

PMFermiCOLPEm Resource

From: Olson, Bruce
Sent: Friday, March 12, 2010 2:34 PM
To: 'Randall D Westmoreland'; Craig D Tylenda
Cc: Kirk LaGory; Hayse, John; FermiCOL Resource
Subject: Fermi 3 COLA--Environmental Review
Attachments: Status of RAI responses bao rev-3-12-10.doc

Attached is the latest Status Summary of RAI responses on the Environmental Report for Fermi 3.

Some of the text needs updating, e.g., the cultural resources narrative, but it is being forwarded to you for discussion in the weekly teleconference calls on March 15 & 22, 2010.

In particular, we should talk about those items that may not be resolved in the March 25, 2010, Rev. 1 COLA submittal and clarify the status of each item that still requires input or action.

Thanks.....

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**Status of 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
Updated March 12, 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 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.	<p>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.</p> <p>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</p>	<p>[2/11/10] Response acceptable. Detroit Edison explained that the values are compatible, but reflect different drivers.</p> <p>[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?</p> <p>[9/11/09] Detroit Edison agreed to develop a revised "Purpose" statement with the requested information. The "Need" part of the response was acceptable.</p> <p>[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</p>

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 than 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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				<p>nor fully expresses the purpose nor does it establish the “need” in ER Chapter 1 (in addition to addressing the need later in the ER under Need for Power).</p> <p>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.”</p> <p>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.”</p> <p>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.”</p> <p>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</p>	<p>facility that will generate a specified quantity of electricity (in Megawatts, baseload or otherwise) within a specified service area and timeframe.</p>

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				<p>also meet the Corps' requirements under the Clean Water Act, Section 404(b)(1), and the 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.</p> <p>Purpose and need should be viewed as two parts of a whole:</p> <ol style="list-style-type: none"> 1. There is a problem that needs to be addressed (project purpose); and 2. Need is the evidence that the problem actually exists. <p>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."</p>	
GE1.2-1 ESRP 1.2	11/23/09 ML093380365	Not complete. Update	Provide documentation or a description of the status of Coastal Zone Management (CZM)	Documented proof of CZM Certification must be provided to the NRC by Detroit Edison before	[12/04/09] Response acceptable. The requested status was provided, which included a

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10 CFR 51.45(d)		needed prior to completion of the draft EIS.	Certification for Fermi 3.	the NRC can issue a combined license. The current status and process for obtaining CZM Certification will be presented in the EIS.	statement that Detroit Edison is planning to submit a Joint Permit application by July 1, 2010. This date is prior to the date the EIS will be issued and therefore the status will need to be updated prior to completion of the draft EIS.
GE1.2-2 ESRP 1.2 10 CFR 51.45(d)	11/23/09 ML093380365	Not complete. Update needed prior to completion of the draft EIS.	Provide documentation or a description of the status of Clean Water Act Section 401 Water Quality Certification for Fermi 3.	Documented proof of Section 401 Water Quality Certification must be provided to the NRC before the NRC can issue a combined license. The current status and process for obtaining Section 401 Water Quality Certification will be presented in the EIS.	[12/04/09] Response acceptable. The requested status was provided, which included a statement that Detroit Edison is planning to submit a Joint Permit application by July 1, 2010. This date is prior to the date the EIS will be issued and therefore the status will need to be updated prior to completion of the draft EIS.
GE1.2-3 ESRP 1.2 10 CFR 51.45(d)	11/23/09 ML093380365	Not complete. Update needed prior to completion of the draft EIS.	Provide documentation or a description of the status of the required Nuclear Waste Fund waste disposal contract with the U.S. Department of Energy (DOE).	Per the Nuclear Waste Policy Act of 1982, as amended, before a combined license can be issued by the NRC for Fermi 3, Detroit Edison must provide either proof that such a contract is in place with DOE or an official document from DOE stating that Detroit Edison is making a good faith effort to get a contract.	[12/04/09] Response acceptable. The requested status was provided, which included a statement that Detroit Edison expects to execute the contract documents by July 1, 2010. This date is prior to the date the EIS will be issued and therefore the status will need to be updated prior to completion of the draft EIS.
GE2-1 ESRP Sections 2, 3, 4, and 5	7/31/09 ML092290713	Complete	Provide copies of handouts used during the Fermi 3 general site audit tour.	These handouts contain information not available elsewhere. The handouts are needed for the impact analysis and for citation in the EIS.	[9/10/09] Response acceptable.
GE2-2 ESRP Sections	7/31/09 ML092290713	Complete	Provide electronic versions of all Environmental Report Rev. 0,	Electronic versions of the figures used in the ER at sufficiently high	[9/10/09] Response acceptable.

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2, 3, 4, and 5			September 2008 (the "ER") figures in .jpeg, .png or .tif format at a resolution of at least 300 dpi.	resolution would facilitate production of the EIS and prevent the need for redrafting figures.	
GE2.2-1 ESRP 2.2, 2.4, 2.5, and 4.3	10/30/09 ML093090165	Complete	Provide the Geographic Information System (GIS) data (as electronic shapefiles) that were used to create the figures in the ER.	GIS data used to create figures in the ER are needed for the NRC to perform confirmatory analyses for the EIS. Figures that appear to be based on GIS data include, but may not be limited to: 2.2-1, 2.2-3, 2.2-4, 2.4-5, 2.5-17, and 4.3-2.	[11/12/09] Response acceptable
GE3.1-1 ESRP 3.1 10 CFR 51.45 Reg. Guide 4.2, Ch. 2	12/23/09 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 would be important for all aspects of the EIS.	[2/11/10] Detroit Edison will provide an updated response based on comments provided. [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 needed to complete the response. See comments at the end of this table.
GE4-1 ESRP 4 and 5 Endangered Species Act of 1973, as amended	12/23/09 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.
AC7.1-1 ESRP 7.1 10 CFR 50.34	9/30/09 ML093350028 2/15/10	Not complete. Update needed prior	Provide a reevaluation of the Design Basis Accidents (DBA) doses using the ESBWR Design Control Document (DCD)	During the site audit, Detroit Edison presented new DBA doses using DCD Revision 5. The NRC staff will use the X/Q values and	[2/22/10] Response acceptable, but updated values using short-term X/Q values were not provided with this response.

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10 CFR 52.79		to completion of the draft EIS.	Revision 5 source terms and site-specific X/Q values for the Exclusion Area Boundary (EAB) and Low Population Zone (LPZ).	calculate the EAB And LPZ doses for the DBAs, and compare the results of its calculations with the results of Detroit Edison's calculations.	<p>Updated analyses will be provided in revised COLA on March 25, 2010.</p> <p>[2/12/10] Detroit Edison indicated that Section 7.1 of the ER is being revised to incorporate DCD Rev 6, and the revised short term X/Q values.</p> <p>[10/20/09] Response acceptable, however, the revised values provided are already out of date and must be updated. Detroit Edison provided changes to the ER, but indicated that further change may be needed in response to revisions to the ESBWR DCD and other revisions to the COL. The NRC should be provided with updated analyses based on ESBWR DCD Rev. 6, which is currently available.</p>
AC7.2-1 ESRP 7.2 10 CFR 51.50(c)	9/30/09 ML093350028 1/29/10 ML100331451	Complete	Provide in electronic format the input and output files for the MACCS2 code used to evaluate the consequences of severe accidents in the ER. Include all files required to run the code for the base case calculation as well as sensitivities with respect to the release height, energy, meteorology, and precipitation assumptions.	During the site audit, Detroit Edison presented new severe accident consequence and risk estimates using DCD Revision 5, and Probabilistic Risk Assessment (PRA) Revision 3. The NRC staff will run the MACCS2 code and compare the results of its calculations with the results of Detroit Edison's calculations.	<p>[2/5/10] Response acceptable. Updated values provided.</p> <p>[10/20/09] Response acceptable, however, the revised values provided are already out of date and must be updated. Detroit Edison provided changes to the ER, but indicated that further change may be needed in response to revisions to the ESBWR DCD and other revisions to the COL. The NRC should be provided with updated analyses based on ESBWR DCD Rev. 6 and PRA Rev. 4, which are</p>

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AC7.2-2 ESRP 7.2 10 CFR 51.50(c)	9/30/09 ML093350028 1/29/10 ML100331451	Complete	Provide the revised results for accident-specific impacts to population and land from the Fermi 3 severe accident analysis, similar to that provided in Table 7.2-1 in the ER.	Detroit Edison has revised the values in ER Table 7.2-1 based on new MACCS2 calculations using ESBWR DCD Rev 5 and PRA Rev 3. Therefore, revised values for the ER Table 7.2-1 are needed for review and confirmatory analysis.	currently available. [2/12/10] Except for the values of cancer fatality risk in Column 3 of Table 7.2-2, response is acceptable. The values in this column are low by a factor 70. This was inferred by reviewing the post processor (READOUT.FOR) that was used to compile results from MACCS2 output. The cancer fatalities estimates already consider the latent effects. Therefore, these values need to be revised. [10/20/09] Response acceptable, however, the revised values provided are already out of date and must be updated. Detroit Edison provided changes to the ER, but indicated that further change may be needed in response to revisions to the ESBWR DCD and other revisions to the COL. The NRC should be provided with updated analyses based on ESBWR DCD Rev. 6 and PRA Rev. 4, which are currently available.
AC7.3-1 10 CFR 51.50(c) 10 CFR 52.79(d)(3)	10/30/09 ML093090165 1/29/10 ML100331451	Not complete	Provide in electronic format the analysis and assumptions used in determining averted costs for SAMAs. Discuss the process for ensuring that SAMAs related to operating procedures and administrative controls will be evaluated prior to plant startup. Explain how completion of this	Section 7.3.3 of the ER presents a discussion leading to the conclusion that no cost beneficial SAMDAs have been identified, and states that evaluation of specific administrative control measures for the ESBWR will be considered for implementation when they are developed prior to	[2/12/10] Response unacceptable. The response does not correctly consider the modified approach in assigning the external event accidents to release categories of internal events. This error results in underestimating the total benefits

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			analysis will be tracked. Also, evaluate the effect of changing the reported cost basis in NUREG/BR-184, which is in 1992-1993 dollars, to the current year, similar to the cost estimate process used in the MACCS2 analysis for determining offsite property losses resulting from severe accidents.	fuel load. The current analysis is based on cost bases in 1992-1993 dollars as given in NUREG/BR-184. For new reactors that are expected to have a 60-year lifetime, there is a need to readjust the cost values. NUREG/BR-184 states that the averted costs dollar measures "should be present valued and expressed in terms of the same year." Considering that the potential operation date for Fermi 3 is 2016 and beyond, there is a need for adjusting these costs estimates to the current date, especially for the replacement power costs that contribute the most to the estimated averted costs.	<p>The response uses a ratio method to estimate the offsite dose and cost risks for the total core damage frequency (CDF) based on the corresponding values from the Internal events CDF. PRA Rev. 4 provides a clear method in Table 10.3-3C for evaluating the potential consequences of other severe accidents using the at-power internal events. The use of this method results in about a factor of 10 increase in the offsite dose and cost risks for all CDF, leading to higher estimates of averted costs.</p> <p>[11/12/09] Response acceptable, however, the revised values provided are already out of date and must be updated by Detroit Edison in response to revisions to the ESBWR DCD and COL. NRC should be provided with updated analyses based on ESBWR DCD Rev. 6 and PRA Rev. 4 following methodologies consistent with the FSAR update.</p>
AQ2.7-1 ESRP 2.7 40 CFR 51, Subpart W	12/23/09 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	<p>[1/25/10] Detroit Edison indicated that the calculation package for this RAI response would be provided in the reading room.</p> <p>[1/15/10] Response unacceptable. Additional detail is needed to review the adequacy of the response. NRC needs to have detailed emission inventory</p>

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				analysis for ozone and PM _{2.5} associated with construction and operation of Fermi 3, along with quantifying direct and indirect emission rates.	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.
AQ2.7-2 ESRP 2.7 Reg. Guide 1.111, Sec. C Reg. Guide 1.145, Sec. C Reg. Guide 4.2, Sec. 2.3 10 CFR 51.50 10 CFR 51.70(b) 10 CFR 51 App. A 10 CFR 100.20(c)	11/23/09 ML093380365	Complete	Discuss the impacts of lake/land breeze on atmospheric dispersion estimates. Provide the reference Ryznar, E., et al., 1973, <i>An Investigation of Atmospheric Diffusion in the Vicinity of the Enrico Fermi Atomic Power Plant</i> .	During the site audit, Detroit Edison showed the NRC staff the reference: Ryznar, E., et al., 1973, <i>An Investigation of Atmospheric Diffusion in the Vicinity of the Enrico Fermi Atomic Power Plant</i> . This reference presents the potential impacts of lake/land breeze on atmospheric dispersion along the Lake Erie shoreline where the Fermi 3 facility will be situated. The document is not publically available and is needed for the analysis of air emissions dispersion.	[12/04/09] Response acceptable
AQ2.7-3 ESRP 2.7 Reg. Guide 1.23, Sec. C Reg. Guide 1.111, Sec. C Reg. Guide 1.145, Sec. C	10/30/09 ML093090165	Complete	Provide in electronic format the 2001-2007 onsite meteorological database.	These data are required by the staff to perform independent evaluations and assessments of atmospheric diffusion characteristics and station impacts on the environment. Data should be provided in a format compatible with that described in Appendix A to Reg. Guide 1.23.	[11/12/09] Response acceptable

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Reg. Guide 4.2, Sec. 2.3 10 CFR 51.50 10 CFR 51.70(b) 10 CFR 51 App. A 10 CFR 100.20(c)					
AQ2.7-4 ESRP 2.7 Reg. Guide 1.23, Sec. C Reg. Guide 1.111, Sec. C Reg. Guide 1.145, Sec. C Reg. Guide 4.2, Sec. 2.3, 3.4, 5.1, 5.2, 7.1 10 CFR 51.50 10 CFR 51.70(b) 10 CFR 51 App. A	9/30/09 ML093350028	Complete	Provide in electronic format all input and output files used in modeling, including PAVAN (short-term, accidental releases), XOQDOQ (long-term, routine releases), and SACTI (seasonal/annual cooling tower) models.	These data are required by the staff to perform independent evaluations and assessments of atmospheric diffusion characteristics and station impacts on the environment.	[10/20/09] Response acceptable.
AQ2.7-5 ESRP 2.7 Reg. Guide 1.145, Sec. C 10 CFR 51.50 10 CFR 51.70(b)	8/25/09 ML092400535	Complete	Describe and justify the methodology used to determine distances to the EAB and LPZ.	The determination of distances to the EAB and outer boundary of the LPZ, as discussed during the site audit, were not made according to the methodologies described in the Reg. Guide 1.145.	[10/26/09] Response acceptable. Although the response to RAI AQ2.7-5 is acceptable, NRC is concerned that the changes in the X/Q values will affect the accident analysis. Detroit Edison stated on 9-11-09 that new X/Q values and a revised accident analysis will be provided in response to RAI

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10 CFR 51 App. A					AC7.1-1.
AQ3.6.3-1 ESRP 3.6.3 10 CFR 51.71(d)	8/25/09 ML092400535 12/23/09 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 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.	[1/15/10] Response acceptable. [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 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.
AQ3.6.3-2 ESRP 3.6.3 10 CFR 51.71(d)	10/30/09 ML093090165	Complete	Provide: (1) a memo including vendor emission data for proposed stationary sources during operation, which were not cited in ER Tables 3.6-3 (standby diesel generators), 3.6-4 (auxiliary boiler), and 3.6-5 (fire pump engines); (2) the rationale for assuming 3% sulfur content; and (3) estimation of CO ₂ emissions for these sources.	ER Tables 3.6-3 to 3.6-5 present annual emission rates for criteria pollutants and volatile organic compounds (VOCs) during operation; however no specific reference was provided. During the site audit, Detroit Edison showed a memo including emission inventories for this equipment. When Fermi 3 is in operation, only ultra low sulfur diesel of 15 ppm will be on the	[11/12/09] Response acceptable

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				market. Estimates of annual emissions of CO ₂ and other greenhouse gases are needed for the climate change analysis that will be presented in the EIS.	
AQ3.6.3-3 ESRP 3.6.3 10 CFR 51.71(d)	7/31/09 ML092290713	Complete	Provide a copy of the figure used during the air quality/meteorology tour (titled "DTE Fermi Site") that included locations of existing and proposed air emission sources.	During the air quality/meteorology tour at the site audit, Detroit Edison handed out the scaled map titled "DTE Fermi Site," showing locations of existing and proposed emission sources. This information is not available elsewhere and is needed for air quality and noise impact analyses to be presented in the EIS.	[9/10/09] Response acceptable.
AQ4.4.1-1 ESRP 4.4.1 10 CFR 51.71(d)	12/23/09 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.	[1/25/10] Detroit Edison indicated that the calculation package for this RAI response would be provided in the reading room. [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.
AQ5.3.3.1-1 ESRP 5.3.3.1 10 CFR 51.71(d)	11/23/09 ML093380365	Complete	Provide information on the four-cell MDCT (similar to that for the NDCT in ER Table 5.3-17) including the typical number of hours per year in operation.	Detailed information and impact analysis for the NDCT were provided in the ER. Similar information is needed for the MDCT. Even though the MDCT will be operating intermittently, capacity and typical operational patterns are needed for	[12/04/09] Response acceptable

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				completeness of the impact analysis.	
AQ5.8.1-1 ESRP 5.8.1 10 CFR 51.71(d)	10/30/09 ML093090165	Complete	Provide expected annual CO ₂ emission rates during Fermi 3 operations. CO ₂ emission sources should include engine exhaust emissions from heavy equipment and worker/delivery/support vehicles, and other fossil-fuel combustion emissions	CO ₂ emissions during operation are needed for the climate change analysis to be presented in the EIS. Note that annual CO ₂ emissions from stationary sources during operation are included in RAI Number 3.6.3-2.	[11/12/09] Response acceptable
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 ML093650120	Not complete	<p>Provide additional information or clarification regarding the following meteorological instrumentation issues identified at the site audit:</p> <ul style="list-style-type: none"> • Distance between the meteorological tower and nearby trees; • Height of nearby trees; • Differences in temperature readings between the primary and secondary delta-temperature channels; and • Meteorological instrumentation vendor. 	<p>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 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.</p>	<p>[2/11/10] Detroit Edison will provide an updated response based on comments provided.</p> <p>[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.</p>

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				<p>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.</p> <p>The ER incorrectly lists the instrumentation vendor (i.e., the instrumentation was provided by Climatronics, not Climet).</p>	
AL9.3-1 ESRP 9.3 (I) 10 CFR 51.50(c) NEPA Section 102(2)(C)(iii)	8/25/09 ML092400535	Complete	Provide a more complete evaluation of the environmental conditions and expected impacts at Candidate Sites A and C.	In order to complete an analysis of the impacts of developing a nuclear plant at Alternative Sites A and C, more information is needed. Provide discussions, analyses, and/or other information to address the following: <ul style="list-style-type: none"> • The specific modifications that would be required for Sites A and C to establish a viable cooling water option for each. • Conceptual site plans for both 	[10/26/009] Response acceptable. Detroit Edison did not provide all of the information requested (i.e., impacts to other users of identified water sources and impacts to the receiving water source from projected discharges during operation) citing precedent in other published EISs. NRC will proceed with its review using the information available and, if needed, will present the range of potential impacts at each alternative site to reflect the

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				<p>Sites A and C.</p> <ul style="list-style-type: none"> • The anticipated impacts of site development in the following topical areas: <ul style="list-style-type: none"> - impacts to wetlands; - impacts to other users of the identified water source; - impacts to aquatic and terrestrial species, including threatened and endangered species; - impacts to land use (environmental, recreational, agricultural, other special uses); - impacts to visual resources; and - impacts to the receiving water source from projected discharges during operation. 	<p>uncertainty introduced by the lack of detail provided in Detroit Edison's response.</p>
<p>AL9.3-2 ESRP 9.3 (I) 10 CFR 51.50(c) NEPA Section 102(2)(C)(iii)</p>	<p>6/19/09 ML091940262</p>	<p>Complete</p>	<p>Provide copies of the Alternative Site Selection Reports (both the original site selection study completed in 2006 and the 2008 update on which the alternative sites discussion in ER Section 9.3 is based).</p>	<p>The Alternative Site Selection Reports contain details not presented in the ER and would enable a more complete understanding of the alternative site selection process and the data available for each of the identified candidate sites. The reports are not publically available but are needed as primary references to support the alternatives analysis to be presented in the EIS.</p>	<p>[7/17/09] Response acceptable.</p>

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AE2.4.2-1 ESRP 2.4.2 10 CFR 51.71(d)	7/31/09 ML092290713	Not complete	Provide copies of correspondence with Federal and State agencies (U.S. Fish and Wildlife Service [USFWS], Michigan Department of Natural Resources [DNR], Ohio DNR, Canadian agencies, etc.) regarding potential impacts to aquatic species and monitoring studies for Fermi 3.	Discussions with agencies regarding Fermi 3 and threatened and endangered species were mentioned in the text of the ER (Sections 2.4.1.2.1 and 2.4.1.2.2, for example), but references were not provided. At the site audit, it was mentioned that written records of discussions with these agencies existed, but are not publically available. This correspondence is needed for the impact analysis to be presented in the EIS.	[9/10/09] Response unacceptable. NRC requires that the discussions/correspondence identified in the RAI response (or an acceptable summary of those discussions) be submitted for docketing (under oath or affirmation) because they will be cited as references in the EIS.
AE2.4.2-2 ESRP 2.4.2 10 CFR 51.71(d)	6/19/09 ML091940262 11/23/09 ML093380365	Complete	Provide a copy of the interim monitoring report "Aquatic Ecology Survey, Detroit Edison Company Fermi 3 Project, Interim Report" prepared by AECOM Environment, and dated December 2008. Provide a more recent version and the final report when available.	ER Section 2.4.2 indicated that additional aquatic ecology monitoring was underway and the information in the requested interim report was discussed at the Fermi 3 site audit. This report contains the most recent available information that: <ul style="list-style-type: none"> • evaluates the abundance and occurrence of aquatic organisms in the vicinity of the Fermi site; • identifies the aquatic habitat features in the vicinity of the Fermi site; • provides additional support for statements in the ER that Federal and State-listed threatened and endangered aquatic species have not been observed in the vicinity of the Fermi site; and • evaluates impingement mortality associated with the 	[12/04/09] Final report was provided by Detroit Edison with 11/23/09 RAI response. [7/17/09] Response acceptable. Final report to be provided on or before 11/25/09 must be submitted for docketing because it will be cited as a reference in the EIS.

RAI Number ¹	Response Date/ ADAMS Accession No.	Status of Response	Question Summary (RAI)	Full Text (supporting information)	Comments
				<p>intake structure based upon the first half of the ongoing one-year monitoring effort.</p> <p>The final report is expected to include the results of the entire one-year monitoring effort for aquatic ecology, including results of the entrainment monitoring at the existing Fermi 2 intake.</p>	
AE2.4.2-3 ESRP 2.4.2 10 CFR 51.71(d)	11/23/09 ML093380365	Complete	Provide the most currently available information pertaining to entrainment of aquatic organisms at the Fermi 2 intake.	Entrainment data are needed to understand the potential effects of Fermi 3 operations. The interim report identified in RAI 2.4.2-2 does not contain entrainment data. If there is information available, it would be useful to have a summary of that information.	[12/04/09] Response acceptable.
AE2.4.2-4 ESRP 2.4.2 10 CFR 51.71(d)	6/19/09 ML091940262 11/23/09 ML093380365	Complete	Provide a copy of the interim monitoring report "Water Quality Survey Detroit Edison Company Fermi 3 Project, Interim Report," prepared by AECOM Environment, and dated December 2008. Provide a more recent version and the final report when available.	The requested interim report was discussed at the Fermi 3 site audit and provides the most recent information about water quality in the vicinity of the Fermi site. The report is not publically available and is needed for the analysis of impacts to be presented in the EIS.	[12/04/09] Final report was provided by Detroit Edison with 11/23/09 RAI response. [7/17/09] Response acceptable. Final report to be provided on or before 11/25/09 must be submitted for docketing because it will be cited as a reference in the EIS.
AE2.4.2-5 ESRP 2.4.2 10 CFR 51.71(d)	2/15/10 ML100541329	Complete	Provide an analysis of the potential contribution of chemical and thermal effluents from the proposed Fermi 3 to algal production in Lake Erie, in the vicinity of the Fermi site and in the lake's western basin. The response should address <i>Lyngbya wollei</i> , which has recently been identified as a	The analysis provided in the Environmental Report (ER) addresses the potential for discharges from the proposed Fermi 3 facility to increase production of algae in Lake Erie, in the vicinity of the Fermi site and in the lake's western basin, including but not limited to <i>Lyngbya wollei</i> . The following	[2/25/10] Response acceptable.

RAI Number ¹	Response Date/ ADAMS Accession No.	Status of Response	Question Summary (RAI)	Full Text (supporting information)	Comments
			<p>problematic invasive blue-green algae in Lake Erie, in addition to other algal species.</p>	<p>information will be used to complete the staff's NEPA analysis of the environmental effects of operating the facility.</p> <p>Table 3.3-1 in the ER (Section 3.3.2.3) identifies the use of phosphoric acid as a corrosion inhibitor in the plant service water system and discharge of this chemical into Lake Erie could contribute to phosphorus loading in the lake. Expected quantities of chemical constituents that could be released to Lake Erie at the permitted discharge are described in ER Section 3.6.1 (including Table 3.6-1) and effluent concentrations are identified in Table 3.6-2; however, estimates of the increases in ambient concentrations of nutrients (primarily phosphorus and nitrogen) in the vicinity of the permitted discharge for Fermi 3 should be calculated.</p> <p>Information about historic trends regarding concentrations of nutrients in Lake Erie, in the vicinity of the Fermi site and in the lake's western basin, and the estimated changes in nutrient concentrations that would occur in those areas as a result of contributions from Fermi 3 operation would facilitate evaluation of potential changes in algal production. In addition, any available information pertaining to algal production in the vicinity of</p>	

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				<p>the existing Fermi 2 discharge should be provided for reference.</p> <p>A sufficient analysis would combine information for both chemical and thermal changes that would be expected as a result of Fermi 3 operations to estimate the change in algal production.</p>	
<p>AE2.4.2-6 ESRP 2.4.2 10 CFR 51.71(d)</p>	<p>1/29/10 ML100331451</p>	<p>Complete</p>	<p>Provide copies of references and other documentation containing information pertaining to the potential for the rayed bean (<i>Villosa fabalis</i>) to occur in the vicinity of the Fermi site.</p>	<p>Additional information is needed to adequately address the potential for Fermi 3 construction and operations to affect the rayed bean, a mussel species that is a candidate for listing under the Endangered Species Act. The rayed bean was not considered a potential species of concern in the ER (Section 2.4.2.4).</p> <p>It was indicated during discussions with Detroit Edison that there is information suggesting that the rayed bean is not present and unlikely to occur in Lake Erie in the vicinity of the Fermi 3 site. Sources for this information are derived from the results of surveys and research conducted by DTE Energy and others (e.g., Michigan Natural Features Inventory, the U.S. Army Corps of Engineers [USACE], and U.S. Geological Survey [USGS]), including:</p> <ul style="list-style-type: none"> • Ongoing native mussel surveys conducted near Detroit Edison's Monroe Plant. 	<p>[2/5/10] Response acceptable.</p>

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				<ul style="list-style-type: none"> • Approximately 30 years of information on mussels in the western basin of Lake Erie have been collected and evaluated by the USGS (including samples collected near the Fermi site). Reportedly, no rayed bean specimens have been identified in those data. • Results of sampling by DTE Energy researchers at the Monroe Plant from 1983 to 1993 that are documented in a 1993 paper. Reportedly, no rayed bean mussels were observed. • Surveys for mussels by the USACE approximately 2 miles south of the Fermi site reportedly found no live or dead rayed bean specimens. • Observations during sediment sampling and buoy maintenance by Detroit Edison staff within the Fermi exclusion area indicate that the sediment is predominantly hardpan, which is not suitable habitat for the rayed bean. • Rayed bean have reportedly not been observed in surveys conducted by the Michigan Natural Features Inventory at the mouth of Swan Creek in Lake Erie (near the northern boundary of the Fermi site) or 	

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				<p>in Swan Creek.</p> <p>Original source documents or a summary of these findings (provided to the NRC under oath and affirmation) are needed to serve as references for the analysis to be presented in the EIS.</p>	
<p>AE4.3.2-1 ESRP 4.3.2 10 CFR 51.71(d) 33 CFR Section 320.2-320.4 40 CFR Part 230</p>	<p>10/30/09 ML093090165</p>	<p>Complete</p>	<p>Provide any available chemical characterization information pertaining to dredged materials from areas in Lake Erie near the Fermi site.</p>	<p>The requested information will assist with evaluating the potential impacts to aquatic organisms from suspension of sediments that could occur during dredging operations to prepare the intake area/barge slip and during placement of the discharge pipe for Fermi 3.</p>	<p>[11/12/09] Response acceptable</p>
<p>AE5.2.2-1 ESRP 5.2.2-1 10 CFR 51.71(d)</p>	<p>8/25/09 ML092400535</p>	<p>Complete</p>	<p>Provide an updated description of the design and operation for the fish screening system at the Fermi 2 intake and for the proposed Fermi 3 intake.</p>	<p>The description of the fish screening system in ER Section 5.3.1.2.2 describes a return sluiceway in use at the Fermi 2 intake to return impinged organisms to the lake. However, based on observations made during the site audit, this system uses a mulching process that does not return impinged fish to Lake Erie. An accurate description of the design and operation of the screening system for Fermi 2 is needed and the expected design for the Fermi 3 intake needs to be clarified.</p>	<p>[10/26/09] Response acceptable.</p>
<p>AE5.3.1.2-1 ESRP 5.3.1.2 10 CFR 51.71(d)</p>	<p>6/19/09 ML091940262</p>	<p>Not complete</p>	<p>Provide information pertinent to the evaluation of the cumulative impacts of impingement and entrainment on aquatic resources</p>	<p>The impingement and entrainment information that is provided in ER Section 5.3.1.2.4 for other nearby power generation facilities dates</p>	<p>[7/17/09] Response unacceptable. NRC requires that the two documents identified in the RAI response be submitted for</p>

RAI Number ¹	Response Date/ ADAMS Accession No.	Status of Response	Question Summary (RAI)	Full Text (supporting information)	Comments
			in the Western Basin of Lake Erie by providing copies of recent 316(b) evaluation reports from the Detroit Edison Monroe Plant and from other power plants (e.g., Bayshore in Ohio) within the Western Basin of Lake Erie.	from 1978 or earlier. Evaluation of cumulative impacts from the proposed Fermi 3 facility would be enhanced by consideration of more recent impingement and entrainment data for other nearby facilities. Please supplement the information in the ER by submitting the most recent 316(b) evaluation reports that are available.	docketing because they will be cited as references in the EIS. Randy Westmoreland of Detroit Edison stated that he will discuss with his management the matter of NRC's requirement to submit these and all requested documents and other items for docketing; and will get back to NRC with a response or for further discussion. (NOTE: This applies to all such issues for the June 19 submittal identified in this table and to <u>all</u> future RAI response submittals.)
BC10.4.2-1 ESRP 10.4.2 10 CFR 51.45 10 CFR 51.71	7/31/09 ML092290713	Complete	Provide an updated and citable source for monetized benefits and costs.	All monetized benefits and costs in the ER are presented in 2006 dollars. With the exception of operating costs, no source document is provided in this section.	[9/10/09] Response acceptable.
BC10.4.2-2 ESRP 10.4.2 10 CFR 51.45 10 CFR 51.71	10/30/09 ML093090165	Complete	Provide data on spent fuel storage costs. Data should show total construction and annual operating costs for an independent spent fuel storage facility (ISFSI), that is either: <ul style="list-style-type: none"> • built to support spent fuel storage at the Fermi 2 reactor; • an expansion of a Fermi 2 reactor ISFSI to accommodate Fermi 3 spent fuel; or • built at the Fermi 3 reactor, after a specified time period to be provided 	Spent fuel storage, particularly dry storage, is an important aspect of the operation of a nuclear power plant, and may be of particular concern to the public. Construction and operating costs specified separately from the costs of the remainder of the plant provide the public with additional information on nuclear waste activities and the associated costs.	[11/12/09] Response acceptable

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CR2.5.3-1 ESRP 2.5.3 10 CFR 51.71 (d) 36 CFR 800	9/30/09 ML093350028	Complete	by Detroit Edison. Provide copies of Native American consultations; documentation of meetings with the Wyandotte Nation; and additional correspondence with the Wyandotte regarding the draft Phase I report and the Wyandotte letter of support.	Information included in this documentation will be used to complete the NEPA analysis and to support compliance with the Section 106 process.	[10/20/09] Response acceptable.
CR4.1.3-1 ESRP 4.1.3 ESRP 5.1.3 10 CFR 51.71 (d) 36 CFR 800 36 CFR 63	7/31/09 ML092290713	Not complete	Provide copies of all past, present, and future correspondence and documentation of discussions between Detroit Edison (or its consultants), and the State Historic Preservation Office (SHPO), regarding cultural resources and/or historic properties in the direct and/or indirect areas of potential effect (APEs) for Fermi 3, and Fermi 1 and 2 as they relate to Fermi 3.	Comments from the SHPO on the findings of the Phase I reports conducted for the project, including comments on National Register of Historic Places (NRHP)-eligibility of those cultural resources identified within the archaeological and architectural APEs for the project, were not available at the time that the ER was prepared. This information will be used to complete the NEPA analysis and to support compliance with Section 106. Note that personal correspondence can be provided in reading rooms.	[9/10/09] Response unacceptable. Regarding the three additional documents placed in reading rooms on or before August 7, 2009, and any future correspondence and documentation to be provided, NRC requires that these items (or an acceptable summary of the content of these items) be submitted for docketing (under oath or affirmation) because they will be cited as references in the EIS.
CR4.1.3-2 ESRP 4.1.3 and ESRP 5.1.3 10 CFR 51.71 (d) 36 CFR 800 43 CFR 10	7/31/09 ML092290713	Complete	Provide a document describing how ITC Transmission would identify and/or protect cultural resources during ROW construction and maintenance, including measures in the event that unanticipated archaeological resources or human burials are identified during construction, and including procedures required by applicable State and Federal laws for human burials.	This information will be used to complete the NEPA analysis and to support compliance with the Section 106 process.	[9/11/09] Response acceptable. Detroit Edison pointed out that their response was directed at the specific RAI, i.e., to describe the procedures ITC would follow to identify and protect cultural resources <u>during</u> construction and maintenance activities. Therefore, NRC will request the information identified above in a supplementary RAI that asks for a description of measures to be

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					<p>employed by ITC <u>prior</u> to construction.</p> <p>[9/10/09] Response unacceptable. ITC's measures for archaeological and cultural resources indicate that if archaeological materials are identified during construction, then the project would stop and ITC and the SHPO would be notified. Typically, cultural resource investigations are conducted prior to construction, to identify and avoid any NRHP-eligible historic properties (i.e., archaeological sites). In this regard, we need to be provided with something for cultural resources that is similar to the first four measures for Wetland Protection provided in the response to RAI TL4.1.2-1. Furthermore, the response does not include a description of the plans for unanticipated discoveries of archaeological resources and of human remains beyond the contractor contacting ITC and the SHPO. What is needed to satisfy both of the above requirements is a document describing how ITC would identify and/or protect cultural resources prior to right-of-way construction and maintenance, as well as plans that describe procedures that will be implemented in the event that unanticipated archaeological resources or human burials are identified during construction. The</p>

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					<p>procedures regarding human burials would be those required by applicable State and Federal laws, which include:</p> <ul style="list-style-type: none"> • National Historic Preservation Act of 1966, as amended (36 CFR 800.13), • Section 2853 of the Public Health Code (Act 368 of 1978), Michigan Compiled Laws (MCL) 333.2853; Michigan Statutes Annotated (MSA) 14.15(2853) • 1982 Annual Administrative Code Supplement (AACCS), R 325.8051 • Section 160 of the Michigan Penal Code, MCL 750.160; MSA 28.357 • 1988 Public Act (PA) 452; MCL299.51
CR4.1.3-3 ESRP 4.1.3 ESRP 5.1.3 10 CFR 51.71 (d) 36 CFR 800	8/25/09 ML092400535	Complete	Provide documentation that identifies the following types of cultural resources within the study areas for the alternatives, including a description of NRHP-listed and -eligible historic properties (archaeological and above ground); National Historic Landmarks, and State Register-listed and -eligible cultural resources (archaeological and architectural).	Information included in this documentation is critical to ensuring a thorough and complete EIS review of project impacts. Information included in this documentation will be used to complete the NEPA analysis and to support compliance with the Section 106 process.	[10/26/009] Response acceptable.
CR4.1.3-4 ESRP 4.1.3	11/23/09 ML093380365	Complete	Provide a document outlining standard procedures that Detroit Edison would follow in the event	Information included in this documentation is critical to ensuring a thorough and complete	[2/22/10] Response acceptable. [12/9/09] Response unacceptable.

RAI Number ¹	Response Date/ ADAMS Accession No.	Status of Response	Question Summary (RAI)	Full Text (supporting information)	Comments
10 CFR 51.71 (d) 36 CFR 800 43 CFR 10	2/15/10 ML100541329		that unanticipated archaeological resources or human burials are identified during construction, including procedures required by applicable State and Federal laws for human burials.	EIS review of project impacts. This information will be used to complete the NEPA analysis and to support compliance with the Section 106 process.	There is insufficient detail provided in the response. Detroit Edison should provide the following additional information: (1) the name of the "appropriate authorities," referenced in the response, that would be contacted in the event of an unanticipated discovery of archaeological resources or human remains during construction activities; and (2) for each protective measure, a list of the applicable State and Federal laws, statutes, and other regulations related to the protection of archaeological resources and human remains that will be complied with.
CR4.1.3-5 ESRP 4.1.3 10 CFR 51.71 (d) 36 CFR 800	7/31/09 ML092290713	Complete	Provide a description of the measures that will be used to avoid, minimize and/or mitigate any effects on all historic properties associated with construction and pre-construction work.	Information included in this documentation is critical to ensuring a thorough and complete EIS review of project impacts. This information will be used to complete the NEPA analysis and to support compliance with the Section 106 process.	[9/10/09] Response acceptable.
CR4.1.3-6 ESRP 4.1.3 ESRP 5.1.3 10 CFR 51.71(d) 36 CFR 800	6/19/09 ML091940262	Not complete. Update needed prior to completion of the draft EIS.	Provide copies of current Phase I Cultural Resources reports prepared for the Fermi 3 project and copies of forthcoming Phase I reports that have been revised per SHPO comments. Reports should be in color, and include all figures, photos, and appendices.	Information included in this documentation is critical to ensuring a thorough and complete EIS review of project impacts. This information will be used to complete the NEPA analysis and to support compliance with the Section 106 process.	[7/17/09] The requested Phase I report was provided, but revisions based on SHPO comments were not because those comments have not yet been received. NRC needs to know when the revisions will be provided, and the additional RAI CR4.1.3-6 submittal(s) needs to be added to Detroit Edison's future RAI response submittal schedule. To meet the environmental review schedule, this information must be

RAI Number ¹	Response Date/ ADAMS Accession No.	Status of Response	Question Summary (RAI)	Full Text (supporting information)	Comments
					<p>provided with the December 30, 2009 RAI submittal or sooner. (NOTE: This requirement also applies to Detroit Edison's response to RAIs CR4.1.3-7, CR4.1.3-8, and CR4.1.3-9.) Randy Westmoreland stated that Detroit Edison will provide NRC with copies of all its existing and future correspondence with the SHPO, in association with this RAI and other Cultural Resources (CR) RAIs as applicable, which would include any revised reports. He also stated that Detroit Edison has received no response from the SHPO on any items submitted to them by Detroit Edison to date. Apparently, the Michigan SHPO has been dissolved, and its staff dispersed to other State agencies. (Randy will seek information on the whereabouts of these individuals and provide that information to NRC. NRC and Argonne will look into this as well.) The main outstanding issues with the SHPO are the Fermi 2 National Register of Historic Places (NRHP) eligibility, Fermi 1 NRHP eligibility and mitigative measures, and comments on the Fermi 3 Phase 1 and Maritime Assessment reports. Randy further stated that the SHPO had previously indicated that NRC and the U.S. Army Corps of Engineers would have to be involved in any meetings and conference calls with Detroit Edison and the</p>

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CR4.1.3-7 ESRP 4.1.3 ESRP 5.1.3 10 CFR 51.71(d) 36 CFR 800	9/30/09 ML093350028	Complete	Provide copies of the Fermi 1 Phase I Cultural Resources report when available. Report should be in color, and include all figures, photos, and appendices.	Information included in this documentation is critical to ensuring a thorough and complete EIS review of project impacts. This information will be used to complete the NEPA analysis and to support compliance with the Section 106 process.	SHPO. [10/20/09] Response acceptable. [8/31/09] NRC revised the RAI Question Summary to read as follows: Provide copies of the Fermi 1 NRHP-eligibility documentation when available. Documentation should be in color, and include all figures, photos, and appendices.
CR4.1.3-8 ESRP 4.1.3 ESRP 5.1.3 10 CFR 51.71(d) 36 CFR 800	6/19/09 ML091940262	Not complete. Update needed prior to completion of the draft EIS.	Provide a copy of the Maritime Assessment report when available. Report should be in color, and include all figures, photos, and appendices.	Information included in this report describes the results of archaeological studies in Lake Erie for the Fermi 3 project. The report is critical to ensuring a thorough and complete EIS review of project impacts. This information will be used to complete the NEPA analysis and to support compliance with the Section 106 process.	[7/17/09] Updates of this report based on comments from the SHPO should be provided if and when available. To meet the environmental review schedule, this information must be provided with the December 30, 2009 RAI submittal or sooner.
CR4.1.3-9 ESRP 4.1.3 ESRP 5.1.3 10 CFR 51.71(d) 36 CFR 800 36 CFR 63	8/25/09 ML092400535	Complete	Provide copies of report(s) evaluating Fermi 1 and Fermi 2 for eligibility for listing in the NRHP. Report(s) should make recommendations regarding NRHP-eligibility of Fermi 1 and Fermi 2, assess the potential impacts of the Fermi 3 project on Fermi 1 and Fermi 2, and make recommendations for the potential Section 106 effects of the Fermi 3 project on Fermi 1 and Fermi 2. Reports should be in color, and include all figures, photos, and appendices.	Information included in this documentation is critical to ensuring a thorough and complete EIS review of project impacts. This information will be used to complete the NEPA analysis and to support compliance with the Section 106 process.	[10/26/009] Response acceptable.
CR4.1.3-10	2/15/10	Complete	Provide a document or documents	This information will be used to	[2/22/10] Response acceptable.

RAI Number ¹	Response Date/ ADAMS Accession No.	Status of Response	Question Summary (RAI)	Full Text (supporting information)	Comments
ESRP 4.1.3 and ESRP 5.1.3 10 CFR 51.71(d) 36 CFR Part 800 43 CFR Part 10	ML100541329		describing how ITC <i>Transmission</i> (ITC) would identify and protect cultural resources prior to transmission line right-of-way construction.	complete the NEPA cumulative impacts analysis and to support compliance with the Section 106 process. Cultural resource investigations are typically conducted prior to construction, to identify and avoid any National Register of Historic Places (NRHP)-eligible historic properties (e.g., archaeological sites). We need a description of the measures that would be used to (1) determine the presence of cultural resources before construction of the transmission line begins, and (2) determine whether any of these cultural resources have been listed, or determined eligible for listing in the NRHP. Although the NRC does not regulate transmission lines, the EIS will address these subjects in the cumulative impacts section.	
FC5.7-1 ESRP 5.7 10 CFR 51.51(b) Table S-3	9/30/09 ML093350028	Complete	Provide corrected information related to uranium fuel cycle impacts.	The Fermi 3 ER contains errors on pages 5-142 and 5-143. The 1.79 scaling factor should not have been used to adjust the following percentages: <ul style="list-style-type: none"> • Annual uranium fuel cycle discharges of water to air (i.e., consumptive water use) = 2% of model 1000-MW(e) light water reactor (LWR) with cooling tower. The value of 2% should not have been scaled to 3.6%. 	[11/30/09] Response acceptable. Based on discussions with Detroit Edison, revisions made to the ER in response to this RAI will not be affected by changes to DCD Rev. 6. [10/20/09] Response unacceptable. Detroit Edison provided changes to the ER, but indicated that further change may be needed in response to revisions to the ESBWR DCD and other revisions to the COL. The

RAI Number ¹	Response Date/ ADAMS Accession No.	Status of Response	Question Summary (RAI)	Full Text (supporting information)	Comments
				<ul style="list-style-type: none"> Annual uranium fuel cycle discharges of water associated with thermal effluents < 4% of model 1000-MW(e) LWR with once-through cooling. The value of 4% should not have been scaled to 7.2%. The maximum uranium fuel cycle consumptive water use (assuming that all plants supplying electrical energy to the uranium fuel cycle used cooling towers) would be about 6% of that of the model 1000-MW(e) LWR using cooling towers. The value of 6% should not have been scaled to 10.7%. 	NRC should be provided with updated analyses based on ESBWR DCD Rev. 6, which is currently available.
FC5.7-2 ESRP 5.7 10 CFR 51.51(b) Table S-3	9/30/09 ML093350028	Complete	Provide corrected information related to uranium fuel cycle Tc-99 releases.	There is a typographical error on page 5-145 of the Fermi 3 ER where it is stated that releases of Tc-99 for Fermi 3 are a total of 0.012 Ci per reactor year. The reference reactor is estimated to release 0.012 Ci per reactor year, in which case the releases associated with Fermi 3 would be 0.022 Ci.	[11/30/09] Response acceptable. Based on discussions with Detroit Edison, revisions made to the ER in response to this RAI will not be affected by changes to DCD Rev. 6. [10/20/09] Response unacceptable. Detroit Edison provided changes to the ER, but indicated that further change may be needed in response to revisions to the ESBWR DCD and other revisions to the COL. The NRC should be provided with updated analyses based on ESBWR DCD Rev. 6, which is currently available.

RAI Number ¹	Response Date/ ADAMS Accession No.	Status of Response	Question Summary (RAI)	Full Text (supporting information)	Comments
HH3.5-1 ESRP 3.5 10 CFR 51.71	2/16/10 ML100500278	Complete	Provide information on how the Class B and Class C low level radioactive waste (LLRW) generated during Fermi 3 operations would be managed.	<p>ER Section 3.5.2.3 mentions that "The SWMS [Solid Waste Management System] controls, collects, handles, processes, packages, and temporarily stores solid waste generated by the plant prior to shipping the waste offsite." Also, ESBWR DCD Revision 5 Section 11.4.1 states that "on-site storage space for a six-month volume of packaged waste is provided in the radwaste building."</p> <p>In light of the current lack of a licensed offsite disposal facility and the uncertainty regarding the availability of a new disposal facility during the license term, Detroit Edison should describe the plan for storing Class B and C LLRW onsite during the license term and the environmental consequences of such extended onsite storage. Alternatively, if Detroit Edison has a plan for managing the wastes that does not require an offsite disposal facility or extended onsite storage, it should provide details for that plan.</p>	[3/3/10] Response acceptable.
HH3.6.3-1 ESRP 3.6.3 40 CFR Part 80	8/25/09 ML092400535	Complete	Explain how the EPA Tier 4 emission standards and fuel sulfur content standards would be met for the stand-by diesel generators and diesel fire pumps.	Emissions for the stand-by diesel generators and diesel fire pumps, presented in ER Tables 3.6-3 and 3.6-5, exceed the EPA Tier 4 emission standards. In addition, the sulfur content of the fuel is presented in the ER as 3% by weight (ER Section 3.6.3.1). The EPA has mandated reductions in	[10/26/009] Response acceptable.

RAI Number ¹	Response Date/ ADAMS Accession No.	Status of Response	Question Summary (RAI)	Full Text (supporting information)	Comments
				sulfur content to 15 ppm effective June 2010 for non-road fuel. The 15 ppm sulfur content standard is also mentioned in 40 CFR 80.520. The requested information will be used in developing the human health assessment.	
HH4.5-1 ESRP 4.5 10 CFR 20.1301	10/30/09 ML093090165	Complete	Provide an explanation of the conclusion that the TLD location T-48 is the most representative location for construction worker dose estimates.	A written explanation for the conclusion that the TLD location T-48 is the most representative location to be used for construction worker dose estimates is needed to support the assessment.	[11/12/09] Response acceptable
HH4.5-2 ESRP 4.5 40 CFR 190 10 CFR 50 App. I	10/30/09 ML093090165	Complete	Provide the rationale for using 2001 data for thyroid and whole body dose calculations.	The staff assumes that 2001 data were used for thyroid and whole body dose calculations because data from this year resulted in the highest estimates of dose and therefore are conservative. A written statement to that effect is needed from Detroit Edison.	[11/12/09] Response acceptable
HH4.5-3 ESRP 4.5 10 CFR 20.1301 10 CFR 50 App. I	10/30/09 ML093090165	Complete	Provide information on: <ul style="list-style-type: none"> • specific construction activities and the number of workers used in construction worker dose calculations and • effects of doses from Fermi 1 on Fermi 3 construction worker doses. 	According to ESRP 4.5 Section I, data are needed for the number and principal locations of construction workers who will be exposed to the radiation sources and the total amount of time per year that they will spend at those locations. ER Section 4.5 does not have any information about specific construction activities and the number of workers used in construction worker dose calculations. Fermi 3 construction worker dose calculations include	[11/12/09] Response acceptable

RAI Number ¹	Response Date/ ADAMS Accession No.	Status of Response	Question Summary (RAI)	Full Text (supporting information)	Comments
				doses from Fermi 2, but do not include any component or discussion about doses from Fermi 1.	
HH4.5-4 ESRP 4.5 10 CFR 20.1301 40 CFR 190 10 CFR 50 App. I	10/30/09 ML093090165	Complete	Provide updated dose calculations for construction workers based on the new Fermi 3 site layout.	During the site audit, it was mentioned that the site layout for Fermi 3 would change. This change would result in a change to the estimated construction worker dose.	[11/12/09] Response acceptable
HH4.5-5 ESRP 4.5 10 CFR 20.1301 10 CFR 50 App. I	2/16/10 ML100500278	Complete	Provide construction worker doses for constructing an LLRW storage facility on-site.	Provide an estimate of the annual dose contribution to a LLRW storage facility construction worker (it is assumed that such a facility would be constructed sometime in the future when Fermi 3 is operating) from operations of Fermi 3 and other existing sources. According to ESRP 4.5 Section I, data are needed for the number and principal locations of construction workers who will be exposed to the radiation sources and the total amount of time per year that they will spend at those locations.	[3/3/10] Response acceptable.
HH5.3.4-1 ESRP 5.3.4 40 CFR 141.70	7/31/09 ML092290713	Not complete	Provide documentation related to the consultation with the Michigan Department of Community Health on infectious diseases associated with Lake Erie for the last 10 years.	Section 5.3.4.IV of the ESRP (Thermophilic Microorganisms) recommends inclusion of the results of consultations with the State Public Health Department, related to any regional outbreaks of waterborne diseases. Documentation related to the consultation with the Michigan Department of Community Health is needed for the staff to perform	[9/10/09] Response unacceptable. NRC requires that the information identified in the RAI response (or an acceptable summary of that information) be submitted for docketing (under oath or affirmation) because it will be cited as a reference(s) in the EIS.

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HH5.4.1-1 ESRP 5.4.1 10 CFR 20.1301 10 CFR 50 App. I 40 CFR 190	7/31/09 ML092290713	Complete	Provide justification for the transit time and dilution factors used in LADTAP code dose calculations for liquid discharges for different intake locations (commercial fish and invertebrate catch locations, drinking water intake locations). Also provide discussion on the impact of thermal variations on dilution factors.	this assessment. ESRP Section 5.4.1 identified the following information as needed to perform the dose calculation from liquid effluent releases: (1) the transit times and dilution factors at each appropriate receptor location and transit times to unrestricted area boundaries and diluted stream flows at these boundaries; and (2) the predicted dilution factors at specified locations. The calculation package provided by Detroit Edison at the site audit did not discuss any impact of thermal variations in the discharge on dilution factors.	[9/10/09] Response acceptable.
HH5.4.1-2 ESRP 5.4.1 10 CFR 20.1301	7/31/09 ML092290713	Complete	Provide invertebrate catch data (if any) from waters within 50 miles downstream of the facility's radwaste discharge.	According to ESRP Section 5.4.1, the following information is needed to perform dose calculations: "the present commercial fish and invertebrate catch (in kg/yr) from waters within 80 km (50 mi) downstream (or 80-km [50-mi] radius for lake or coastal sites) of the plant radwaste discharge...." Table 5.4-1 of the ER lists liquid pathway input parameters, but does not include invertebrate catch data.	[9/10/09] Response acceptable.

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HH5.4.1-3 ESRP 5.4.1 10 CFR 20.1301	9/30/09 ML093350028	Complete	Provide discussion on the unusual animals, plants, agricultural practices, game harvests, or food processing operations having the potential to contribute 10% or more to either individual or population doses in areas affected by liquid effluents, and food-processing operations involving large quantities of water.	According to ESRP 5.4.1, the following information is needed to perform site-specific analysis: "unusual animals, plants, agricultural practices, game harvests, or food processing operations having the potential for contributing 10% or more to either individual or population doses" Section 2.2 of the ER does not address any unusual animals, plants, agricultural practices, game harvests, or food processing operations.	[10/20/09] Response acceptable.
HH5.4.2-1 ESRP 5.4.2 10 CFR 50, App. I 10 CFR 20.1301 40 CFR 190	7/31/09 ML092290713	Complete	Provide input and output data (in electronic format) of the LADTAP and GASPAP computer codes.	ESRP 5.4.2, Section III, states "Assess the computer outputs to ensure that data were entered properly and that the outputs appear normal." The input and output files for LADTAP and GASPAP codes used in dose calculations will enable the staff to perform confirmatory analyses. Provide the basis for any factors other than defaults used as input to the computer codes.	[9/10/09] Response acceptable.
HH5.4.2-2 ESRP 5.4.2 10 CFR 50.34a	11/23/09 ML093380365	Complete	Provide a description of the methodology used to calculate doses for the general population, and the population average input values that were used. Provide the consumption/usage rates used in dose calculation for population.	In Section 5.4.1.2 on page 5-108 of the ER it states that the input parameters for the gaseous pathway are presented in Table 5.4-3. Table 5.4-3 does not appear to contain information on consumption/usage rates for the population. ER Table 5.4-2 lists annual consumption/usage rates for MEI for liquid and gaseous pathways, but is not discussed in	[12/04/09] Response acceptable

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				the text. Population average values are different from these and are not shown.	
HH5.4.3-1 ESRP 5.4.3 10 CFR 20.1201	11/23/09 ML093380365 1/29/10 ML100331451	Complete	Provide occupational dose calculations from normal operation of Fermi Unit 3 (The occupational dose should also include dose from existing Fermi 1 and Fermi 2 sources.)	Provide occupational doses from normal operations. ESRP Section 5.4.3.III(3) recommends inclusion of "an estimate of the collective occupational dose using the format of Table 5.4.3-2." Provide collective occupational doses, or justify their exclusion.	<p>[2/5/10] Response acceptable.</p> <p>[12/16/09] Reference to Table 5.4.3-2 in the ESRP is incorrect (should be to Table 5.4.3-3). Recommend Detroit Edison revise response by eliminating calculations provided in 11/23/09 response, and instead present only the ESBWR DCD estimate of total occupational dose (79 man-rem/yr) from Fermi 3 together with a statement that dose from Fermi 1, Fermi 2, and the planned Fermi 2 ISFSI would be very small incremental additions to total dose, and governed by standards in 10 CFR Part 20. The proposed revisions to the COLA in the RAI response are considered acceptable.</p> <p>[12/04/09] Response unacceptable. Detroit Edison estimated the annual collective dose from the operation of Fermi Unit 3 at about 79 man-rem using values in the ESBWR DCD rev 5. This dose estimate appears to be appropriate. Detroit Edison tried to demonstrate that the contribution from other existing sources is negligible. The conclusion that the contribution from other sources is small may be correct but the approach used to demonstrate this is not</p>

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					<p>acceptable.</p> <p>To calculate occupational dose, Detroit Edison used the estimated maximum (unshielded) dose to construction workers of 72.3 mrem/yr, multiplied this value by the time workers would spend inside radiological controlled areas (43,931 person-hr according to DCD rev 5), and then proportionately reduced the value to account for shielding. We believe the 43,931 person-hr is too low, as this would indicate that there would be only about 22 workers (assuming that one full time worker would be there for 2,000 hr/yr), and it only considers workers inside the radiological controlled areas rather than all monitored workers. This small number is not representative of the number of monitored worker at a typical reactor. Monitored workers include workers that do not spend all their time in radiological controlled areas. We suggest Detroit Edison use an estimate of the actual number of monitored workers at Fermi Unit 3 or use values from NUREG-0713 (e.g., 1,072 for BWRs in 2007).</p>
HH5.4.3-2 ESRP 5.4.3 10 CFR 20.1201	10/30/09 ML093090165	Complete	Provide revised calculations of construction worker doses that incorporate any new Independent Spent Fuel Storage Installation (ISFSI) that would be built on the Fermi site before or during the construction of Fermi 3.	If Detroit Edison plans to build and operate an ISFSI before or during the construction of Fermi 3, the dose rates from the ISFSI need to be addressed in the calculation of the construction worker doses for Fermi 3. See related RAI	[11/12/09] Response acceptable

RAI Number ¹	Response Date/ ADAMS Accession No.	Status of Response	Question Summary (RAI)	Full Text (supporting information)	Comments
				BC10.4.2-2.	
HH5.4.3-3 ESRP 5.4.3 10 CFR 20.1301 40 CFR 190 10 CFR 50, App. I	10/30/09 ML093090165	Complete	Provide updated calculations of dose from gaseous effluent releases for the MEI and population based on the new site layout.	During the site audit it was mentioned that the site layout for Fermi 3 would change. This change may result in changes to the MEI and population doses from gaseous effluent releases. These revised estimates are needed for the analysis that will be presented in the EIS.	[11/12/09] Response acceptable
HH5.4.3-4 ESRP 5.4.3 40 CFR 190.10 10 CFR 20.1301(e) 10 CFR 50 App. I	2/16/10 ML100500278	Complete	Provide radiation dose estimates for the maximally exposed individual from the onsite out-of-plant storage of solid waste.	According to ESRP Section 5.4.2, data are needed for the exposure rates associated with the proposed plant and onsite out-of-plant storage of solid LLRW to meet the acceptance criterion of 40 CFR 190 and 10 CFR 20.1301(e).	[3/3/10] Response acceptable.
HH5.4.3-5 ESRP 5.4.3 10 CFR 20.1201	2/16/10 ML100500278	Complete	Provide occupational dose calculations from onsite storage of Class B and Class C LLRW from Fermi 3.	Provide a revised estimate of total dose to a Fermi 3 occupational worker that includes contributions from an LLRW storage facility. Also, state what effect the onsite storage of LLRW will have on the overall estimated Fermi 3 occupational worker dose estimates. ESRP Sections 4.5 and 5.4.3.III(3) recommend inclusion of an estimate of the collective occupational dose.	[3/3/10] Response acceptable.
HH5.4.4-1 ESRP 5.4.4 40 CFR 190, 10 CFR 20.1301(d)	10/30/09 ML093090165 2/15/10 ML100541329	Not complete. Update needed prior to completion of the draft	Provide dose estimates for biota (including the bald eagle) inside the site boundary (0.25 mi from Fermi 3 emission sources).	Biota doses are presented in Table 5.4-9 (Dose to Biota from Liquid and Gaseous Effluents) but the assumptions used with the LADTAP computer code to estimate dose to biota from liquid effluents are not provided. It is	[2/22/10] Response acceptable, however, the revised values provided are out of date and must be updated. Revisions based on new source terms in DCD rev 6 are to be provided in revised COLA on March 25, 2010.

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		EIS.		<p>assumed that biota would be at the site boundary to calculate the dose from gaseous effluent but biota could be inside the site boundary and very near the proposed Fermi Unit 3.</p> <p>According to ESRP Section 5.4.4, "the biota to be considered in this evaluation should include those in the pathways identified in ESRP 5.4.1, those appearing on the endangered/threatened species lists, and others of significance." ER Section 2.4.1.2.1, page 2-330 states that two bald eagle nests were observed on the Fermi site in May 2008. Dose calculations for the bald eagle should be made because the species is protected by the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act.</p>	[11/12/09] Response unacceptable. The question was to provide the dose estimate to biota inside the site boundary. In their response Detroit Edison used a scaling factor for X/Q and D/Q from a distance of 0.25 mi vs. at the site boundary for calculating the dose from gaseous releases. Detroit Edison picked the direction at the site boundary that gave the maximum dose but the distance to the site boundary is different in different direction. When we look at X/Q or D/Q at 0.25 mi, the maximum is in a different direction than that picked by Detroit Edison.
HH5.11.7-1 ESRP 5.11 40 CFR 190	10/30/09 ML093090165	Complete	Provide an explicit statement regarding how contributions from the Davis-Besse nuclear plant and other nuclear facilities are incorporated in the assessment of cumulative radiological health impacts.	ER Section 5.11.7 states "The radiological environmental monitoring program measures radiation and radioactive materials from all sources, including Fermi." The Davis-Besse nuclear power station located 21 miles ESE of Toledo, Ohio, is about 30 miles from the proposed Fermi Unit 3. An explicit statement is needed regarding how the contributions from Davis-Besse and other nuclear facilities are incorporated in the radiological monitoring program and cumulative dose calculations.	[11/12/09] Response acceptable

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HH6.2-1 ESRP 6.2 Reg. Guides 4.1 and 4.15	6/19/09 ML091940262	Complete	Provide results from groundwater monitoring that has been done at the Fermi site in support of the Nuclear Energy Institute (NEI) Ground Water Protection Initiative. Describe any changes being planned to provide monitoring coverage under this initiative for Fermi 3.	Section 2.3.3.2 of the ER mentions groundwater monitoring done as part of the voluntary NEI initiative but Section 6.2 of the ER does not provide any results from groundwater monitoring.	[7/17/09] Response acceptable.
HY2.3.1-1 ESRP 2.3.1 10 CFR 51.70(b)	12/23/09 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 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.	[1/15/10] Response acceptable. [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 <u>all</u> 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

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					they will be cited as references in the EIS.
HY2.3.1-3 ESRP 2.3.1 10 CFR 51.70(b)	12/23/09 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, native lacustrine clay, tills, sand and gravel above the dolomite bedrock, and the dolomite bedrock.	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.	[1/15/10] Response acceptable.
HY2.3.1-4 ESRP 2.3.1 10 CFR 51.70(b)	7/31/09 ML092290713 12/23/09 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 were 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 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	[1/15/10] Response acceptable. [9/11/09] Argonne pointed out that Aqtesolv 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

RAI Number ¹	Response Date/ ADAMS Accession No.	Status of Response	Question Summary (RAI)	Full Text (supporting information)	Comments
				unclear whether or not the same formula is used to interpret data obtained from the rock fill which is under unconfined conditions.	re-run the analysis using the Springer-Gelhar method or perform calculations using that 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. [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.
HY2.3.1-6 ESRP 2.3.1 10 CFR 51.70(b)	7/31/09 ML092290713	Complete	Provide justification of the sampling frequency used in the slug tests for the rock fills.	The sampling frequency used in the slug tests for the rock fills may not be high enough to capture the fast, oscillatory test response of the water levels of the aquifer. Such a situation can cause problems in the curve-matching process of data interpretation for the EIS.	[9/10/09] Response acceptable.
HY2.3.1-7 ESRP 2.3.1 10 CFR 51.70(b)	12/23/09 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	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	[1/15/10] Response acceptable.

RAI Number ¹	Response Date/ ADAMS Accession No.	Status of Response	Question Summary (RAI)	Full Text (supporting information)	Comments
			Fermi 3.	<p>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.</p> <p>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.</p>	
HY2.3.1-8 ESRP 2.3.1 10 CFR 51.70(b)	9/30/09 ML093350028	Complete	Provide a new estimate for the flow characteristics of Swan Creek based on data from a gauged, nearby, and comparable watershed. Estimates of the maximum, average maximum, average, average minimum, and minimum flow of Swan Creek (on a monthly basis) should be provided.	Flow data are not available for Swan Creek. ER Section 2.3.1.1.3.1 states that the drainage-area ratio method was used to estimate the flow of the creek by using data from the Plum Brook gauge station (04163500), which has a much smaller watershed area and is located more than 20 miles north of Detroit. There are other gauged streams that are closer and more similar to Swan Creek that would provide a more appropriate basis for estimation.	[10/20/09] Response acceptable.
HY2.3.1-9 ESRP 2.3.1 10 CFR 51.70(b)	7/31/09 ML092290713	Complete	Identify the elevation of the proposed discharge structure and provide detailed bathymetry in the vicinity of the structure.	Elevation information and detailed bathymetry are needed to evaluate dredging impacts, thermal discharge impacts, and erosion/sedimentation.	[9/10/09] Response acceptable.

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HY2.3.1-10 ESRP 2.3.1 10 CFR 51.70(b)	8/25/09 ML092400535	Complete	Provide maps that show the full extent of the 100-year floodplains of Swan Creek and Lake Erie in the vicinity of the entire Fermi site.	The extent of the 100-year floodplain was not characterized as far as Swan Creek and along the shore of Lake Erie near the Fermi site in the ER.	[10/26/009] Response acceptable.
HY2.3.1-11 ESRP 2.3.1 10 CFR 51.70(b)	7/31/09 ML092290713	Complete	Provide historical aerial photographs, at approximately 5-year intervals, for the last 30 years.	A sequence of historical aerial photographs would enable an evaluation of shoreline erosion near the Fermi site. A baseline of shoreline erosion and deposition is needed to evaluate the potential impact of shoreline structures.	[9/10/09] Response acceptable.
HY2.3.1-12 ESRP 2.3.1 10 CFR 51.70(b)	7/31/09 ML092290713 12/23/09 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.	[1/15/10] Response acceptable. New packer and slug information was provided, based on the response to HY2.3.1-5. [9/10/09] Response acceptable.
HY2.3.1-13 ESRP 2.3.1 10 CFR 51.70(b)	7/31/09 ML092290713	Complete	Provide written statements that: <ul style="list-style-type: none"> • Frenchtown Township supplies potable and demineralized water demands of Fermi 2 and will also be adequate to meet those demands of Fermi 3. • Demineralized water constitutes most of the water demand from the Frenchtown Township water supply system during operations. • Demineralized water will be supplied to one unit at a time. • The existing water supply pipeline is adequate to supply the needs for Fermi 2 and Fermi 3. 	At the site audit, Detroit Edison indicated that no upgrade of the water lines from the Frenchtown Township water system to the Fermi site is planned for the construction and operation of Fermi 3, but there could be upgrades to piping in the future for reasons that are unrelated to Fermi 3 construction and operations. Confirmation of these issues is needed to ensure the impact assessment is accurate.	[9/10/09] Response acceptable.

RAI Number ¹	Response Date/ ADAMS Accession No.	Status of Response	Question Summary (RAI)	Full Text (supporting information)	Comments
			<ul style="list-style-type: none"> • The existing sewer line is adequate for the needs of both Fermi 2 and Fermi 3. • The existing onsite fire protection wells are adequate for the needs of both Fermi 2 and Fermi 3. 		
HY2.3.1-14 ESRP 2.3.1 10 CFR 51.70(b)	6/19/09 ML091940262	Not complete	Provide copies of the following: <ul style="list-style-type: none"> • DTE Energy Nuclear Generation Memorandum, January 5, 2005; • EnviroSolutions Remedial Action Plan Closure Report (Fuel Tank Release), Dec. 2007; • NPMA-05-0001; • ACRES International Comprehensive Report #P13827.00, dated July 2001; • Facsimile to Mick Blunden from Mike Parrish, dated 12/19/2000, containing dredging map; • MDEQ Permit No. 04-58-009-P, dated (issued) July 21, 2004; • January 2001 Dredging Story (handwritten note); • MDEQ NPDES Permit No. MI0037208; • Storm Water Pollution Prevention Plan for Fermi 2 Plant, Rev. 7; 	These documents are cited in the ER, but are not publicly available. They need to be made available to the NRC staff so they can be cited as references in the EIS.	[7/17/09] Response unacceptable. Only 4 of the 13 requested documents were provided to NRC for docketing. The remaining 9 have been provided in the reading rooms only. NRC must be provided with copies of these 9 documents for docketing because they will be cited as references in the EIS.

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			<ul style="list-style-type: none"> • Facsimile to Mike Parrish from Mick Blunden, dated 01/03/2001; • USACE Detroit District approval letter for dredging by hydraulic means, dated Nov. 8, 2000; • USACE Detroit District Permit No. 88-001-040-8, dated May 26, 2004; and • Detroit Edison Final Siting Study Report. 		
HY2.3.1-15 ESRP 2.3.1 10 CFR 51.70(b)	9/30/09 ML093350028 12/23/09 ML093650122	Complete	Provide information on all NPDES discharge and temperature violations for Fermi 2. Provide the history of any radwaste/waste water discharges (to any location) from Fermi 2.	An understanding of the previous operational history for Fermi 2 is needed for the impact analysis to be included in the EIS.	[1/15/10] Response acceptable. [10/20/09] Response 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

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					additional letters not included in the response.
HY2.3.1-16 ESRP 2.3.1 10 CFR 51.71(d)	1/29/10 ML100331451	Complete	Provide a report or reports detailing the laboratory results of the distribution coefficient measurements of on-site samples from the bedrock. Include a description of laboratory methods used to determine distribution coefficient (K_d) values; sample locations, depths, rock types, and quantities; and quality control results. Also, describe the calculation method for the values presented in Table 2.4-234 of Detroit Edison's September 1, 2009 safety-related RAI response letter.	<p>Contaminant transport in the ER is limited to a discussion of advective transport (Section 2.3.1.2.3.2). The staff intends to include a more thorough discussion in the EIS of the environmental impacts of a potential release of radioactive materials to groundwater. Detroit Edison presented a discussion of a potential release of radioactive material to groundwater in Section 2.4.13 of the FSAR. That discussion will form the basis of the staff's discussion of contaminant transport in the EIS. Incorporating site-specific distribution coefficient (K_d) values would allow estimation of the transport rate of radioactive constituents to receptors.</p> <p>The staff filed safety-related RAIs corresponding to Section 2.4.13 of the Final Safety Analysis Report (FSAR) on January 14, 2009. Detroit Edison's September 1, 2009 RAI letter response to these RAIs, which included transport analysis, methodology, and references, provided a conservative basis for calculating concentrations at receptors (nearest well and Lake Erie). The response included K_d values from onsite bedrock samples. Review of the K_d investigation report is needed to verify the basis for the</p>	[2/5/10] Response acceptable.

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				<p>transport analysis.</p> <p>To confirm the results of the transport analysis, provide a report or reports detailing the laboratory results of the K_d measurements of onsite samples from the bedrock. Include a description of laboratory methods used to determine K_d values; sample locations, depths, rock types, and quantities; and quality control results. Also, describe the calculation method for the values presented in Table 2.4-234 of the September 1, 2009 RAI response letter.</p>	
<p>HY4.2.1-1 ESRP 4.2.1 10 CFR 51.70(b)</p>	<p>12/23/09 ML093650122</p>	<p>Complete</p>	<p>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.</p>	<p>The MODFLOW model presented by Detroit Edison requires model calibration by using the local water level data measured at the Fermi site.</p>	<p>[1/15/10] Response acceptable.</p>
<p>HY4.2.1-2 ESRP 4.2.1 10 CFR 51.70(b)</p>	<p>12/23/09 ML093650122</p>	<p>Complete</p>	<p>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.</p> <p>Characterize all possible hydraulic connections among the bedrock aquifer under the Fermi site, the surface waters (including wetlands, lagoons, canals, ponds, and Lake Erie) in the vicinity of the site, and the existing and proposed gravel fills at the Fermi site.</p>	<p>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.</p> <p>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</p>	<p>[1/15/10] Response acceptable.</p>

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				<p>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.</p>	
<p>HY4.2.1-3 ESRP 4.2.1 10 CFR 51.70(b)</p>	<p>11/23/09 ML093380365</p>	<p>Complete</p>	<p>Model the dewatering effects of Fermi 3 pre-construction and construction activities on groundwater heads of different materials. Provide the input and output files (in electronic format), calibrations, and sensitivity analysis for the model.</p>	<p>MODFLOW was used to estimate drawdown across the Fermi site during dewatering operations. During the site audit, the NRC staff concluded that the spatial extent of the clay dikes and rock fills at the Fermi site was not fully characterized, but was incorporated into the MODFLOW model. The existing model treats the artificial rock fills, the natural lacustrine clay, and glacial tills as one hydrogeologic unit, though they have very different hydraulic properties according to slug and packer test data. In addition, the parameters used in the model were based on a regional groundwater study and therefore may not reflect the hydrologic characteristics of the local materials near the Fermi site.</p> <p>The model should use locally</p>	<p>[12/04/09] Response acceptable.</p>

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				measured hydraulic properties of the geologic materials as input parameters and consider the presence and effect of the rock fills and clay dikes under the Fermi site, the extent of the Fermi 3 excavated area, recharge rates, and boundary conditions.	
HY4.2.1-4 ESRP 4.2.1 10 CFR 51.70(b)	12/23/09 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 10 CFR 51.45 and 10 CFR 51.70(b)	12/23/09 ML093650122	Complete	Clarify whether the MODFLOW Well Package used in the 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.	In the MODFLOW calculation package provided by Detroit 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.	[1/15/10] Response acceptable.

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<p>HY4.2.1-6 ESRP 4.2.1 33 CFR 330 10 CFR 51.45</p>	<p>12/23/09 ML093650122</p>	<p>Complete</p>	<p>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.</p> <p>Provide information on how the conductance values of the drainage cells within the excavation areas are derived.</p> <p>Provide information on the locations and elevations of the drains in the drainage cells within the excavation areas used in the MODFLOW model.</p>	<p>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.</p>	<p>[1/15/10] Response acceptable.</p>
<p>HY4.2.1-7 ESRP 4.2.1 33 CFR 330 10 CFR 51.45</p>	<p>9/30/09 ML093350028</p>	<p>Complete</p>	<p>Provide the methods to be used to dredge Lake Erie sediments for the construction of water intake, barge slip, and water discharge structures for Fermi 3.</p> <p>Provide information on maps to show the extent of dredging for the above proposed structures and for areas outside of the barge slip.</p> <p>What is the plan of disposing the sediment from dredging in the future at the Fermi site as the existing dredge retention basin reaches its capacity?</p>	<p>There is no information in the ER regarding the methods used for dredging and the extent of the dredging. This information is needed for the impact analysis to be presented in the EIS.</p> <p>The existing retention pond for dredging material disposal is reaching its maximum capacity, according to a study conducted by Detroit Edison. Dredging is anticipated for construction of the Fermi 3 water intake structure, barge slip, and discharge pipe, in addition to the normal operation of</p>	<p>[10/20/09] Response acceptable.</p>

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				Fermi 2. The disposal of dredging material, treatment of the dredge material to accelerate sediment settlement from the water, and the handling of returned water from the dredge retention pond to Lake Erie will be considered in the EIS.	
HY4.2.1-8 ESRP 4.2.1 10 CFR 51.45 10 CFR 51.70(b)	9/30/09 ML093350028	Complete	Provide information regarding sediment plumes that would result from proposed dredging operations. Information should include: <ul style="list-style-type: none"> • Sampling associated with the Fermi dredging permit; • Sediment particle size of the dredged material; • Plan for any turbidity monitoring before, during, and after dredging; • Dredge basin history summary report, dated 7/9/2004; and • If available, input and output files (in electronic form), calibration, and sensitivity analyses. 	Information on sediment plumes caused by proposed dredging operations was not presented in the ER. The information will be used to evaluate the impacts of dredging on the Western Basin of Lake Erie.	[10/20/09] Response acceptable.
HY4.2.1-9 ESRP 4.2.1 10 CFR 51.50	6/19/09 ML091940262 11/23/09 ML093380365	Complete	Provide descriptions of the best management practices (BMPs) to be used for the disposal of the spoil from Fermi 3.	Detroit Edison has indicated that BMPs will be developed after the layout of Fermi 3 is finalized. These will provide an important basis for the assessment of construction impacts in the EIS.	[12/04/09] Response acceptable. [8/31/09] NRC clarified that it specifically needs information on the planned locations of storage/disposal areas, specific dredge/spoil material to be placed at each location, and specific BMPs that Detroit Edison will employ at each location. [7/17/09] Response unacceptable.

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					Detroit Edison provided a copy of a Michigan Department of Environmental Quality BMP for spoil piles and stated that it would comply with this BMP. NRC believes this BMP is too general, and the staff needs to be provided with more information on the specific BMPs that Detroit Edison will employ for specific dredge/spoil materials at specific storage/disposal areas. We also need to know when this information will be provided for docketing.
HY4.2.1-10 ESRP 4.2.1 10 CFR 51.70(b)	10/30/09 ML093090165	Complete	Provide information on the design of the Condensate Storage Tank (CST) basin for Fermi 3.	The CST was designed to be enclosed in a basin (Section 2.4.13 of the Final Safety Analysis Report) to contain potential accidental releases of radioactive materials from the tank. A description of the CST basin and its location were not provided in the ER but is needed to understand the potential impacts of operations.	[11/12/09] Response acceptable
HY4.2.1-11 ESRP 4.2.1 10 CFR 51.50	11/23/09 ML093380365	Complete	Provide specific information on the groundwater monitoring programs (including the number and location of wells, well depth, aquifers sampled, chemical parameters monitored, and frequency of monitoring) during pre-construction and construction phases of Fermi 3.	Detroit Edison has indicated that specific groundwater monitoring programs will be developed after the layout of Fermi 3 is finalized. The information will be used to evaluate the impacts of construction on groundwater.	[12/04/09] Response acceptable.
HY4.6-1 ESRP 4.6	7/31/09 ML092290713	Not complete. Update	Provide the Soil Erosion and Sedimentation Control (SESC) plan for the construction of Fermi	Detroit Edison has indicated that a SESC plan will be developed after the layout of Fermi 3 is finalized.	[1/15/10] Response acceptable. A description was provided of SESC contents, typical control measures

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10 CFR 51.50	12/23/09 ML093650122	needed prior to completion of the draft EIS.	3.	This plan will provide an important basis for the assessment of construction impacts in the EIS.	<p>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.</p> <p>[9/10/09] Response unacceptable. 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.</p> <p>[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</p>

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					summary of the SESC procedures for Fermi 3. Detroit Edison agreed to provide the requested information.
HY4.6-2 ESRP 4.6 10 CFR 51.50	7/31/09 ML092290713 12/23/09 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.	[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. [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. [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.
HY4.6-3 ESRP 4.6 10 CFR 51.50	7/31/09 ML092290713	Complete	Provide a plan and schedule for addressing the NPDES permit application.	Detroit Edison has indicated that the NPDES permit application will be developed sometime in the future and potentially after the combined license is issued. The	[9/10/09] Response acceptable.

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				permitting strategy will be discussed in the EIS.	
HY5.2-1 ESRP 5.2 10 CFR 51.50	11/23/09 ML093380365	Complete	Provide specific information on groundwater monitoring (including the number and location of wells, well depth, aquifers sampled, chemical parameters monitored, and frequency of monitoring) during Fermi 3 operations.	Detroit Edison has indicated that specific groundwater monitoring programs for the operational phase will be developed after the layout of Fermi 3 is finalized. These monitoring programs will provide an important basis for the assessment of operational impacts.	[12/04/09] Response acceptable.
HY5.3.2-1 ESRP 5.3.2 10 CFR 51.45	7/31/09 ML092290713	Complete	Resolve the inconsistency between ER Sections 5.3.2.1.1 and 3.4.1.1 regarding the cooling water basin for Fermi 3. Provide information on how the Fermi 3 normal power heat sink (NPHS) basin accommodates the water need during acute low-water events.	In Section 5.3.2.1.1.2 of the ER (p. 5-30), it is stated that "It is important to note that seiche-driven water level changes affect the operation of Fermi 2 and are anticipated in the operating procedures of the cooling water system. During acute low-water events associated with persistent west winds, the Fermi 2 cooling water intake may not reliably supply sufficient water for cooling tower makeup. Because this condition was considered in the circulating water system design, <u>the cooling tower basin was constructed to hold more water than would be typically expected.</u> During low-water events, intake and discharge of cooling water is stopped temporarily and the cooling tower is run at higher cycles of concentration for up to several hours using water stored in the basin. Such operation has previously occurred without incident. <u>A similar strategy of design and operation is planned</u>	[9/10/09] Response acceptable.

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				<p>for the Fermi 3 cooling system.”</p> <p>In ER Section 3.4.1.1 (p. 3-24), it is stated that “Water from the NPHS basin (Figure 3.4-3, p. 3-33) is pumped through the main condenser and then back to the cooling tower where heat, transferred to the cooling water in the main condenser, is dissipated to the environment (the atmosphere) by evaporation.”</p> <p>During the site audit, Detroit Edison indicated that a cooling water basin (NPHS basin?) is located under the cooling tower of Fermi 3 and no separate water basin would be constructed. However, ER Section 5.3.2.1.1.2 (p. 5-30) states that cooling design and operation planned for the Fermi 3 cooling system would be similar to that of Fermi 2, which has a separate cooling water basin to accommodate low-water events, such as seiches.</p>	
HY5.3.2-2 ESRP 5.3.2 10 CFR 51.45	9/30/09 ML093350028	Complete	Provide the input and output files (in electronic form) for the CORMIX thermal plume analysis.	The input and output files are needed to allow performance of confirmatory analyses for the EIS.	[10/20/09] Response acceptable.
HY5.3.2-3 ESRP 5.3.2 10 CFR 51.45	7/31/09 ML092290713	Complete	Clarify whether the values in ER Table 2.3-3 represent surface water temperatures for all of Lake Erie or just the Western Basin of Lake Erie.	There is inconsistency in the ER regarding what these values represent. The text on p. 5-32 suggests the data are from the Western Basin but Table 2.3-3 does not specifically state this. If the data represent all of Lake Erie, justification must be provided for	[9/10/09] Response acceptable.

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				why water temperature data from the western basin of Lake Erie or observed station data from the western basin (such as Station T02) were not used in the CORMIX model to calculate the extent of the thermal plume.	
HY5.3.2-4 ESRP 5.3.2 10 CFR 51.45	7/31/09 ML092290713	Complete	Explain why a single-port CORMIX 1 model was used to model the thermal plume for evaluating the effects of rare westward currents in Model Set 3, while a multiple port CORMIX 2 model was used for Model Sets 1 and 2.	As stated in ER Section 5.3.2.1.1.1, the proposed diffuser would be a multiport diffuser. As indicated in the file SOF 5.2-513, CORMIX 1 (for a single port) was used for Model Set 3 to evaluate the effects of westward currents. However, the files SOF 5.3-531 and SOF 5.2-515 CORMIX Monthly Runs.pdf indicate that CORMIX 2 (for multiple ports) was used for Model Sets 1 and 2.	[9/10/09] Response acceptable.
HY5.3.2-5 ESRP 5.3.2 10 CFR 51.45	7/31/09 ML092290713	Complete	<p>Explain why the parameter Sigma angle was set as 263 degrees in the CORMIX model runs for Model Set 3.</p> <p>Explain why the parameter of Nearest Bank in the CORMIX model runs for Model Set 3 was set to “right” and the parameter was set differently to “left” in other model runs.</p>	<p>To model the effects of westward currents in Model Set 3, the current was assumed to be west-northwest (ER Section 5.3.2.1.1.2), and the parameter Sigma angle in CORMIX was set at 263 degree (file SOF 5.2-513). In Model Set 1 and 2, the Sigma angle was set as 270 degree when the current was assumed to flow to the north for the months of October to February. The current direction difference would be more than 90 degrees. However, the angle difference was only 7 degrees.</p> <p>Differences in the Nearest Bank parameter could produce different modeling results and should be</p>	[9/10/09] Response acceptable.

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HY5.11-1 ESRP 5.11 10 CFR 51.45 10 CFR 51.50	10/30/09 ML093090165	Complete	Provide information on cumulative water withdrawals and chemical and thermal discharges to the Western Lake Erie Basin from other users.	corrected. The Western Lake Erie Basin is hydrologically connected to the rest of Lake Erie, but the basin is different from other portions of the lake in that it is relatively shallow and a large population depends on the basin. To support the analysis of cumulative environmental impacts on the basin, please supply specific information on water withdrawals from the Western Basin. Also supply information on chemical and thermal discharges from other facilities, even if plume interactions are not foreseen.	[11/12/09] Response acceptable
LU1.2-1a ESRP 1.2 10 CFR 51.45(d) 10 CFR 51.71	6/19/09 ML091940262	Complete	Provide a copy of the 2003 agreement between the USFWS and Detroit Edison regarding the Detroit River International Wildlife Refuge (DRIWR).	The NRC staff needs to properly document in the EIS the consultations Detroit Edison has pursued with Federal, State, regional, and local agencies including 1) current status of agreements, 2) environmental concerns of the authorizing agency that are to be addressed in the EIS, and 3) potential problems that may affect the granting of any other Federal, State, regional, and local agency authorizations.	[7/17/09] Response acceptable.
LU1.2-1b ESRP 1.2 10 CFR 51.45 10 CFR 51.71	10/30/09 ML093090165	Complete	Provide a discussion of the effects of the revised Fermi 3 site layout on the 100-year and 500-year floodplains at the site.	In the EIS, the NRC staff needs to cite Detroit Edison's characterization of the location of the Fermi 3 site. The land use impact analysis will include an evaluation of effects on floodplains.	[11/12/09] Response acceptable

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LU1.2-1c ESRP 1.2 10 CFR 51.45 10 CFR 51.71 10 CFR 100.11	7/31/09 ML092290713	Complete	Provide confirmation that the Exclusion Area for Fermi 3 would be within the existing Exclusion Area for Fermi 2.	In the EIS, the NRC staff needs to cite Detroit Edison's characterization of the location of the Fermi 3 site. The delineation of the Exclusion Areas in the EIS must be accurate.	[9/10/09] Response acceptable.
LU4.1.1-1 ESRP 4.1.1 10 CFR 51.45 10 CFR 51.71	11/23/09 ML093380365	Complete	Provide a statement to confirm that no borrow materials would be obtained onsite. Identify where spoils materials would be disposed of.	At the site audit, Detroit Edison indicated that no borrow materials would be obtained onsite. It is unclear where spoils material would be disposed of. This information is needed for the analysis of land use impacts to be presented in the EIS.	[12/04/09] Response acceptable
LU4.4.2-1 ESRP 4.4.2 ESRP 10.4.1 10 CFR 51.45 10 CFR 51.71	10/30/09 ML093090165	Complete	Provide information on any past and present management of commercial timber onsite, and any plans to sell timber as part of the development of the Fermi 3 site, specifically: <ul style="list-style-type: none"> • value of marketed timber that has been, or is expected to be, harvested for commercial use and • duration of timber harvesting. 	In the EIS, the NRC staff needs to cite Detroit Edison's characterization of these activities as they may affect land use and land requirements. A description of past and present activities will be used in developing the affected environment description in the EIS.	[11/12/09] Response acceptable

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NO3.7-1 ESRP 3.7 10 CFR 51.71(d)	9/30/09 ML093350028 12/23/09 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.	[1/15/10] Response acceptable. [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.
NO4.4.1-1 ESRP 4.4.1 10 CFR 51.71(d)	9/30/09 ML093350028	Complete	Provide the noise modeling analysis for construction on a typical and "worst" day (day with the highest levels of construction emissions).	Noise modeling for construction that assumes a reasonable combination of the number of heavy equipment operating and load factor for the average and worst day is needed for the impact analysis to be presented in the EIS.	[10/20/09] Response acceptable.
NO4.4.1-2 ESRP 4.4.1 10 CFR 51.71(d)	10/30/09 ML093090165	Complete	Provide the noise and vibration modeling analysis for blasting-activities on an average and "worst" day.	Blasting impacts during construction would be the source of important noise and vibration impacts on nearby structures and neighboring communities. The noise and vibration modeling, along with blasting-related	[11/12/09] Response acceptable

RAI Number ¹	Response Date/ ADAMS Accession No.	Status of Response	Question Summary (RAI)	Full Text (supporting information)	Comments
				information (e.g., general description of blasting activities, TNT equivalent weight per charge, frequency, and noise and vibration control measures) is needed for the impact analysis to be presented in the EIS.	
NO5.8.1-1 ESRP 5.8.1 10 CFR 51.71(d)	9/30/09 ML093350028 12/23/09 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.	[1/15/10] Response acceptable. [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.
SE2.5.1-1 ESRP 2.5.1 10 CFR 51.45 10 CFR 51.70	7/31/09 ML092290713	Complete	Provide updated population estimates for ER Section 2.5.1.	As discussed at the site audit, population data were based on the 2000 census data throughout ER Section 2.5.1 because only 2000 census data are available in the LandView 6 software. However, the LandView 6 software is used to display population data graphically to assess radiological impacts and accidents impacts, but is not used for the socioeconomic impact analysis. The socioeconomic analysis is conducted by jurisdictions (municipalities, counties), and more recent population estimates should be provided for the demographics	[9/10/09] Response acceptable.

RAI Number ¹	Response Date/ ADAMS Accession No.	Status of Response	Question Summary (RAI)	Full Text (supporting information)	Comments
SE2.5.2-1 ESRP 2.5.2 10 CFR 51.45 10 CFR 51.70	11/23/09 ML093380365 1/29/10 ML100331451	Complete	Provide information on the size and nature of the heavy construction industry and construction labor force within the region (size of labor force, unemployment rates, wages) specific to the job categories that would be used to support Fermi 3 construction (i.e., boilermakers, pipefitters, electricians, ironworkers, insulators, etc.).	More detailed information is needed to confirm assumptions on the availability of construction workers within the local area to further characterize impacts by jurisdiction on population, housing, public services, education, and public utilities.	[2/5/10] Response acceptable. [1/8/10] Detroit Edison agreed to revise the ER to include a description of how the information in Table 2 was compiled. [12/16/09] Response unacceptable. Please provide source reference for Table 2 of response.
SE2.5.2-2 ESRP 2.5.2 10 CFR 51.45 10 CFR 51.70	11/23/09 ML093380365 1/29/10 ML100331451	Complete	Provide information on the job categories that would be recruited for the operations workforce, and the size of the labor force, unemployment rates, and wages for these laborers within the region.	More detailed information is needed to confirm assumptions on the availability of operations workers within the local area to further characterize impacts by jurisdiction on population, housing, public services, education, and public utilities.	[2/5/10] Response acceptable. [1/8/10] Detroit Edison agreed to revise the ER to include a description of how the information in Table 2 was compiled. [12/16/09] Response unacceptable. Please provide source reference for Table 2 of response.
SE2.5.2-3 ESRP 2.5.2 10 CFR 51.45 10 CFR 51.70	7/31/09 ML092290713 12/23/09 ML093650122	Complete	Provide updated housing estimates and projections for ER Section 2.5.2.	The 2000 census housing data used to characterize number and 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	[1/15/10] Response acceptable. [9/11/09] B&V/Detroit Edison will provide an inventory of hotels and motels in the Detroit/Toledo area. [9/10/09] Response unacceptable. Requested data on other temporary housing (e.g., hotels/motels) was not provided.

RAI Number ¹	Response Date/ ADAMS Accession No.	Status of Response	Question Summary (RAI)	Full Text (supporting information)	Comments
				to assessing potential impacts of the temporary construction workforce.	
SE2.5.4-1 ESRP 2.5.4 ESRP 4.4.3 ESRP 5.8.3 10 CFR 51.45 10 CFR 51.70 Executive Order 12898 59 CFR 7629	6/19/09 ML091940262	Not complete	Provide copies of all correspondence and documentation of personal communications used to support the analysis in the ER sections on environmental justice.	The staff needs to be able to identify the authority that was cited in ER Sections 2.5.4.2.4, 4.4.3.3, and 5.8.3 and the information contained within to support statements related to low-income and minority populations, subsistence uses, and impact evaluation on those populations.	[7/17/09] Response unacceptable. All of the requested items of correspondence will need to be provided for docketing because they will be cited as references in the EIS. It was discussed that Detroit Edison may need to submit these items to NRC with a request that portions be considered proprietary or confidential (e.g., personal identifiable information, or PII), and that NRC's Office of General Counsel (OGC) would consider these requests and possibly allow redaction of certain information. However, we would need to discuss this matter further with OGC before Detroit Edison takes any action to submit the documentation. (NOTE: This also applies to RAIs SE4.4.2-1, SE4.4.2-2, SESE4.4.2-3, SE4.4.2-4, and SE5.11-2.)
SE4.4.2-1 ESRP 4.4.2 ESRP 5.8.2 10 CFR 51.45 10 CFR 51.70	6/19/09 ML091940262	Not complete	Provide copies of all correspondence and documentation of personal communications used to support the analysis in the ER sections on education.	The staff needs to be able to identify the authority that was cited in ER Sections 4.4.2.4.1 and 5.8.2.4.1 and the information contained within to support statements related to impact evaluations on education.	[7/17/09] Response unacceptable. All of the requested items of correspondence will need to be provided for docketing because they will be cited as references in the EIS.
SE4.4.2-2 ESRP 4.4.2 ESRP 5.8.2	6/19/09 ML091940262	Not complete	Provide copies of all correspondence and documentation of personal communications used to support analysis in the ER sections on	The staff needs to be able to identify the information obtained to support statements related to impact evaluation on public safety and social services, where such	[7/17/09] Response unacceptable. All of the requested items of correspondence will need to be provided for docketing because they will be cited as references in

RAI Number ¹	Response Date/ ADAMS Accession No.	Status of Response	Question Summary (RAI)	Full Text (supporting information)	Comments
10 CFR 51.45 10 CFR 51.70			public safety and social services.	authoritative references were used in the evaluation. Although no mention of contacts was made in ER Sections 4.4.2.4.3 or 5.8.2.4.3, Detroit Edison indicated during the site audit that some contacts had been made.	the EIS.
SE4.4.2-3 ESRP 4.4.2 ESRP 5.8.2 10 CFR 51.45 10 CFR 51.70	6/19/09 ML091940262	Not complete	Provide copies of all correspondence and documentation of personal communications used to support analysis in the ER sections on public utilities.	The staff needs to be able to identify the information obtained to support statements related to impact evaluation on public utilities. Although no mention of contacts was made in ER Sections 4.4.2.4.4 or 5.8.2.4.4, Detroit Edison indicated during the site audit that some contacts had been made.	[7/17/09] Response unacceptable. All of the requested items of correspondence will need to be provided for docketing because they will be cited as references in the EIS.
SE4.4.2-4 ESRP 4.4.2 ESRP 5.8.2 10 CFR 51.45 10 CFR 51.70	6/19/09 ML091940262	Not complete	Provide copies of all correspondence and documentation of personal communications used to support analysis in the ER sections on tourism and recreation.	The staff needs to be able to identify the information obtained to support statements related to impact evaluation on public utilities. Although no mention of contacts was made in ER Sections 4.4.2.4.5 or 5.8.2.5, Detroit Edison indicated during the site audit that some contacts had been made.	[7/17/09] Response unacceptable. All of the requested items of correspondence will need to be provided for docketing because they will be cited as references in the EIS.
SE4.4.2-5 ESRP 4.4.2 ESRP 5.8.2 10 CFR 51.45 10 CFR 51.70	7/31/09 ML092290713	Complete	Provide existing Fermi 2 workforce data by zip code.	The data are needed to confirm assumptions used to estimate impacts presented in ER Sections 4.4.2.1 and 5.8.2.1, and to further characterize impacts by jurisdiction on population, housing, public services, education, and public utilities.	[9/10/09] Response acceptable.
SE4.4.2-6 ESRP 4.4.2	10/30/09 ML093090165	Complete	Provide revised and updated construction cost estimates,	The data are needed to better characterize the economic	[11/12/09] Response acceptable.

RAI Number ¹	Response Date/ ADAMS Accession No.	Status of Response	Question Summary (RAI)	Full Text (supporting information)	Comments
ESRP 5.8.2 10 CFR 51.45 10 CFR 51.70			reporting pre-construction and construction activities and expenditures separately, and reporting planned expenditures for supplies and materials within the local area versus outside the area.	impacts of the proposed project presented in ER Sections 4.4.2, 4.4.2.4.6, and 5.8.2.7 using the most currently available construction cost estimates.	
SE4.4.2-7 ESRP 4.4.2 ESRP 5.8.2 10 CFR 51.45 10 CFR 51.70	11/23/09 ML093380365 1/29/10 ML100331451	Complete	Provide a list of job categories and wages/salaries of the construction and operations workforce.	The data are needed to confirm assumptions used to estimate local and non-local workforce; further characterize impacts on population, housing, public services, education, and public utilities based on demographic assumptions; and better characterize the economic impacts of the proposed project (ER Sections 4.4.2, 4.4.2.1, 4.4.2.4.6, 5.8.2.1, and 5.8.2.7).	[2/5/10] Response acceptable. [1/8/10] Detroit Edison agreed to revise the ER to include a description of how the information in Table 2 was compiled. [12/16/09] Response unacceptable. Please provide source reference for Table 2 of response.
SE4.4.2-8 ESRP 4.4.2 ESRP 5.8.2 10 CFR 51.45 10 CFR 51.70	12/23/09 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.
SE4.4.2-9 ESRP 4.4.2 10 CFR 51.45 10 CFR 51.70	7/31/09 ML092290713	Complete	Provide a written statement that minimal to no construction materials would be transported to the project site by water.	A statement was made during the site audit that minimal to no construction materials would be transported to the project site by water. A citable statement is	[9/11/09] Response acceptable. Detroit Edison indicated that the information provided in the response is docketed and is the correct information. Comments at

RAI Number ¹	Response Date/ ADAMS Accession No.	Status of Response	Question Summary (RAI)	Full Text (supporting information)	Comments
				needed to support the analysis of impacts related to the transportation of construction materials.	<p>the site audit should not be considered official. Further information on transportation by water would be included in Detroit Edison's response to the USACE RAIs and in the traffic study.</p> <p>[9/10/09] Response unacceptable. The information in this response differs from that provided at the site audit (reflected in previous column). As applicable, Detroit Edison needs to further explain its response or indicate that the statement provided at the audit was made prematurely and that a decision has not yet been made regarding the mode of transportation to be used to bring construction materials to the site.</p>
SE4.4.2-10 ESRP 4.4.2 ESRP 5.8.2 10 CFR 51.45 10 CFR 51.70	11/23/09 ML093380365	Complete	Provide a copy of Level of Service (LOS) analysis/traffic study.	This information is needed to evaluate 1) carrying capacity and condition of roads and highways during construction, operation, and outage periods; 2) relevant transportation and traffic information (i.e., likely commuter [including construction, operation, and periods of outages] and emergency evacuation routes) in Michigan and Ohio; 3) availability and types of public transportation; 4) proposed road modifications that may affect traffic flow to and from the Fermi site; and 5) hourly present and future rates of worker flow through Fermi security gates (ER Sections 4.4.2.4.2 and 5.8.2.4.2). In ER Section 4.4.2.4.2, Detroit Edison	[1/8/10] Detroit Edison agreed to revise the ER to include a description of how the information in Table 2 was compiled.

RAI Number ¹	Response Date/ ADAMS Accession No.	Status of Response	Question Summary (RAI)	Full Text (supporting information)	Comments
				committed to supply this information within one year of submittal of the COLA.	
SE5.11-2 ESRP 5.11 10 CFR 51.45 10 CFR 51.70	6/19/09 ML091940262	Not complete	Provide copies of all correspondence and documentation of personal communications used to support the cumulative impact analysis presented in the ER, including but not limited to discussions with local government authorities on current or future activities/projects (public or private) in the vicinity of the Fermi site.	The projects that were considered in determining that cumulative impacts would be SMALL were not identified in ER Section 5.11.	[7/17/09] Response unacceptable. All of the requested items of correspondence will need to be provided for docketing because they will be cited as references in the EIS.
TE2.4.1-1 ESRP 2.4.1 10 CFR 51.71 (d)	8/25/09 ML092400535	Complete	Provide handouts used during the terrestrial ecology site audit tour.	Detroit Edison used handouts during the terrestrial ecology site audit tour to show locations of terrestrial ecology survey areas and findings. Handouts will be used to complete analyses that will be presented in the EIS.	[10/26/009] Response acceptable.
TE2.4.1-2 ESRP 2.4.1 10 CFR 51.71 (d)	6/19/09 ML091940262 11/23/09 ML093380365	Complete	Provide the interim report on the confirmatory updated terrestrial ecology survey for the first six months of study. Provide a more recent version and the final report when available.	The confirmatory terrestrial ecology survey was begun in July 2008 and is to be completed in July 2009. Results of this survey will be critical to the EIS analysis of ecological impacts.	[12/04/09] Response acceptable. Final report was provided by Detroit Edison with this RAI response. [7/17/09] Response unacceptable. The requested interim report must be submitted for docketing because the NRC needs to cite it as a reference in the EIS. Further, we understand that the final report will be transmitted on 11/25/09, and this must be submitted for docketing as well.
TE2.4.1-3 ESRP 2.4.1	7/31/09 ML092290713	Not complete	Provide copies of all correspondence with regulatory, natural heritage, and wildlife	Input from resources agencies is critical to ensuring a thorough and complete review of project	[9/10/09] Response unacceptable. NRC requires that the items provided in the reading rooms

RAI Number ¹	Response Date/ ADAMS Accession No.	Status of Response	Question Summary (RAI)	Full Text (supporting information)	Comments
10 CFR 51.71 (d)			agencies.	impacts. Provide copies of correspondence (letters/emails) from USFWS (11/26/07) and Michigan DNR (11/28/07).	only—the email from USFWS and the two MDNR correspondence records (or an acceptable summary of the discussions in those items)--be submitted for docketing (under oath or affirmation) because they will be cited as references in the EIS.
TE2.4.1-4 ESRP 2.4.1 10 CFR 51.71 (d)	6/19/09 ML091940262	Not complete	Provide a copy of the 2000 report "Wildlife Management Plan for DTE Fermi Property."	The report "Wildlife Management Plan for DTE Fermi Property" was reviewed during the site audit and is needed as an EIS reference. The plan provides information that is needed for an assessment of the impacts of construction and operations of Fermi 3. The plan is not available elsewhere.	[7/17/09] Response unacceptable. The requested report must be submitted for docketing because the NRC needs to cite it as a reference in the EIS.
TE2.4.1-5 ESRP 2.4.1 10 CFR 51.71 (d)	6/19/09 ML091940262	Not complete	Provide a copy of the July 2002 report "Wildlife Management Program Re-Certification for Fermi Power Plant."	The report "Wildlife Management Program Recertification for DTE Fermi Property" was reviewed during the site audit and is needed as an EIS reference. The report is not available elsewhere.	[7/17/09] Response unacceptable. The requested report must be submitted for docketing because the NRC needs to cite it as a reference in the EIS.
TE2.4.1-6 ESRP 2.4.1 10 CFR 51.71 (d)	6/19/09 ML091940262	Not complete	Provide a copy of the "Wetland Delineation/Wetlands Functional Values Assessment Report."	The "Wetlands Delineation and Wetlands Functional Values Assessment Report," reviewed during the site audit, is needed as a reference for the EIS. Report data will be used to complete the analysis of impacts to wetlands. The report is not available elsewhere.	[7/17/09] Response unacceptable. The requested report must be submitted for docketing because the NRC needs to cite it as a reference in the EIS.
TE2.4.1-7 ESRP 2.4.1 10 CFR 51.71 (d)	7/31/09 ML092290713	Complete	Provide a copy of the eagle nest location map.	One eagle nest was viewed during the terrestrial ecology special field tour and the location of another nest was described. A map showing the eagle nest sites was	[9/10/09] Response acceptable.

RAI Number ¹	Response Date/ ADAMS Accession No.	Status of Response	Question Summary (RAI)	Full Text (supporting information)	Comments
				available during the site audit, but is not available elsewhere. The map will be used as an EIS reference and will support the impact analysis.	
TE2.4.1-8 ESRP 2.4.1 10 CFR 51.71 (d)	6/19/09 ML091940262	Not complete	Provide a copy of Ducks Unlimited's (DU's) anecdotal fox snake sighting map.	During the site audit, the location of the sighting of the fox snake by DU personnel was described and a map showing the location of the sighting was examined. The map will be used as an EIS reference and will support the impact analysis.	[7/17/09] Response unacceptable. The requested report must be submitted for docketing because the NRC needs to cite it as a reference in the EIS.
TE2.4.1-9 ESRP 2.4.1 10 CFR 51.71 (d)	11/23/09 ML093380365	Complete	Provide the Michigan DNR protected species assessment report mentioned in a letter from Michigan DNR to Ralph Brooks dated November 28, 2007.	This report on the subject of protected species will be critical to the analysis of ecological impacts that will be presented in the EIS. The report is not available elsewhere.	[12/04/09] Response acceptable.
TE2.4.1-10 ESRP 2.4.1 10 CFR 51.71 (d)	11/23/09 ML093380365	Complete	Provide point maps of any protected species observed by Black & Veatch (B&V) or other contractors in planned spring and summer 2009 field observations.	The confirmatory terrestrial ecology survey was begun in July 2008 and is to be completed in July 2009. Provide point maps of any protected species observed during these surveys. Results will be critical to the EIS analysis of ecological impacts.	[12/04/09] Response acceptable.
TE2.4.1-11 ESRP 2.4.1 10 CFR 51.71 (d)	6/19/09 ML091940262 12/23/09 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.	[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.

RAI Number ¹	Response Date/ ADAMS Accession No.	Status of Response	Question Summary (RAI)	Full Text (supporting information)	Comments
					[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 letter will be provided when received. Therefore, this RAI remains open.
TE2.4.1-12 ESRP 2.4.1 10 CFR 51.71 (d)	2/15/10 ML100541329	Complete	Provide up-to-date and complete data on the locations and dates of sightings of the eastern fox snake (<i>Pantherophis gloydi</i>) on the proposed Fermi 3 site, including any sightings by Detroit Edison staff or others in the last 10 years.	Information about the numbers and locations of sightings of the eastern fox snake in recent years would facilitate evaluation of the nature of this snake's population on the project site. In a phone conversation with Ecology and Environment, the Michigan Department of Natural Resources (MDNR) indicated that its records of a viable population of eastern fox snakes on the Fermi property come at least in part from reports by Detroit Edison personnel. Detroit Edison should investigate its own records as well as coordinate with MDNR to determine the extent of recent and historical sightings data and to provide a basis for determining potential impacts to the eastern fox snake.	[2/25/10] Response acceptable.
TE 2.4.1-13 ESRP 2.4.1 10 CFR 51.71 (d)	2/15/10 ML100541329	Complete	Provide a delineation of potential eastern fox snake habitat within the proposed Fermi 3 site. Provide information, including a	While the ER provided a general description of potential eastern fox snake habitat, a more complete analysis of the Fermi 3 site with respect to its potential to provide	[2/25/10] Response acceptable.

RAI Number ¹	Response Date/ ADAMS Accession No.	Status of Response	Question Summary (RAI)	Full Text (supporting information)	Comments
			map, describing the location of the revised project footprint with respect to potential eastern fox snake habitat.	habitat for this snake and a graphical representation of where the revised project footprint would overlap potential eastern fox snake habitat would provide a more complete basis for assessing impacts to this snake.	
TE4.3.1-1 ESRP 4.3.1 10 CFR 51.71 (d)	12/23/09 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.	[2/11/10] Detroit Edison will provide an updated response based on comments provided. [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.
TE4.3.1-2 ESRP 4.3.1 10 CFR 51.71 (d)	10/30/09 ML093090165	Complete	Provide additional detailed terrestrial ecology impacts data for the proposed transmission line from the Fermi site to the Milan substation. Specifically, provide quantitative data on: <ul style="list-style-type: none"> • forest fragmentation; • changes of wetland type from palustrine forested to palustrine scrub-shrub or palustrine emergent types; and • impacts on threatened and endangered species 	The ER does not contain detailed information on construction impacts for the transmission line corridor. More detailed information is needed for the EIS, for the proposed transmission line from the Fermi site to the Milan Substation to support the assessment of ecological impacts. Data should include types and acreages of vegetative community impacts. Discussion should include impacts that cause changes in community types, especially forested to other types.	[11/12/09] Response acceptable, but none of the information requested was provided by Detroit Edison. Consequently, the NRC staff will use information they can obtain independently to determine the effects of transmission line construction on forest fragmentation, wetland impacts, and impacts to threatened and endangered species.

RAI Number ¹	Response Date/ ADAMS Accession No.	Status of Response	Question Summary (RAI)	Full Text (supporting information)	Comments
			<p>and important habitat.</p> <p>Provide a modified ER Table 4.3-4 to reflect acres of impact to vegetative communities from the clearing and operation of the ROW, not just the cumulative foot print of the towers.</p>		
<p>TE4.3.1-3 ESRP 4.3.1 10 CFR 51.71 (d)</p>	<p>7/31/09 ML092290713</p>	<p>Complete</p>	<p>Provide water budget for onsite wetlands or documentation that proposed activities will have no potential to substantially alter the water budget of the wetlands. Include information on water withdrawals and dewatering discharge locations.</p>	<p>Concerns were raised during the site audit about dewatering activities during construction. Provide confirmation of statement made by B&V at the site audit that dewatering would not affect wetland areas. Documentation will be used in the analysis of wetlands impacts to be presented in the EIS. The information provided must address the revised site layout.</p>	<p>[9/10/09] Response acceptable.</p>
<p>TE4.3.1-4 ESRP 4.3.1 10CFR 51.71 (d)</p>	<p>12/23/09 ML093650122</p>	<p>Complete</p>	<p>Provide a copy of the Conceptual Wetlands Mitigation Plan.</p>	<p>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.</p>	<p>[1/15/10] Response acceptable.</p>
<p>TE4.3.1-5 10 CFR 51.71 (d)</p>	<p>9/30/09 ML093350028 2/15/10 ML100541329</p>	<p>Complete</p>	<p>Provide a topographic map (1-foot contours) of the Fermi site that includes areas that would be developed and that could be used for onsite mitigation.</p>	<p>The potential for onsite wetlands impacts mitigation is in part dependent on small variations in topography. One-foot contour data would facilitate the analysis in the EIS of onsite mitigation potential and overall impacts to wetlands.</p>	<p>[2/25/10] Response acceptable. [10-20-09] Response unacceptable. NRC requires that the topographic maps identified in the RAI response be submitted for docketing (under oath or affirmation) because they will be cited as references in the EIS.</p>
<p>TE4.3.1-6 10 CFR 51.71 (d)</p>	<p>10/30/09 ML093090165</p>	<p>Complete</p>	<p>Provide MDEQ data on overall acreage of existing inland</p>	<p>During the site audit, MDEQ indicated that they may have</p>	<p>[11/12/09] Response acceptable</p>

RAI Number ¹	Response Date/ ADAMS Accession No.	Status of Response	Question Summary (RAI)	Full Text (supporting information)	Comments
			wetlands and coastal wetlands and permitting data for Monroe County (see Table 4.3-1 of ER).	acreage data for existing inland wetlands and coastal wetlands in the project vicinity, and could provide these data to Detroit Edison if requested. Such data would facilitate the analysis of construction impacts on onsite wetlands compared to wetlands in the wider surrounding area.	
TE4.3.1-7 10 CFR 51.71 (d)	7/31/09 ML092290713 11/23/09 ML093380365	Complete	Clarify that the column in ER Table 4.3-4 that is currently labeled "Acres Impacted" represents the percentage of the acreage of that type in the region, not the actual acres impacted.	The values in this table appear to be too small to represent the number of acres affected. These data are needed to complete the analysis to be presented in the EIS.	[11/23/09] Additional information was provided including a markup of the ER. [9/10/09] Response acceptable.
TE4.3.1-8 ESRP 2.4.1 10 CFR 51.71 (d)	2/15/10 ML100541329	Complete	Provide an assessment of the potential impacts of the proposed Fermi 3 project on eastern fox snakes and potential eastern fox snake habitat.	Additional detail beyond the information provided in the ER in Section 4.3.2.1 is needed to adequately assess potential impacts on the eastern fox snake.	[2/25/10] Response acceptable.
TE4.3.1-9 ESRP 2.4.1 10 CFR 51.71 (d)	2/15/10 ML100541329	Complete	Provide a discussion of measures Detroit Edison is considering to mitigate potential impacts to the eastern fox snake and its habitat. Detroit Edison should also provide complete documentation of any discussions or correspondence to date with the MDNR Natural Heritage Program related to the project's impact on the eastern fox snake and measures Detroit Edison would consider for mitigating impacts to this snake.	This RAI is a request to Detroit Edison to document its consideration of mitigation measures to minimize impacts on the eastern fox snake. Detroit Edison has been working with the MDNR to mitigate impacts to this snake, and documentation of those discussions is needed.	[2/25/10] Response acceptable.
TL4.1.2-1 ESRP 4.1.2 ESRP 5.1.2	7/31/09 ML092290713 2/15/10	Complete	Provide a description of construction, operation, and maintenance BMPs that would be applied to Fermi 3 transmission	In order to evaluate the impacts of transmission line construction, operation, and maintenance, a description of BMPs related to	[2/23/10] Response acceptable. [9/11/09] Detroit Edison agreed to provide the information requested

RAI Number ¹	Response Date/ ADAMS Accession No.	Status of Response	Question Summary (RAI)	Full Text (supporting information)	Comments
<p>10 CFR 51.71(d) 10 CFR 51, App. A(7)</p>	<p>ML100541329</p>		<p>line corridors to the Milan substation.</p>	<p>construction, operation, and maintenance activities is needed as related to protection of aquatic habitats, wetlands, cultural resources, invasive species control, threatened and endangered species, wildlife management, and habitat maintenance. Provide manuals used by ITC Transmission that describe BMPs. This information is not publically available and is needed for the impact analysis to be presented in the EIS.</p>	<p>above. Although NRC/Argonne would prefer the actual manuals used by ITC, a synopsis of that information would be acceptable.</p> <p>[9/10/09] Response unacceptable. Insufficient detail is provided in the response to address information requested in this RAI related to BMPs for operations and maintenance. Descriptions of BMPs for operations and maintenance related to protection of aquatic habitats, wetlands, cultural resources, invasive species control, threatened and endangered species, wildlife management, and habitat maintenance must be provided. BMPs may include, but are not necessarily limited to setbacks, resource-specific vegetation management techniques (e.g., manual controls, special herbicides, application techniques), selective invasive species control, native species plantings, worker education programs, etc. The information on the BMPs to be employed will form the basis, in part, for determining the magnitude of impacts.</p>
<p>TL4.1.2-2 ESRP 4.1.2 ESRP 5.1.2 10 CFR 51.71(d) 10 CFR 51, App.</p>	<p>7/31/09 ML092290713 2/15/10 ML100541329</p>	<p>Complete</p>	<p>Provide a description of the routing process used to identify the proposed Fermi 3-to-Milan corridor.</p>	<p>The EIS will include a description of the process used to identify the transmission line corridors for Fermi 3. The criteria identified in the ER (Section 2.2.2.2) are very general and describe the process used in the siting of transmission</p>	<p>[2/23/10] Response acceptable.</p> <p>[9/11/09] Detroit Edison agreed to provide the information and document requested above.</p> <p>[9/10/09] Response unacceptable. The response does not provide</p>

RAI Number ¹	Response Date/ ADAMS Accession No.	Status of Response	Question Summary (RAI)	Full Text (supporting information)	Comments
A(7)				lines for Fermi 2 in 1972. The methodology used to select the current proposed corridor route is needed.	the requested description of how the route from the Fermi 3 site to the Milan substation was determined. Also, ITC's "Transmission Planning Criteria," mentioned in the response as being included with the response, was not provided. We request this document be submitted for docketing, under oath or affirmation, for our use and reference in the EIS.
TL4.1.2-3 ESRP 4.1.2 ESRP 5.1.2 10 CFR 51.71(d) 10 CFR 51, App. A(7)	7/31/09 ML092290713	Complete	Provide a statement regarding the need to upgrade roads and, if applicable, plans to upgrade roads for transmission line construction from Fermi 3 to the Milan substation.	The ER did not provide adequate description of the need to upgrade roads for transmission line construction to the Milan substation. This information is needed to complete the analysis of transmission line impacts.	[9/10/09] Response acceptable.
TR3.8-1 ESRP 3.8 10 CFR 51.52	10/30/09 ML093090165	Complete	Provide an analysis for the estimation of the heat load expected in a spent fuel shipping cask for comparison with that in 10 CFR 51.52 Table S-4 (250,000 Btu/hr).	Shipping cask heat loads must be evaluated per 10 CFR 51.52 requirements	[11/12/09] Response acceptable.
TR3.8-2 ESRP 3.8 10 CFR 51.52	10/30/09 ML093090165	Complete	Provide assurance of compliance of irradiated fuel and other waste shipments with 10 CFR 51.52 Table S-4 with respect to shipment weight limits (73,000 lbs per truck).	Shipment weights must be shown to be in compliance with 10 CFR 51.52 requirements.	[11/12/09] Response acceptable.
TR3.8-3 ESRP 3.8 10 CFR 51.52	10/30/09 ML093090165	Complete	Provide estimates of the number of annual shipments of unirradiated fuel, irradiated fuel, and waste for comparison with the	Estimated number of radiological shipments to and from the facility must be evaluated per 10 CFR 51.52 requirements.	[11/12/09] Response acceptable.

RAI Number ¹	Response Date/ ADAMS Accession No.	Status of Response	Question Summary (RAI)	Full Text (supporting information)	Comments
			truck traffic density of less than 1 per day in 10 CFR 51.52 Table S-4. Include all supporting calculations.		
TR3.8-4 ESRP 3.8 10 CFR 51.52	10/30/09 ML093090165	Complete	Provide a comparison of the non-radiological transportation impacts for Fermi 3 with Table S-4 in 10 CFR 51.52 (i.e., non-radiological accidents result in one fatal injury per 100 reactor years, 1 non-fatal injury in 10 reactor years, and \$475 in property damage per year). Include supporting input such as the number of shipments of each type, shipment distances, and accident and injury rates.	Estimated non-radiological impacts must be evaluated per 10 CFR 51.52 requirements.	[11/12/09] Response acceptable.
TR3.8-5 ESRP 3.8 ESRP 5.7.2 ESRP 7.4 10 CFR 51.52(b)	10/30/09 ML093090165	Complete	Provide a full description and detailed analysis of the environmental effects of the transportation of fuel and waste to and from Fermi-3 and alternative sites that meets the intent of 10 CFR 51.52(b). Conduct a site-specific analysis using an acceptable methodology, such as RADTRAN 5. The transportation risk assessment must describe key input parameters and assumptions and provide justification that the best available information has been used in developing the RADTRAN 5 input values. Provide the RADTRAN and any additional software input and output files (in electronic form) that support the analysis.	The ER contains an assertion that Fermi-3 transportation impacts are bounded by those in a previous NRC EIS for the Grand Gulf ESP. However, this does not adequately address the intent of 10 CFR 51.52(b) which requires a detailed analysis for the reactor should all conditions under 10 CFR 51.52(a) not be met.	[11/12/09] Response acceptable.
TR4.8.3-1	11/23/09 ML093380365	Complete	Provide a list of the major types and quantities of construction	This information provides the basis for estimation of the	[12/04/09] Response acceptable.

RAI Number ¹	Response Date/ ADAMS Accession No.	Status of Response	Question Summary (RAI)	Full Text (supporting information)	Comments
EIS Section 4.8.3			materials required to construct the proposed 1600 MWe reactor similar to that provided in Section 10.2.2.1 of the ER for a 1300 MWe reactor.	transportation impacts of construction material shipments for presentation in Section 4.8.3 of the EIS.	
TR4.8.3-2 EIS Sections 4.8.3 and 5.8.6	10/30/09 ML093090165	Complete	Provide an estimate of the average distances that will be travelled to work by Fermi 3 construction and operations employees.	This information provides the basis for estimation of construction worker and operations personnel transportation impacts for presentation in Sections 4.8.3 and 5.8.6 of the EIS.	[11/12/09] Response acceptable.
TR7.4-1 ESRP 7.4	9/30/09 ML093350028	Complete	Provide documentation that supports the contention that "the ESBWR design incorporates provisions to minimize crud buildup" as stated in Section 7.4.2 of the ER.	Development of the source term for transportation accidents in the ER assumes that crud buildup in the ESBWR design will not exceed that in existing BWR reactors, but no supporting evidence was given.	[12-16-09] Response acceptable.

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.

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, para. 2, it's not clear if those 2 acres are included in the 290 acre figure for total disturbed area.

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).

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.

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

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.

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.

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.

Page 10-34, Land Use. 116 acres is changed to 125 here, but it is changed to 27 ac 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				
Period Of Record	10m Level		60m Level	
	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.