PMFermiCOLPEm Resource

From: Olson, Bruce
Sent: Tuesday, January 26, 2010 12:23 PM
To: Randall D Westmoreland
Cc: Kirk LaGory; Fringer, John; FermiCOL Resource
Subject: Fermi 3 COLA Environmental Review
Attachments: Status of 12-23-09 RAI responses 1-26-10.doc

Please note revisions/updates---

Thanks.....

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Status of December 23, 2009 Detroit Edison Responses to
U.S. Nuclear Regulatory Commission (NRC) Requests for Additional Information (RAIs)
Fermi Nuclear Power Plant, Unit 3 (Fermi 3)
Combined License Application - Environmental Report

1/26/2010

RAI Number[1]	Response Date/ ADAMS Accession No.	Status of Response	Question Summary (RAI)	Full Text (supporting information)	Comments
GE1.1-1 ESRP 1.1 10 CFR 51, Subpart A, App. A (4) 40 CFR 1502.13 Regulatory Guide (Reg. Guide) 4.2, Ch. 1 Clean Water Action, Section 404(b)(1) and associated U.S. Army Corps of Engineers Guidelines	7/31/09 ML092290713 12/23/09, Att. 1 ML093650120	Complete	Provide a revised and more detailed (though still concise) Purpose and Need statement, clearly specifying the project purpose and identifying and justifying the need for the project.	The Purpose and Need statement should establish and justify a clear need for a specified quantity of electricity (in Megawatts, baseload or otherwise) within a specified service area and timeframe. This type of discussion would establish a clear need for additional electricity from the outset and a project purpose to fully or partially fulfill that need, and would form the strong basis needed for the identification and analysis of alternatives to meet the purpose and need. Section 1.1 of the Environmental Report (ER) provides the following statement of purpose for the proposed action: "The purpose of the proposed new nuclear power plant is to generate electricity for sale." Chapter 8 of the ER provides a discussion of the need for power. However, although the statement in Section 1.1 specifies a "purpose," it neither adequately nor fully expresses the purpose nor does it establish the "need" in	[9/10/09] Response unacceptable. As described in the preceding column, Detroit Edison needs to provide the "Purpose" part of the Purpose and Need statement that establishes a clear need for a facility that will generate a specified quantity of electricity (in Megawatts, baseload or otherwise) within a specified service area and timeframe. [9/11/09] Detroit Edison agreed to develop a revised "Purpose" statement with the requested information. The "Need" part of the response was acceptable. [1/15/10] Response acceptable, but clarification is requested. The new purpose statement includes "Provide new baseload electric generation capacity as early as 2021", but on page 1-3 of the ER it is stated that commercial operation would begin in June 2020. Are these two statements compatible?

[1] RAI numbers follow a specific form. RAIs apply to a specific section from the Environmental Standard Review Plan (ESRP; U.S. Nuclear Regulatory Commission. 1999. *Standard Review Plans for Environmental Reviews for Nuclear Power Plants*. NUREG-1555. Office of Nuclear Reactor Regulation, Washington, D.C. October, 1999), and the RAI number consists of the relevant ESRP section number followed by a unique number (e.g., the first RAI related to ESRP Section 2.7 would be numbered 2.7-1). If the RAI applies to more that one section of the ESRP, then the next higher section number is used (e.g., if an RAI is applicable to Sections 3.3.4, 3.3.5, and 3.3.6, then the RAI is assigned to Section 3.3, such as 3.3-1).

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				ER Chapter 1 (in addition to addressing the need later in the ER under Need for Power). 10 CFR 51 Subpart A, Appendix A (4) states: “The [purpose and need] statement will briefly describe and specify the need for the proposed action.” Guidance in Reg. Guide 4.2, Chapter 1 (first paragraph) states, “In Chapter 1 of its environmental report, the applicant should demonstrate the purpose of, and thus the benefits of, the proposed facility with respect to the power requirements to be satisfied, the system reliability to be achieved, or any other primary objectives of the facility and how these objectives would be affected by variations in the scheduled operation of the proposed station.” The CEQ regulations state, in 40 CFR 1502.13 Purpose and need, “The statement shall briefly specify the underlying purpose and need to which the agency is responding in proposing the alternatives including the proposed action.” Furthermore, since the U.S. Army Corps of Engineers (the “Corps”) is a cooperating agency for the Fermi 3 Environmental Impact Statement (EIS), a Purpose and Need Statement is required to also meet the Corps’ requirements under the Clean Water Act, Section 404(b)(1), and the	

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				associated Corps Guidelines. This is needed to support the alternatives analysis to be evaluated as part of the Corps' Section 404 review process. The Corps requires that the applicant provide the Purpose and Need Statement for its project. Purpose and need should be viewed as two parts of a whole: 1. There is a problem that needs to be addressed (project purpose); and 2. Need is the evidence that the problem actually exists. Thus, the project need must be a part of purpose and need statements. For the NRC, this would mean that the need for power analysis would be briefly summarized and included as part of the purpose and need statement in ER Chapter 1. Also, the purpose and need statement should be written so as not to focus on a particular alternative, but instead to allow for the identification of more than one possible alternative to potentially meet the "need."	
GE3.1-1 ESRP 3.1 10 CFR 51.45 Reg. Guide 4.2, Ch. 2	12/23/09, Att. 2 ML093650120	Not complete	Provide updated site layout information and a complete evaluation and assessment of short-term and long-term direct, indirect, and cumulative impacts on all resources based on site layout changes.	At the site audit, Detroit Edison indicated that a modified site layout was being developed to reduce impacts to critical environmental resources. This information would represent a significant change to the ER and	[1/15/10] Response unacceptable. There are some apparent inconsistencies in the presentation of the number of acres to be affected by development of Fermi 3. In addition, additional information is

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				would be important for all aspects of the EIS.	needed to complete the response. See comments at end of this table.
GE4-1 ESRP 4 and 5 Endangered Species Act of 1973, as amended	12/23/09, Att. 3 ML093650120	Complete	Provide the draft Environmental Protection Plan (EPP).	Information in the EPP will be reviewed and incorporated into analyses presented in the EIS. The final EPP will be included as an attachment and condition to the combined license.	[1/15/10] Response acceptable, but an Environmental Protection Plan was not provided with the response. A statement was provided that explained that NRC's EPP template was under review, and that Detroit Edison would prepare an EPP for the Fermi project once the template was finalized by the NRC.
AQ2.7-1 ESRP 2.7 40 CFR 51, Subpart W	12/23/09, Att. 4 ML093650120	Not complete.	Provide a general conformity analysis for construction and operation activities of the proposed Fermi 3 project due to nonattainment status of the area for 8-hour ozone and $PM_{2.5}$.	Section 2.7.2.1 of the ER states that "Monroe County and the counties that include the Detroit metropolitan area are ruled as non-attainment areas for the USEPA's $PM_{2.5}$ and 8-hour ozone standard." Accordingly, the site is subject to a general conformity analysis under 40 CFR 51, Subpart W. Provide a conformity analysis for ozone and $PM_{2.5}$ associated with construction and operation of Fermi 3, along with quantifying direct and indirect emission rates.	[1/15/10] Response unacceptable. Additional detail is needed to review the adequacy of the response. NRC needs to have detailed emission inventory spreadsheets to check whether all direct and indirect emission sources are included and their emission factors and activity levels are appropriate. For example, indirect emissions include commuter, support, and delivery vehicles traveling offsite within the entire nonattainment or maintenance area. [1/25/10] Detroit Edison indicated that the calculation package for this RAI response would be provided in the reading room.
AQ3.6.3-1 ESRP 3.6.3 10 CFR 51.71(d)	8/25/09 ML092400535 12/23/09, Att. 5 ML093650120	Complete	Provide particulate matter (PM_{10} and $PM_{2.5}$) emission estimations for the proposed natural draft cooling tower (NDCT) and the mechanical draft cooling towers (MDCT).	Section 2.7.2.2 of the ER states that "Sources of air emissions for Fermi 3 include two standby diesel generators, an auxiliary boiler, and a diesel fire pump, as well as a natural draft cooling tower (NDCT) and 4-cell	[10/26/009] Response unacceptable. Assumptions and emission calculations are reasonable. However, there seems to be an incorrect statement in the last paragraph of the response: "Therefore, the

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				mechanical draft cooling tower (MDCT)." In ER Section 3.6.3.1, emissions for other equipment were presented but emissions of PM (PM_{10} and $PM_{2.5}$) as drift from the NDCT and MDCT were not included.	maximum hourly and annual emissions of PM_{10} and $PM_{2.5}$ from the simultaneous operation of the NDCT and MDCT are expected to be 3.86 lb/hr and 16.94 tons/yr, respectively." The actual values should be half of the values in the RAI response (i.e., they should be 1.93 lb/hr and 8.47 tons/yr). Detroit Edison mistakenly presented the sum of PM_{10} and $PM_{2.5}$, but the PM_{10} value already includes the $PM_{2.5}$ value. Detroit Edison needs to submit the corrected information to NRC under oath or affirmation. [1/15/10] Response acceptable
AQ4.4.1-1 ESRP 4.4.1 10 CFR 51.71(d)	12/23/09, Att. 4 ML093650120	Not complete	Provide expected CO_2 emission rates during the worst year of construction. Emission sources considered should include engine exhaust emissions from heavy equipment and worker/delivery/support vehicles, and other fossil fuel combustion emissions.	CO_2 emissions during construction are needed for the climate change analysis to be presented in the EIS. Emissions from the worst year (i.e., the year when CO_2 emissions are expected to be highest) will provide a conservative estimate of climate change impacts.	[1/15/10] Response unacceptable. Additional detail is needed to review the adequacy of the response. NRC needs to have detailed emission inventory spreadsheets to check whether all direct and indirect emission sources are included and their emission factors and activity levels are appropriate.
AQ6.4-1 ESPR 6.4 Reg. Guide 1.23, Sec. C 10 CFR 51.45(c) 10 CFR 51.50 10 CFR 100.20(c)(2)	12/23/09, Att. 6 ML093650120	Not complete	Provide additional information or clarification regarding the following meteorological instrumentation issues identified at the site audit: • Distance between the meteorological tower and nearby trees; • Height of nearby trees; • Differences in temperature readings between	Visual inspection during the site audit indicated that the distance from the meteorological tower to the nearest obstruction (i.e., the wooded area located west of the tower) is less than ten obstruction heights. This distance does not comply with requirements identified in Reg. Guide 1.23, which states "The sensors should be located over level, open terrain at a distance of at least 10 times	[1/26/10] Response unacceptable. Additional information is needed to evaluate the effects of nearby trees on meteorological measurements. See additional comments at end of table.

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			the primary and secondary delta-temperature channels; and • Meteorological instrumentation vendor.	the height of any nearby obstruction if the height of the obstruction exceeds one-half the height of the wind measurement." Detroit Edison stated that this was a self-identified issue entered into the Fermi 2 corrective action system in 2004 and was resolved as having no impact on the monitoring program based on a comparison with historic data collected during the previous 30 years. The staff would like Detroit Edison to provide a written description of the evaluation that closed out this issue. Also, during the site audit, the Fermi 2 meteorological system engineer indicated that the secondary delta-temperature channel ($\Delta T = T_{60m} - T_{10m}$) recorded values that were consistently 0.2°C higher than the primary delta-temperature channel. This discrepancy translates to 0.4°C/100 m. Because this value is used in NRC's ΔT_{100m} method to determine the Pasquill-Gifford stability class, results from the primary and secondary monitoring systems could result in different stability class estimates. Provide an evaluation of the potential cause(s) and implication(s) of this temperature difference. The ER incorrectly lists the instrumentation vendor (i.e., the instrumentation was provided by	

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				Climatronics, not Climet).	
HY2.3.1-1 ESRP 2.3.1 10 CFR 51.70(b)	12/23/09, Att. 7 ML093650120	Complete	Provide maps and descriptions of the areal extent, cross section, and depth of all existing clay dikes installed during the construction of Fermi 1 and 2.	As determined during the site audit, more detailed information on geologic and hydrogeologic conditions is needed to assess the groundwater systems that could be affected by construction and operation of Fermi 3.	[1/15/10] Response acceptable.
HY2.3.1-2 ESRP 2.3.1 10 CFR 51.70(b)	6/19/09 ML091940262 12/23/09, Att. 8 ML093650122	Complete	Provide maps or isopach contour maps and descriptions of the areal extent and depth of all existing gravel fills on the Fermi site. Provide copies of Fermi 1 and Fermi 2 construction drawings: (DWG # 6C721-24; 6C721-9 (Fermi 1); 6C721-32; 6C721-23; 6C721-33; 6M721-2130; 6M721-2250; and 6C721-40).	As determined during the site audit, more detailed information on geologic and hydrogeologic conditions is needed to assess the groundwater flow systems that could be affected from construction and operation of Fermi 3.	[7/17/09] Response incomplete. Isopach contour maps and descriptions of the areal extent and depth of all existing gravel fills on the Fermi site--these have not been completed and, therefore, have not yet been supplied by Detroit Edison. NRC needs confirmation from Detroit Edison that all of these requested items will be transmitted to us no later than December 30, 2009. Also, these items must be submitted for docketing because they will be cited as references in the EIS. [7/17/09] Response unacceptable. Fermi 1 and Fermi 2 construction drawings--NRC must be provided copies of all of the requested drawings for docketing because they will be cited as references in the EIS. [1/15/10] Response acceptable.
HY2.3.1-3 ESRP 2.3.1 10 CFR 51.70(b)	12/23/09, Att. 9 ML093650122	Complete	Provide at least two east-west geologic cross sections that extend west of the Fermi site: one that crosses the Fermi 1 area and another that crosses the Fermi 2 area. Use the cross sections to show the clay dike, gravel fill,	As determined during the site audit, more detailed information on geologic and hydrogeologic conditions is needed to assess the groundwater flow systems that could be affected from construction and operation of	[1/15/10] Response acceptable.

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			native lacustrine clay, tills, sand and gravel above the dolomite bedrock, and the dolomite bedrock.	Fermi 3.	
HY2.3.1-4 ESRP 2.3.1 10 CFR 51.70(b)	12/23/09,Att.10 ML093650122	Complete	Using groundwater level data from piezometers and wells, construct and provide separate water table contour maps for rock fill, lacustrine sediments, and glacial tills under the Fermi site.	During the site audit, the NRC staff was told that water table data from the rock fill, glacial tills, and lacustrine clay were combined as a single hydrologic unit to derive water table contour maps, though their hydraulic properties are significantly different. This RAI requests that separate water table contour maps be prepared for each of these materials to better understand the groundwater flow systems under the Fermi site. The maps should also show seasonal variation in water table conditions.	[1/15/10] Response acceptable.
HY2.3.1-5 ESRP 2.3.1 10 CFR 51.70(b)	7/31/09 ML092290713 12/23/09,Att.11 ML093650122	Complete	Provide justification of the use of Butler's method to interpret the slug test data for rock fill. Provide published documents to support that justification.	Butler's method (mentioned in ER Section 2.3.1.2.2.4.1) can be applied to interpret data from confined and unconfined aquifers by using two different equations. An Aqtesolv tutorial document provided by Detroit Edison presented a Butler's method formula for confined aquifers. It is unclear whether or not the same formula is used to interpret data obtained from the rock fill which is under unconfined conditions.	[9/10/09] Response unacceptable. Some of the requested information was provided; however, as stated in the previous column, it is unclear whether or not the same formula is used to interpret data obtained from the rock fill which is under unconfined conditions. The response did not provide the requested clarification. [9/11/09] Argonne pointed out that Aqutesolv describes a method (Springer-Gelhar) applicable to unconfined aquifers that would be the more appropriate method to use in the calculations. Argonne requested that B&V/Detroit Edison re-run the analysis using the Springer-Gelhar method or perform calculations using that

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					approach to confirm that the Butler method approach used provides reasonable results. B&V and Detroit Edison will discuss these approaches to decide and report back to NRC on a path forward. [1/15/10] Response acceptable.
HY2.3.1-7 ESRP 2.3.1 10 CFR 51.70(b)	12/23/09,Att.12 ML093650122	Complete	Provide a contour map that shows the elevation of the bottom of all proposed excavations and maps that show the 3-dimensional extent of all proposed rock fills for Fermi 3. Provide information on the configuration of the floor grouting below the excavation areas for Fermi 3.	Information on excavation depth and the extent of rock fills is important for understanding the effects of construction and operations on groundwater hydrology. The foundation depths of Fermi 3 buildings differ. Grout is going to be applied within various excavation areas. The configuration of the floor grout at various depths would affect the groundwater flow in the vicinity of the excavation areas and the results of the dewatering model simulations. A full characterization of the grouting and proposed gravel fill at the Fermi 3 excavation areas will be used to evaluate the impacts of construction and operations on groundwater flow and quality.	[1/15/10] Response acceptable.
HY2.3.1-12 ESRP 2.3.1 10 CFR 51.70(b)	7/31/09 ML092290713 12/23/09,Att.11 ML093650122	Complete	Provide the electronic input and output files for all packer and slug tests.	The input and output files are needed to allow performance of confirmatory analyses for the EIS.	[9/10/09] Response acceptable. [1/15/10] Response acceptable. New packer and slug information was provided, based on the response to HY2.3.1-5.
HY2.3.1-15	9/30/09, Att. 11	Complete	Provide information on all NPDES	An understanding of the previous	[10/20/09] Response

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ESRP 2.3.1 10 CFR 51.70(b)	ML093350028 12/23/09,Att.11 ML093650122		discharge and temperature violations for Fermi 2. Provide the history of any radwaste/waste water discharges (to any location) from Fermi 2.	operational history for Fermi 2 is needed for the impact analysis to be included in the EIS.	unacceptable. In the response, Detroit Edison provided letters from Detroit Edison to the Michigan Department of Environmental Quality (MDEQ) or the Michigan Department of Natural Resources (MDNR). The staff also needs any correspondence from the MDEQ or MDNR to Detroit Edison related to these incidents. The staff also requests any formal Notices of Violation received by DTE from the MDEQ or the MDNR. Also, the wording of the RAI response is such that the staff believes there may be additional letters. If all "letters addressing NPDES discharge and temperature violations" were provided in the response, please revise the text to reflect this or provide the additional letters not included in the response. [1/15/10] Response acceptable.
HY4.2.1-1 ESRP 4.2.1 10 CFR 51.70(b)	12/23/09,Att.14 ML093650122	Complete	Using the measured water level data at the Fermi site, demonstrate that the results of the USGS regional model are applicable to the Fermi site.	The MODFLOW model presented by Detroit Edison requires model calibration by using the local water level data measured at the Fermi site.	[1/15/10] Response acceptable.
HY4.2.1-2 ESRP 4.2.1 10 CFR 51.70(b)	12/23/09,Att.15 ML093650122	Complete	Provide information on the calculation results of the drawdown (or water head) on the surface water bodies surrounding the Fermi site due to the dewatering operation of Fermi 3. Characterize all possible hydraulic connections among the bedrock aquifer under the Fermi site, the	To evaluate the impact on wetlands by the dewatering operation, the water level changes of surface water bodies, the glacial overburden, and the gravel fills at the Fermi site need to be known. Also, the hydraulic connections between the above features need to be characterized.	[1/15/10] Response acceptable.

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			surface waters (including wetlands, lagoons, cannels, ponds, and Lake Erie) in the vicinity of the site, and the existing and proposed gravel fills at the Fermi site.	The modeling results of drawdown of the Bass Islands aquifer were presented in the ER. However, in some areas (e.g. around the reactor and fuel buildings) the gravel/rock fills in the existing Fermi 2 and proposed Fermi 3 excavation areas may extend to the bedrock aquifer and create a connection between the bedrock aquifer and the surface water bodies in the vicinity of the Fermi site. Dewatering of the bedrock aquifer may also dewater the surface waters through the connection and to some extent through the glacial overburden. That can impact the wetlands at the Fermi site, which are situated at a higher elevation than the lake level of Lake Erie. The wetlands are generally recharged by precipitation and by Lake Erie during high lake levels.	
HY4.2.1-4 ESRP 4.2.1 10 CFR 51.70(b)	12/23/09,Att.16 ML093650122	Complete	Provide information on the derivation of hydraulic conductivity/transmissivity values of MODFLOW model cells within excavation areas.	The foundation depths of different buildings for the Fermi 3 differ. Grout would be injected to the geologic materials under different buildings with different foundation depths. The layer thickness used in MODFLOW was 20 meters for the upper Bass Islands Group aquifer. The method used to derive the hydraulic conductivity or transmissivity for the cells within the excavation areas were not provided in the ER.	[1/15/10] Response acceptable.
HY4.2.1-5 ESRP 4.2.1	12/23/09,Att.17 ML093650122	Complete	Clarify whether the MODFLOW Well Package used in the	In the MODFLOW calculation package provided by Detroit	[1/15/10] Response acceptable.

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10 CFR 51.45 and 10 CFR 51.70(b)			dewatering simulation is for Fermi 3 model cells or for other regional groundwater discharge cells outside the Fermi site If the wells are inside the Fermi site and used for groundwater withdrawal, provide maps and text to describe the locations and depths of wells for the dewatering operation during Fermi 3 construction. Identify the withdrawal rates and describe the withdrawal schedule of the dewatering operation.	Edison, an input file for the MODFLOW Well Package was included. However, in the ER, the Well Package was not mentioned. It is unclear whether the Well Package is used for cells inside or outside the Fermi site. The details of the planned dewatering operation were not discussed in the ER. With revised modeling results (see RAI 4.2.1-3 above), information on the dewatering schedule, locations and depths of dewatering wells may need to be updated.	
HY4.2.1-6 ESRP 4.2.1 33 CFR 330 10 CFR 51.45	12/23/09,Att.17 ML093650122	Complete	Provide justification of the use of the drain package of the MODFLOW for modeling the effect of dewatering operations during the construction of Fermi 3. Provide information on how the conductance values of the drainage cells within the excavation areas are derived. Provide information on the locations and elevations of the drains in the drainage cells within the excavation areas used in the MODFLOW model.	In Section 2.3.1.2.2.5.1 (p. 2-88, last paragraph) of the ER, quarry dewatering in the original regional model was represented using MODFLOW's drain package. The same approach is used for the excavation dewatering analysis for Fermi 3. However, the cells within the excavation areas are much finer in size in the dewatering analysis than in the regional model and the cells are at different elevations. If wells are used to dewater inside the excavation areas, it is unclear why the drainage package is needed. If the wells are for cells outside the Fermi site, the method used to derive the conductance of the drainage cells at Fermi 3 and information on their locations and depths were not presented in the ER.	[1/15/10] Response acceptable.
HY4.6-1	7/31/09	Not	Provide the Soil Erosion and	Detroit Edison has indicated that a	[9/10/09] Response unacceptable.

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ESRP 4.6 10 CFR 51.50	ML092290713 12/23/09,Att.18 ML093650122	complete. Update needed prior to completion of the draft EIS.	Sedimentation Control (SESC) plan for the construction of Fermi 3.	SESC plan will be developed after the layout of Fermi 3 is finalized. This plan will provide an important basis for the assessment of construction impacts in the EIS.	Detroit Edison stated that the SESC plan was not provided because it will not be completed until just prior to construction. However, information on SESC procedures and planning is needed for the Draft EIS. BMPs for soil erosion and sedimentation control are presented in the ER, but additional information that would be included in the SESC plan is needed. To ensure inclusion in the Draft EIS, this information must be provided on or before December 30, 2009. [9/11/09] ER Section 2.6.5 includes information focused mainly on excavated stockpiles. Additional information should be provided regarding the planned location(s) of the stockpiles, and overall site design plans for limiting the duration of the soil disturbing activities, for removing sediment from site runoff, and for temporary and permanent erosion and sedimentation controls. Additional information is available at www.michigan.gov/deq/0,1607,7-135-3311_4113---,00.html. Also, Detroit Edison could use the Fermi 2 SESC plan to develop a summary of the SESC procedures for Fermi 3. Detroit Edison agreed to provide the requested information. [1/15/10] Response acceptable. A description was provided of SESC contents, typical control measures

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					used by Detroit Edison, and spoils disposal. If the SESC becomes available in time, a more complete description will be provided in the Draft EIS.
HY4.6-2 ESRP 4.6 10 CFR 51.50	7/31/09 ML092290713 12/23/09,Att.19 ML093650122	Not complete. Update needed prior to completion of the draft EIS.	Provide the Storm Water Pollution Prevention Plan (SWPPP) for Fermi 3 operations.	Detroit Edison has indicated that a SWPPP will be developed after the layout of Fermi 3 is finalized. This plan will provide an important basis for the assessment of operational impacts in the EIS.	[9/10/09] Response unacceptable. Detroit Edison stated that the SWPPP was not provided because it will not be completed until after completion of construction. However, information on SWPPP procedures must be included in the Draft EIS, which is anticipated to be completed a number of years prior to the start of construction. Therefore, on or before December 30, 2009, Detroit Edison should provide either the SWPPP or a complete summary description of the SWPP procedures to be employed. [9/11/09] An acceptable approach would be to use the current SWPPP for Fermi 2 to develop a summary for Fermi 3. Detroit Edison agreed to provide the requested information. [1/15/10] Response acceptable. A summary description was provided of SWPP contents. If the SWPP becomes available in time, a more complete description will be provided in the Draft EIS.

RAI Number[1]	Response Date/ ADAMS Accession No.	Status of Response	Question Summary (RAI)	Full Text (supporting information)	Comments
NO3.7-1 ESRP 3.7 10 CFR 51.71(d)	9/30/09, Att. 15 ML093350028 12/23/09,Att.20 ML093650122	Complete	Provide the configuration for the proposed Fermi 3 switchyard including the types and number of equipment (e.g., 2 transformers at 500 MVA each, 4 circuit breakers, etc.).	Detailed information on the proposed switchyard was not provided in the ER and is needed to conduct the noise impact analysis for the EIS.	[10/20/09] Response unacceptable. Detroit Edison indicated that "Smaller components such as current transformers, potential transformers, and batteries are not considered significant noise contributors and are not included in the noise impact evaluation." Detroit Edison discussed noise sources and their contributions qualitatively, but did not provide the capacities and noise levels in dBA (octave band levels if available) for noise sources to judge whether these sources are not contributors to total noise levels. The NRC would like to see the estimated dBA values for these noise sources to determine if they are a significant noise source. [1/15/10] Response acceptable.
NO5.8.1-1 ESRP 5.8.1 10 CFR 51.71(d)	9/30/09, Att. 17 ML093350028 12/23/09,Att.20 ML093650122	Complete	Provide the noise modeling analysis for operations associated with the new locations for the NDCT, switchyard, and transmissions lines.	An impact analysis for operations that considers: (1) the newly proposed location for the NDCT; (2) site-specific switchyard configuration information; and (3) new transmission lines (Fermi 3 to Milan) is needed for the impact analysis to be presented in the EIS.	[10/20/09] Response unacceptable. The applicant indicated that "the site-specific switchyard was not included in the acoustical model because it will not contain any significant sources of facility noise, e.g., transformers . . ." The NRC would like to see the estimated dBA values for these noise sources to determine if they are a significant noise source. [1/15/10] Response acceptable
SE2.5.2-3 ESRP 2.5.2	7/31/09 ML092290713	Complete	Provide updated housing estimates and projections for ER	The 2000 census housing data used to characterize number and	[9/10/09] Response unacceptable. Requested data on other

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10 CFR 51.45 10 CFR 51.70	12/23/09,Att.21 ML093650122		Section 2.5.2.	types of units, vacancy, and adequacy of structures may no longer accurately reflect existing conditions. The staff assumes that housing data from the regional planning organization (SEMCOG) or other authoritative source may provide more detailed information relative to the communities that could be affected by an influx of workers. Additional data relative to temporary lodging (hotels, motels, RV parks) would also be relevant to assessing potential impacts of the temporary construction workforce.	temporary housing (e.g., hotels/motels) was not provided. [9/11/09] B&V/Detroit Edison will provide an inventory of hotels and motels in the Detroit/Toledo area. [1/15/10] Response acceptable.
SE4.4.2-8 ESRP 4.4.2 ESRP 5.8.2 10 CFR 51.45 10 CFR 51.70	12/23/09,Att.22 ML093650122	Complete	Provide revised RIMS II model output.	The staff assumes that the multiplier effect as modeled by the RIMS II Input-Output model is based on only the workforce that is relocated to the area, and does not include the existing workforce that is assumed to reside in the area (ER Sections 4.4.2, 4.4.2.4.6, and 5.8.2.7). The revised RIMS II output should also be based on the revised and updated construction cost estimates as specified in RAI number 4.4.2-6.	[1/15/10] Response acceptable.
TE2.4.1-11 ESRP 2.4.1 10 CFR 51.71 (d)	6/19/09 ML091940262 12/23/09,Att.23 ML093650122	Not complete. Update needed prior to completion of the draft EIS.	Provide a copy of the November 7, 2008 Wetlands Assessment letter from Michigan Department of Environmental Quality (MDEQ) and the Jurisdictional Determination letter from the U.S. Army Corps of Engineers (USACE).	The requested letters will support the analysis of impacts to wetlands that will be presented in the EIS. The information is not available elsewhere.	[7/17/09] Response incomplete. Two of the requested letters were provided. However, the jurisdictional determination letter from the Corps of Engineers was not provided because it has not yet been received from the Corps. Detroit Edison stated that this

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					letter will be provided when received. Therefore, this RAI remains open. [1/15/10] Response acceptable. The jurisdictional determination letter has not yet been received from the USACE, but a commitment to provide it to the NRC is made by Detroit Edison in their response. If the letter becomes available in time, the information in the letter will be referenced in the Draft EIS.
TE4.3.1-1 ESRP 4.3.1 10 CFR 51.71 (d)	12/23/09,Att.24 ML093650122	Not complete	Provide revised terrestrial ecology impacts data for the Fermi site based on the revised Fermi 3 site layout.	Prior to the site audit, Detroit Edison decided to make major changes in the site plan. Impacts from construction and operation of Fermi 3 would be substantially affected, compared to the previous proposal. At the site audit, staff discussed the need to revise existing resources conditions and impacts for the revised site plan. All information provided must address the revised site plan locations. Revised data will be used to complete the impact analyses that will be presented in the EIS.	[1/15/10] Response unacceptable. There are some apparent inconsistencies in the presentation of the number of acres to be affected by development of Fermi 3. See comments for RAI GE3.1-1 at end of this table.
TE4.3.1-4 ESRP 4.3.1 10CFR 51.71 (d)	12/23/09,Att.25 ML093650122	Complete	Provide a copy of the Conceptual Wetlands Mitigation Plan.	During the site audit, participants requested that Detroit Edison provide a conceptual mitigation plan to support the terrestrial ecology impacts analysis. The information provided must address the revised site layout.	[1/15/10] Response acceptable.

Additional Comments on RAIs

Comments on GE3.1-1

Please provide electronic versions of all revised figures in .tif format at a resolution of at least 300 dpi.

Please provide GIS polygons for information provided in revised figures 2.1-3, 2.1-4, 4.2-1, 4.3-1, 4.3-2, 4.3-3, 4.3-4, 4.3-5, 4.5-1, and 5.3-9.

On page 4-4 paragraph 3 it is stated that 2 acres of the Lagoona Beach Unit of the DRIWR will be converted to other purposes. On page 4-5, paragraph. 2, it's not clear if those 2 acres are included in the 290 acre figure for the total disturbed area.

On page 4-5, paragraph 2 the numbers presented here are difficult to reconcile with those presented elsewhere. It is reported here that there would be 290 acres disturbed by construction of Fermi 3 and that 108 of those overlap currently developed or previously altered areas. By subtraction, one would assume there were 182 acres (290-108) of previously undeveloped areas disturbed, but the value presented on page 4-38 and elsewhere is 189 ac (acres of terrestrial habitat disturbed by construction of Fermi 3).

On page 4-34, Figure 4.3-2 has a “permanently impacted” overlay on the Fox Road construction layout area. Figure 4.2-1 shows this same area as “Unit 3 New Construction (Temporary Impact).” According to the text, this area would be temporarily impacted.

On page 4-65, Figure 4.3-5, which is based on Figure 4.2-1, shows disturbance at the new meteorological tower location. This area appears to overlap wetlands, but no impacts are shown.

On page 9-25, paragraph 5, it is stated that “Fermi 3 is expected to require approximately 125 acres.” It is not clear what this number represents (because it is not presented earlier), nor is it clear why that number would not have changed with the new site layout.

On page 10-8, row 1, it would seem the operational impacts would be limited to the land that is dedicated to Fermi structures, and not include those areas that are restored. According to other portions of the ER, the area occupied by structures is only 27 acres.

On page 10-12, paragraph 4, line 4, 207 acres is changed to 125 here, but it is changed to 27 acres on page 10-29.

On page 10-34, Land Use, 116 acres is changed to 125 here, but it is changed to 27 acres on page 10-24.

Comments on AQ6.4-1

The staff is not convinced that there are no significant differences in wind speed patterns among the time periods analyzed in the applicant's response (i.e., 1974/1975, 1985, 1994, and 2003/2005).

Based on the information provided by the applicant in its response to RAI AQ6.4-1, the staff compared the percent of time the wind speed was less than 3 mph between the "downwind sectors" (i.e., when the meteorological tower was downwind of the trees, WSW clockwise to WNW sectors) and the "upwind sectors" (i.e., when the meteorological tower was upwind of the trees, NNW clockwise to SSW sectors). This comparison, shown below, indicates that, at the 10m level, the percent of time the wind speed is less than 3 mph for the downwind sectors increased from 5.6% in 1985 to 19.9% in 1994 to 26.5% in 2003-2005. For the upwind sectors, the percent of time the wind speed is less than 3 mph at the 10m level also increased, but not in such a drastic fashion. Note that there was essentially no change in the percent of time the wind speed was less than 3 mph at the 60m level for either the upwind or downwind sectors during the time periods analyzed. The staff believes these statistics support the conclusion that the height of nearby trees have impacted the wind flow in certain wind direction sectors.

Percent of Time Wind Speed < 3 mph				
	10m Level		**60m Level**	
Period Of Record	**Downwind Sectors**	**Upwind Sectors**	**Downwind Sectors**	**Upwind Sectors**
1985	5.6%	4.1%	1.1%	1.6%
1994	19.9%	6.6%	0.8%	1.4%
2003-2005	26.5%	7.1%	1.0%	1.6%

The following information is requested:

a) Please provide access to a more legible version of Figure 1 in Enclosure 1 to the response to RAI AQ6.4-1.

b) The response to RAI AQ6.4-1 states that the 2004 survey data represents 30 years of tree growth since the 1974 time frame. Please discuss whether the trees existed around the mid-1970's; if so, how tall were they then and have they ever been cut to their current height?

c) Please provide a copy of the data (i.e., percent occurrence of each wind speed class as a function of wind direction) used to generate the 1974-1975 wind roses presented in Figure 11 of Enclosure 1 to the response to RAI AQ6.4-1.

d) Please discuss the impact of the apparent increasing frequency of low wind speed observations due to the flow blockage resulting from these trees on the atmospheric dispersion analyses used to support the cooling system impacts in ER Section 5.3, the radiological impacts of normal operations in ER Section 5.4, and the environmental impacts of design-basis accidents and severe accidents in ER Sections 7.1 and 7.2.