bruce

Created By: Bruce.Olson@nrc.gov

Recipients:
"FermiCOL Resource" <FermiCOL.Resource@nrc.gov>
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DTE Energy Company
One Energy Plaza, Detroit, MI 48226-1221

DTE Energy

March 19, 2012

Mr. Robert Irvine, Supervisor-SIP Unit
Michigan Department of Environmental Quality, Air Quality Division
Constitution Hall, 3rd Floor North
525 West Allegan
Lansing, MI 48933-1502

Subject: Request for State Determination that Air Emissions from Construction Activities Associated with Possible Construction of a New Nuclear Unit (Fermi 3) at the Fermi Energy Center Do Not Exceed State Implementation Plan (SIP) Emission Budgets for Southeast Michigan

Dear Mr. Irvine:

Detroit Edison has ongoing plans to pursue a new nuclear unit at its existing Fermi Energy Center in Newport, Michigan. A final commitment has not been made by Detroit Edison to build this new unit, but Detroit Edison continues to pursue a license from the NRC as a distinct option to meet the electricity generating demands for Southeast Michigan.

One key aspect of this approval process that is currently unresolved relates to whether air emissions associated with this project have been incorporated into any current State Implementation Plan (SIP) developed to meet current National Ambient Air Quality Standards (NAAQS). The most recent SIP activity is a July 2011 submittal to the United States Environmental Protection Agency (EPA) to redesignate Southeast Michigan as an attainment area for the annual, and 24-hour, fine particulate matter ($PM_{2.5}$) NAAQS. The future year emission estimates included in this recent SIP document may not have included any emissions from constructing a new unit at the Fermi Energy Center site.

The NRC previously requested that Detroit Edison staff demonstrate that the activities associated with the construction of Fermi 3 within the NRC's jurisdiction would meet the Federal General Conformity requirements (40 CFR 51, Subpart W). Additionally, the United States Army Corps of Engineers (USACE), which is a cooperating agency with the NRC on the Fermi 3 Environmental Impact Statement, also requested a general conformity demonstration for construction activities within their regulatory purview. The USACE's interest relates primarily to site preparation activities requiring wetland permits and the associated construction of a wetland to mitigate site impacts. General conformity mandates that Federally-funded, or Federally-approved, projects must not affect the status of any current nonattainment area or jeopardize an area that was recently in nonattainment from regressing back into that designation (maintenance area). This conformity demonstration is only necessary for criteria pollutants in

the areas that are, or were, considered in nonattainment, and pollutants that are precursors to those key criteria pollutants.

Southeast Michigan is currently a nonattainment area for $PM_{2.5}$, and is considered a maintenance area for ground-level ozone. The relevant air pollutants that must not contribute to nonattainment therefore are:

- Nitrogen oxides (NO_x) – Ozone & $PM_{2.5}$ precursor
- $PM_{2.5}$ – Primary fine particulate matter
- Sulfur dioxide (SO_2) – $PM_{2.5}$ precursor
- Volatile organic compounds (VOC) – Ozone precursor

Detroit Edison performed an analysis to determine whether construction activities would exceed the critical *de minimis* emission threshold (100 tons per year) for the four relevant pollutants. The analysis demonstrated that the *de minimis* threshold was not exceeded for the NRC action. But, because the highest year estimate was 91.7 tons for NO_x, which is within 10 tons of the 100-ton threshold, the NRC asked whether one of the alternate means of satisfying the conformity analysis could also be used for Fermi 3. The emissions from the USACE action were well below the *de minimis* threshold. See Table 1 (Attachment 1) for the maximum annual emissions estimates associated with NRC and USACE scope activities.

One alternative to meet the general conformity requirement is for the State or local agency responsible for the applicable SIP to confirm that the expected emissions do not exceed the emission budgets in the SIP. As discussed below, we believe that this should be a relatively straightforward conclusion in this case given recent economic trends in the area and the fact that the area is currently showing compliance with the standard (and will soon be redesignated).

Detroit Edison is therefore asking the State of Michigan to document a determination that the total of direct and indirect emissions from the entire Fermi 3 construction scope results in a level of emissions which, together with all other emissions in the nonattainment or maintenance area, would not exceed the emissions budgets specified in the SIP for the area where the Fermi Energy Center is located, Monroe County. We believe this option is most appropriate to address the general conformity requirement because it ensures that the Fermi 3 air emissions can be accommodated under the current SIP. In the event that the emissions cannot be accommodated under the current emissions budget, we would need to provide the NRC a letter from the State committing to add the Fermi 3 emissions to the SIP along with a specific schedule for revising the SIP and supporting documentation.

Please respond to our request, and forward it to other organizations, as appropriate. Because of the status of the NRC's review of the Fermi 3 application and the need to take additional action in the event that the applicable SIP cannot accommodate Fermi 3 emissions, we would appreciate a response within 30 days. Thank you very much for considering our request to address this important air quality planning activity.

Please feel free to give me a call at (313)235-5611 if you would like to discuss the project or schedule a meeting.

Respectfully submitted,

Environmental Supervisor – Environmental Management & Resources

Copy to: Bruce Olson, US Nuclear Regulatory Agency
Collette M. Luff, US Army Corps of Engineers
Chuck Hersey, SEMCOG
Robert Rusch, MDEQ
Joan Weidner, SEMCOG
Mike Lebeis, DTE

2 Attachments

Attachment 1

Fermi 3 NRC and USACE Scope Construction Activities
Combined Estimated Maximum Annual Emissions
$PM_{2.5}$ - NO_x - SO_2 - VOC

(Following 1 Page)

Attachment 1

Table 1: Fermi 3 NRC and USACE Scope Construction Activities And Total Estimated Maximum Annual Emissions

	NRC Scope Activities, Fermi Site (1)		USACE Scope Activities, Fermi Site (2)		USACE Scope Activities, Mitigation Site (2)		Total Maximum Year Estimate	
	tons/year	*Max Year(3)*	*tons/year*	*Max Year(3)*	*tons/year*	*Max Year(3)*	*tons/year*	*Max Year(3)*
PM 2.5	37.1	2013	35.8	2013	11.3	2012	72.9	2013
NOX	91.7	2013	39.3	2013	4.6	2012	131	2013
SO2	0.26	2013	0.11	2013	0.01	2012	0.37	2013
VOC	37.4	2011	16	2011	0.36	2012	53.4	2011

(1) Submitted to the NRC via Detroit Edison Letter NRC3-11-0008, "Detroit Edison Company Response to NRC Requests for Additional Information Letter Related to the Environmental Review," dated March 4, 2011

(2) Submitted to the USACE via Detroit Edison Letter 2011-MEP-F3COLA-0050, "Air Conformity Applicability Analysis for USACE Authorized Activities Associated with the Fermi 3 Project," dated August 5, 2011

(3) The years referenced in this table are representative of the nominal timeline established for the air conformity applicability analysis (e.g. no activities have occurred in 2011 or 2012). A final commitment has not been made by Detroit Edison to build this new unit. As such, a schedule representative of future site activities is dependent upon this pending decision. The timeline utilized for the applicability analysis was established in an effort to conservatively encompass the maximum annual emissions potential throughout the scope of this project.

Attachment 2

Maintenance Plan and Transportation Conformity Budgets

From

Request to Redesignate to Attainment Status

For Both the Annual and 24-Hour $PM_{2.5}$ NAAQS

July 5, 2011

(Following 11 Pages)

Proposed Revision to Michigan's State Implementation Plan for Achieving the Particulate Matter less than 2.5 microns in diameter National Ambient Air Quality Standard (NAAQS)

Request to Redesignate to Attainment Status

For Both the Annual and 24-Hour $PM_{2.5}$ NAAQS

Southeast Michigan Counties of
Livingston, Macomb, Monroe, Oakland,
St. Clair, Washtenaw, and Wayne

and

Proposed Maintenance Plan for Southeast Michigan

July 5, 2011

Michigan Department of Environmental Quality
Air Quality Division

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7. Maintenance Plan

A maintenance plan must demonstrate continued attainment for at least 10 years after approval of a redesignation. Section 175A of the CAA sets forth the elements of a maintenance plan for areas seeking redesignation from nonattainment to attainment. Eight years after the redesignation, a revised maintenance plan for the next ten years must be submitted to the EPA. To address the possibility of future NAAQS violations, the maintenance plan must contain contingency measures.

Continued future attainment is demonstrated through emission inventory projections. This demonstration includes an attainment year inventory for 2008, an interim year of 2018, and a projected maintenance inventory for 2022. The future year inventories of primary $PM_{2.5}$, NO_X, and SO_2 emissions are shown to remain below attainment year 2008 emissions levels, insuring that the area remains in attainment.

Reductions in $PM_{2.5}$ emissions will be realized from a variety of sources, including federal MACT standards for hazardous air pollutants, federal diesel emissions programs, and federal mobile source control programs for both on-road and non-road sources. The future year emissions inventories do not include any EGU controls for the EPA's proposed Transport Rule or Michigan's mercury rule but reductions from these sources are expected. The EPA has also developed new NAAQS for NO_X and SO_2 which may further reduce primary $PM_{2.5}$, SO_2 and NO_X in Southeast Michigan. Voluntary diesel strategies such as clean school bus programs will result in additional $PM_{2.5}$ reductions. The maintenance plan inventory emissions totals for primary $PM_{2.5}$, NO_X, and SO_2 are provided in Table 10 for annual $PM_{2.5}$ and Table 11 for daily $PM_{2.5}$. The methodologies used for growing emissions to 2018 and 2022 as well as the controls that will impact emissions in those years are described in Appendix B and Appendix C.

Table 10. Maintenance Plan Emission Inventories for annual $PM_{2.5}$, 2008-2022.
All units are in tons per year.

	NOx			SO_2			$PM_{2.5}$		
	2008	2018	2022	2008	2018	2022	2008	2018	2022
EGU	70,008.00	57,627.53	60,748.05	233,870.64	205,085.72	216,191.10	1,376.31	1,443.34	1,521.60
NON-EGU	18,817.18	18,590.74	18,590.74	19,793.49	19,555.30	19,555.30	1,605.72	1,586.40	1,586.40
Area	17,157.57	17,563.12	17,805.41	5,702.94	5,837.74	5,918.27	5,406.06	5,533.84	5,610.18
Non-road	24,065.61	10,666.13	8,699.43	426.61	29.38	30.80	1,773.31	1,093.56	910.17
MAR	6,380.17	3,723.14	2,591.48	588.82	399.87	312.15	165.62	73.77	37.06
On-road	119,194.00	37,847.00	28,044.00	1,065.00	310.00	294.00	4,360.00	1,633.00	1,311.00
Total	255,622.53	146,017.66	136,679.11	261,447.50	231,218.01	242,301.62	14,686.02	11,363.91	10,976.30

Table 11. Maintenance Plan Emission Inventories for Daily $PM_{2.5}$, 2008-2022.
All units are in tons per winter day.

	NOx			SO_2			$PM_{2.5}$		
	2008	2018	2022	2008	2018	2022	2008	2018	2022
EGU	220.95	186.31	196.40	682.05	595.46	627.70	2.91	3.07	3.24
NON-EGU	49.76	53.49	53.49	51.33	55.17	55.17	3.98	4.28	4.28
Area	80.58	82.72	83.88	16.46	16.90	17.13	15.46	15.87	16.09
Non-road	47.82	23.47	19.44	0.81	0.06	0.07	3.70	2.39	1.98
MAR	19.80	15.90	14.34	1.75	0.00	0.00	0.50	0.00	0.00
On-road	366.20	117.80	88.10	3.10	0.90	0.80	15.70	6.60	5.60
Total	785.11	479.69	455.50	755.50	668.49	700.87	42.25	32.21	31.19

The focus of the $PM_{2.5}$ inventory effort was to produce emission inventories for the nonattainment year (2005) and the attainment year (2008). The future year projections (2018 and 2022) take into account existing control measures and measures that are promulgated and known to be on the way. Many of the future year emission estimates for this inventory product were grown from the LADCO Base B (2007, 2008) inventory. Where data was not available in the Base B inventory, data from the previous inventory cycle - Base M (2005) run was utilized, if appropriate.

The inventory was further processed by LADCO to produce annual and winter day totals. Full documentation of methodologies and models used to derive emission inventories is contained in Appendices B and C. A 2018 and 2022 maintenance inventory was prepared by LADCO and SEMCOG. Future year EGU emissions do not assume reductions from the federal proposed Transport Rule.

Maintenance Commitments

Michigan will develop and submit to the EPA, no later than eight years after approval of this redesignation request, a new maintenance plan covering the next ten-year period.

The MDEQ will continue to track $PM_{2.5}$ levels through the operation of an EPA-approved monitoring network as necessary to demonstrate ongoing compliance with the NAAQS. Data will be entered into the Air Quality System on a timely basis in accordance with federal regulations. The MDEQ will continue to produce periodic emission inventories as required by the federal Consolidated Emissions Reporting Rule (40 CFR, Part 51) to track future levels of emissions. The control measures for $PM_{2.5}$, SO_2 and NO_X emissions that were contained in the SIP before redesignation of these areas to attainment will be retained, as required by Section 175A of the CAA.

Michigan will expeditiously enact legal authorities needed for additional contingency control measures and/or studies of conditions resulting in unexpected $PM_{2.5}$ increases in response to identified triggering events.

Action Level Response

An Action Level Response will be prompted when a two-year annual average of 15 $\mu g/m^3$ or a two-year 98^{th} percentile average monitored value of 35 $\mu g/m^3$ or higher occurs within the maintenance area. A review of circumstances leading to the high monitored values will be conducted if this response is triggered. The MDEQ will explore whether a special event, malfunction, or noncompliance with permit conditions resulted in high $PM_{2.5}$ levels in order to immediately address corrective measures. The MDEQ will also review meteorological conditions during high $PM_{2.5}$ episodes. This review will be conducted within six months following the close of the $PM_{2.5}$ year. If the MDEQ determines that contingency measure implementation is necessary to prevent a future violation, the MDEQ will select and implement a measure that can be implemented promptly.

Contingency Measure Response

If a violation of the $PM_{2.5}$ NAAQS occurs, Michigan will select one or more control measures from the following list of potential contingency measure for implementation. The timing for implementation of a contingency measure is dependent on the process needed for legal adoption and source compliance, which varies for each measure. Some potential measures/controls have already been promulgated and are scheduled to be implemented at the federal or state levels. Other measures will need state administrative rulemaking or legislative approval. The MDEQ will seek to expedite the process of securing enabling authority and implementing the selected measures as needed to reduce $PM_{2.5}$ levels, with a goal of having measures in place as expeditiously as practicable, and within 18 months after state certification of the violation. Opportunity for public participation in the contingency measure response

will be provided. The MDEQ will submit the identified enforceable contingency measures to the EPA as revisions to the SIP as needed.

List of Potential Contingency Measures

1. Wood stove change-out program.
2. Steel mill controls.
3. Coke battery controls.
4. Diesel retrofit program.
5. Reduced idling program.
6. ICI Boiler controls.
7. Food preparation flame broiler control.
8. EGU controls.

8. Transportation Conformity Budgets

Transportation conformity is required by Section 176(c) of the CAA. Transportation plans, programs, and projects must conform to the applicable SIP. The federal transportation conformity rule established the criteria and procedures for determining whether conformity is met. Conformity to a SIP means that transportation activities will not produce new air quality violations, worsen existing violations, or delay timely attainment of the NAAQS.

Estimates of on-road motor vehicle emissions from cars, buses, and trucks driven on public roadways are projected for the maintenance period to assess emission trends and to ensure continued compliance with the $PM_{2.5}$ NAAQS. These estimates are considered a ceiling or "budget" for emissions and are used to determine whether transportation plans and projects conform to the SIP. Estimated on-road mobile emissions of $PM_{2.5}$ and NO_X must not exceed the emission budgets contained in the maintenance plan. The emissions estimates for this sector reflect appropriate and up-to-date assumptions about vehicle miles traveled, socioeconomic variables, fuels used, weather inputs, and other planning assumptions. On-road emissions have been projected to 2022 in the maintenance inventory.

Typically, the formula for calculating maintenance conformity budgets is:

> On-road emissions inventory for maintenance year + safety margin
>
> Where:
> safety margin = 90% of emissions reduction from all sources between the attainment year and the maintenance year.

However, recent EPA guidance states that the final budget is equal to either the calculated budget or the attainment year emissions, whichever is lower. Table 12 shows the conformity budgets resulting from the conformity budget formula. In all cases, the calculated budgets are higher than the attainment year emissions inventory. Therefore, the final budgets will be set equal to the 2008 on-road emissions inventory. These values are shown in Table 13 and Table 14.

Table 12. Motor Vehicle Emissions Budget Calculation for Livingston, Macomb, Monroe, Oakland, St. Clair, Washtenaw, and Wayne Counties.

Annual $PM_{2.5}$, *Ton per year*							
$PM_{2.5}$	Point-EGU	Point-Non-EGU	Area Total	MAR	Onroad	Nonroad	Total
2008	1,375.3	1,605.7	5,406.0	165.6	4,360.0	1,773.3	14,685.9
2022	1,521.0	1,586.0	5,610.0	37.1	1,311.0	910.2	10,975.3
Emissions Reduction	145.7	-19.7	204.0	-128.6	-3,049.0	-863.1	-3,710.6
Safety Margin							3,340
Conformity Budget							4,651
NOx	Point-EGU	Point-Non-EGU	Area Total	MAR	Onroad	Nonroad	Total
2008	70,008.0	18,817.2	17,157.6	6,380.2	119,194.0	24,065.6	255,622.6
2022	60,748.0	18,591.0	17,805.0	2,591.5	28,044.0	8,899.4	136,678.9
Emissions Reduction	-9,260.0	-226.2	647.4	-3,788.7	-91,150.0	-15,166.2	-118,943.7
Safety Margin							107,050
Conformity Budget							126,759
Daily $PM_{2.5}$, *Tons per day.*							
$PM_{2.5}$	Point-EGU	Point-Non-EGU	Area Total	MAR	Onroad	Nonroad	Total
2008	2.9	4.0	15.5	0.5	15.7	4.2	42.8
2022	3.2	4.3	16.1	0.0	5.6	1.5	30.7
Emissions Reduction	0.3	0.3	0.6	-0.5	-10.1	-2.8	-12.1
Safety Margin							10.9
Conformity Budget							16.5
NOx	Point-EGU	Point-Non-EGU	Area Total	MAR	Onroad	Nonroad	Total
2008	221.0	49.8	80.6	19.8	365.3	58.4	794.9
2022	196.4	53.5	83.9	14.3	88.1	9.0	445.2
Emission Reduction	-24.6	3.7	3.3	-5.5	-277.2	-49.4	-349.7
Safety Margin							315.0
Conformity Budget							380.6

Table 13. Final Motor Vehicle Transportation Conformity Budget Calculation for Annual $PM_{2.5}$. *In tons per year.*

	Tons/Year	
	$PM_{2.5}$	NOx
Total Emission Reduction 2008 - 2022	3,711	118,944
Safety Margin (90% of total reduction)	3,340	107,050
2022 On-Road Mobile Emissions	1,311	28,044
Calculated Budget = 2022 On-Road Emissions + Safety Margin	4,651	135,094
Attainment Year Emissions (2008)	4,360	119,194
Final Budget*	4,360	119,194

*Per EPA guidance, the final budget is equal to either the calculated budget or the attainment year emissions, which ever is lower.

Table 14. Final Motor Vehicle Transportation Conformity Budget Calculation for Daily $PM_{2.5}$. *In tons per day.*

	Tons/Winter Weekday	
	$PM_{2.5}$	NOx
Total Emission Reduction 2008 - 2022	12	350
Safety Margin (90% of total reduction)	11	315
2022 On-Road Mobile Emissions	6	88
Calculated Budget = 2022 On-Road Emissions + Safety Margin	17	403
Attainment Year Emissions (2008)	16	365
Final Budget*	16	365

*Per EPA guidance, the final budget is equal to either the calculated budget or the attainment year emissions, whichever is lower.

9. Public Participation and Comments

In accordance with Section 110 (a) (2) of the CAA, public participation in the SIP process was provided for as follows:

Notice of availability of the $PM_{2.5}$ redesignation documents and notice of the public comment period and opportunity to request a public hearing was posted on the MDEQ web pages at http://www.Michigan.gov/deqair and http://www.michigan.gov/deqcalendar.

A public hearing for this redesignation request, including the baseline emissions inventory for $PM_{2.5}$, SO_2 and NO_X and the maintenance plan SIP revision was held on May 26, 2011, at Constitution Hall in Lansing, Michigan.

A summary of comments received and the MDEQ responses are included in Appendix F.