

PMFermiCOLNPEm Resource

From: Stephen Lemont
Sent: Wednesday, May 06, 2009 10:54 AM
To: Randall Westmoreland
Cc: Luff, Colette M LRE; Peter Smith; Kirk LaGory; John Hayse; FermiCOL Resource
Subject: PRE-DECISIONAL NON-PUBLIC: Fermi 3 Draft RAIs
Attachments: Draft NRC Fermi 3 Environmental RAIs 4-29-09.pdf; USACE RAI package for Fermi.pdf; ML0909801590.doc

Randy,

Since the NRC Office of General Counsel has completed its review of the subject Requests for Additional Information (RAIs) for the subject project and we have incorporated their comments, I am now able to send you the attached advance copy of the NRC RAIs. Also attached are the RAIs from the U.S. Army Corps of Engineers (USACE) Detroit District and the draft of the RAI transmittal letter. The official transmittal of the final NRC and USACE RAIs will be coming to DTE Energy in the near future. Please note that all of the attachments are subject to change prior to the official transmittal.

Please contact me if you have any questions or need additional information on the attached draft RAIs. Also, we can have conference calls or meetings as necessary to discuss these RAIs, both in advance of and following their official transmittal.

Thanks,
Steve Lemont

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Enclosure 1
U.S. Nuclear Regulatory Commission (NRC) Requests for Additional Information (RAIs)
Fermi Nuclear Power Plant, Unit 3 (Fermi 3)
Combined License Application - Environmental Report

GENERAL (GE)

RAI Number ¹	Question Summary (RAI)	Full Text (supporting information)
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	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 nor fully expresses the purpose nor does it establish the "need" in ER Chapter 1 (in addition to the applicant's 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</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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GENERAL (Continued)

RAI Number	Question Summary (RAI)	Full Text (supporting information)
		<p>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 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 applicant’s 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>

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GENERAL (Continued)

RAI Number	Question Summary (RAI)	Full Text (supporting information)
GE1.2-1 ESRP 1.2 10 CFR 51.45(d)	Provide documentation or a description of the status of Coastal Zone Management (CZM) Certification for Fermi 3.	Documented proof of CZM Certification must be provided to the NRC by Detroit Edison before the NRC can issue a combined license. The current status and process for obtaining CZM Certification will be presented in the EIS.
GE1.2-2 ESRP 1.2 10 CFR 51.45(d)	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.
GE1.2-3 ESRP 1.2 10 CFR 51.45(d)	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.
GE2-1 ESRP Sections 2, 3, 4, and 5	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.
GE2-2 ESRP Sections 2, 3, 4, and 5	Provide electronic versions of all Environmental Report Rev. 0, September 2008 (the "ER") figures in .jpeg, .png or .tif format at a resolution of at least 300 dpi.	Electronic versions of the figures used in the ER at sufficiently high 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	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.

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GENERAL (Continued)

RAI Number	Question Summary (RAI)	Full Text (supporting information)
GE3.1-1 ESRP 3.1 10 CFR 51.45 Reg. Guide 4.2, Ch. 2	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.
GE4-1 ESRP 4 and 5 Endangered Species Act of 1973, as amended	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.

Enclosure 1 (Continued)
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ACCIDENTS (AC)

RAI Number	Question Summary (RAI)	Full Text (supporting information)
Accidents – Design Basis		
AC7.1-1 ESRP 7.1 10 CFR 50.34 10 CFR 52.79	Provide a reevaluation of the Design Basis Accidents (DBA) doses using the ESBWR Design Control Document (DCD) Revision 5 source terms and site-specific X/Q values for the Exclusion Area Boundary (EAB) and Low Population Zone (LPZ).	During the site audit, Detroit Edison presented new DBA doses using DCD Revision 5. The NRC staff will use the X/Q values and calculate the EAB And LPZ doses for the DBAs, and compare the results of its calculations with the results of Detroit Edison's calculations.
Accidents - Severe		
AC7.2-1 ESRP 7.2 10 CFR 51.50(c)	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 the Detroit Edison's calculations.
AC7.2-2 ESRP 7.2 10 CFR 51.50(c)	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.

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ACCIDENTS (Continued)

RAI Number	Question Summary (RAI)	Full Text (supporting information)
Accidents – Severe Accident Mitigation Alternatives (SAMA)		
AC7.3-1 10 CFR 51.50(c) 10 CFR 52.79(d)(3)	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 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.	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 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.

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AIR QUALITY AND METEOROLOGY (AQ)

RAI Number	Question Summary (RAI)	Full Text (supporting information)
AQ2.7-1 ESRP 2.7 40 CFR 51, Subpart W	Provide a general conformity analysis for construction and operation activities of the proposed Fermi 3 project due to nonattainment status of the area for 8-hour ozone and PM _{2.5} .	Section 2.7.2.1 of the ER states that "Monroe County and the counties that include the Detroit metropolitan area are ruled as non-attainment areas for the USEPA's PM _{2.5} and 8-hour ozone standard." Accordingly, the site is subject to a general conformity analysis under 40 CFR 51, Subpart W. Provide a conformity analysis for ozone and PM _{2.5} associated with construction and operation of Fermi 3, along with quantifying direct and indirect emission rates.
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)	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.

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AIR QUALITY AND METEOROLOGY (Continued)

RAI Number	Question Summary (RAI)	Full Text (supporting information)
AQ2.7-3 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 10 CFR 51.50 10 CFR 51.70(b) 10 CFR 51 App. A 10 CFR 100.20(c)	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.

Enclosure 1 (Continued)
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AIR QUALITY AND METEOROLOGY (Continued)

RAI Number	Question Summary (RAI)	Full Text (supporting information)
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	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.
AQ2.7-5 ESRP 2.7 Reg. Guide 1.145, Sec. C 10 CFR 51.50 10 CFR 51.70(b) 10 CFR 51 App. A	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.

Enclosure 1 (Continued)
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AIR QUALITY AND METEOROLOGY (Continued)

RAI Number	Question Summary (RAI)	Full Text (supporting information)
AQ3.6.3-1 ESRP 3.6.3 10 CFR 51.71(d)	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.
AQ3.6.3-2 ESRP 3.6.3 10 CFR 51.71(d)	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 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)	Provide a copy of the figure used during the site audit tour (titled “DTE Fermi Site”) that included locations of existing and proposed air emission sources.	During 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.
AQ4.4.1-1 ESRP 4.4.1 10 CFR 51.71(d)	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.

Enclosure 1 (Continued)
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AIR QUALITY AND METEOROLOGY (Continued)

RAI Number	Question Summary (RAI)	Full Text (supporting information)
AQ5.3.3.1-1 ESRP 5.3.3.1 10 CFR 51.71(d)	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 completeness of the impact analysis.
AQ5.8.1-1 ESRP 5.8.1 10 CFR 51.71(d)	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.

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AIR QUALITY AND METEOROLOGY (Continued)

RAI Number	Question Summary (RAI)	Full Text (supporting information)
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)	Provide a thorough review to determine if onsite meteorological data are representative of the site dispersion characteristics for the Fermi 3 permit application. Include verification of the instrumentation vendor.	<p>Per Reg. Guide 1.23, "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." However, visual inspection during the site audit indicated that the distance from the tower to the nearest obstruction (i.e., the wooded area located west of the tower) is less than ten obstruction heights. The applicant 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 the Detroit Edison to describe the evaluation that closed out this issue.</p> <p>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 is translated as 0.4°C/100 m, which is used to determine P-G stability class in the NRC's ΔT_{100m} method. Accordingly, it can render different stability classes between primary and secondary monitoring systems.</p> <p>The ER incorrectly lists the instrumentation vendor (i.e., the instrumentation was provided by Climatronics, not Climet).</p>

Enclosure 1 (Continued)
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ALTERNATIVES (AL)

RAI Number	Question (Summary) (RAI)	Full Text (Supplemental information requested)
AL9.3-1 ESRP 9.3 (I) 10 CFR 51.50(c) NEPA Section 102(2)(C)(iii)	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 Sites A and C. • 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.
AL9.3-2 ESRP 9.3 (I) 10 CFR 51.50(c) NEPA Section 102(2)(C)(iii)	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).	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.

Enclosure 1 (Continued)
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AQUATIC ECOLOGY (AE)

RAI Number	Question Summary (RAI)	Full Text (supporting information)
AE2.4.2-1 ESRP 2.4.2 10 CFR 51.71(d)	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.
AE2.4.2-2 ESRP 2.4.2 10 CFR 51.71(d)	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 intake structure based upon the first half of the ongoing one-year monitoring effort. 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.

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AQUATIC ECOLOGY (Continued)

RAI Number	Question Summary (RAI)	Full Text (supporting information)
AE2.4.2-3 ESRP 2.4.2 10 CFR 51.71(d)	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.
AE2.4.2-4 ESRP 2.4.2 10 CFR 51.71(d)	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.
AE4.3.2-1 ESRP 4.3.2 10 CFR 51.71(d) 33 CFR Section 320.2-320.4 40 CFR Part 230	Provide any available chemical characterization information pertaining to dredged materials from areas in Lake Erie near the Fermi site.	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.
AE5.2.2-1 ESRP 5.2.2-1 10 CFR 51.71(d)	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.	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.

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AQUATIC ECOLOGY (Continued)

RAI Number	Question Summary (RAI)	Full Text (supporting information)
AE5.3.1.2-1 ESRP 5.3.1.2 10 CFR 51.71(d)	Provide information pertinent to the evaluation of the cumulative impacts of impingement and entrainment on aquatic resources 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.	The impingement and entrainment information that is provided in ER Section 5.3.1.2.4 for other nearby power generation facilities dates 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.

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BENEFIT-COST BALANCE (BC)

RAI Number	Question Summary (RAI)	Full Text (supporting information)
BC10.4.2-1 ESRP 10.4.2 10 CFR 51.45 10 CFR 51.71	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.
BC10.4.2-2 ESRP 10.4.2 10 CFR 51.45 10 CFR 51.71	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 by Detroit Edison. 	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.

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CULTURAL RESOURCES (CR)

RAI Number	Question Summary (RAI)	Full Text (supporting information)
CR2.5.3-1 ESRP 2.5.3 10 CFR 51.71 (d) 36 CFR 800	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.
CR4.1.3-1 ESRP 4.1.3 ESRP 5.1.3 10 CFR 51.71 (d) 36 CFR 800 36 CFR 63	Provide copies of all past, present, and future correspondence and documentation of discussions between the applicant, 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.
CR4.1.3.-2 ESRP 4.1.3 and ESRP 5.1.3 10 CFR 51.71 (d) 36 CFR 800 43 CFR 10	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.

Enclosure 1 (Continued)
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CULTURAL RESOURCES (Continued)

RAI Number	Question Summary (RAI)	Full Text (supporting information)
CR4.1.3-3 ESRP 4.1.3 ESRP 5.1.3 10 CFR 51.71 (d) 36 CFR 800	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.
CR4.1.3-4 ESRP 4.1.3 10 CFR 51.71 (d) 36 CFR 800 43 CFR 10	Provide a document outlining standard procedures that the applicant would follow in the event that unanticipated archaeological resources or human burials are identified during construction, including procedures required by applicable State and Federal laws for human burials.	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.
CR4.1.3-5 ESRP 4.1.3 10 CFR 51.71 (d) 36 CFR 800	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.
CR4.1.3-6 ESRP 4.1.3 ESRP 5.1.3 10 CFR 51.71(d) 36 CFR 800	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.

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CULTURAL RESOURCES (Continued)

RAI Number	Question Summary (RAI)	Full Text (supporting information)
CR4.1.3-7 ESRP 4.1.3 ESRP 5.1.3 10 CFR 51.71(d) 36 CFR 800	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.
CR4.1.3-8 ESRP 4.1.3 ESRP 5.1.3 10 CFR 51.71(d) 36 CFR 800	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.
CR4.1.3-9 ESRP 4.1.3 ESRP 5.1.3 10 CFR 51.71(d) 36 CFR 800 36 CFR 63	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.

Enclosure 1 (Continued)
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FUEL CYCLE (FC)

RAI Number	Question Summary (RAI)	Full Text (supporting information)
FC5.7-1 ESRP 5.7 10 CFR 51.51(b) Table S-3	Provide corrected information related to uranium fuel cycle impacts.	<p>The Fermi 3 ER contains errors on pages 5-142 and 5-143. The applicant erred when it used the 1.79 scaling factor to adjust the following percentages:</p> <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%. • 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%.
FC5.7-2 ESRP 5.7 10 CFR 51.51(b) Table S-3	Provide corrected information related to uranium fuel cycle Tc-99 releases.	<p>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.</p>

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HUMAN HEALTH (HH)

RAI Number	Question Summary (RAI)	Full Text (supporting information)
HH3.6.3-1 ESRP 3.6.3 40 CFR Part 80	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 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	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.
HH4.5-2 ESRP 4.5 40 CFR 190 10 CFR 50 App. I	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 statement to that effect is needed from the Applicant.
HH4.5-3 ESRP 4.5 10 CFR 20.1301 10 CFR 50 App. I	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 doses from Fermi 2, but do not include any component or discussion about doses from Fermi 1.

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HUMAN HEALTH (Continued)

RAI Number	Question Summary (RAI)	Full Text (supporting information)
HH4.5-4 ESRP 4.5 10 CFR 20.1301 40 CFR 190 10 CFR 50 App. I	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.
HH5.3.4-1 ESRP 5.3.4 40 CFR 141.70	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 this assessment.
HH5.4.1-1 ESRP 5.4.1 10 CFR 20.1301 10 CFR 50 App. I 40 CFR 190	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.	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.
HH5.4.1-2 ESRP 5.4.1 10 CFR 20.1301	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.

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HUMAN HEATH (Continued)

RAI Number	Question Summary (RAI)	Full Text (supporting information)
HH5.4.1-3 ESRP 5.4.1 10 CFR 20.1301	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.
HH5.4.2-1 ESRP 5.4.2 10 CFR 50, App. I 10 CFR 20.1301 40 CFR 190	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.
HH5.4.2-2 ESRP 5.4.2 10 CFR 50.34a	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 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	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.

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HUMAN HEATH (Continued)

RAI Number	Question Summary (RAI)	Full Text (supporting information)
HH5.4.3-2 ESRP 5.4.3 10 CFR 20.1201	Provide any plans to build an Independent Spent Fuel Storage Installation (ISFSI) before or during the construction of Fermi 3.	If the applicant 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.
HH5.4.3-3 ESRP 5.4.3 10 CFR 20.1301 40 CFR 190 10 CFR 50, App. I	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.
HH5.4.4-1 ESRP 5.4.4 40 CFR 190, 10 CFR 20.1301(d)	Provide dose estimates for biota (including the bald eagle) inside the site boundary (0.25 mi from Fermi 3 emission sources).	<p>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 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."</p> <p>Section 2.4.1.2.1, page 2-330 of the ER mentions that bald eagle continues to receive federal protection under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act and on the Fermi property two bald eagle nests were observed in May 2008.</p>

Enclosure 1 (Continued)
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HUMAN HEATH (Continued)

RAI Number	Question Summary (RAI)	Full Text (supporting information)
HH5.11.7-1 ESRP 5.11 40 CFR 190	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.
HH6.2-1 ESRP 6.2 Reg. Guides 4.1 and 4.15	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.

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HYDROLOGY (HY)

RAI Number	Question Summary (RAI)	Full Text (supporting information)
HY2.3.1-1 ESRP 2.3.1 10 CFR 51.70(b)	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.
HY2.3.1-2 ESRP 2.3.1 10 CFR 51.70(b)	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.
HY2.3.1-3 ESRP 2.3.1 10 CFR 51.70(b)	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.

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HYDROLOGY (Continued)

RAI Number	Question Summary (RAI)	Full Text (supporting information)
HY2.3.1-4 ESRP 2.3.1 10 CFR 51.70(b)	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.
HY2.3.1-5 ESRP 2.3.1 10 CFR 51.70(b)	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) is typically applied to data from confined aquifers according to an Aqtesolv tutorial document provided by Detroit Edison. However, the rock fill under the Fermi site is unconfined. Therefore, the method used by Detroit Edison needs justification or correction.
HY2.3.1-6 ESRP 2.3.1 10 CFR 51.70(b)	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 aquifer. Such a situation can cause problems in the curve-matching process of data interpretation for the EIS.

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HYDROLOGY (Continued)

RAI Number	Question Summary (RAI)	Full Text (supporting information)
HY2.3.1-7 ESRP 2.3.1 10 CFR 51.70(b)	Model the groundwater heads of the different materials resulting from dewatering during Fermi 3 pre-construction and construction activities. Provide the input and output files (in electronic format), calibrations, and sensitivity analysis for the model.	<p>The MODFLOW groundwater flow model was used to estimate the drawdown across the Fermi site for 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 nevertheless utilized in 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 needs to use locally measured hydraulic properties of the geologic materials as input parameters and to 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 the boundary conditions.</p>
HY2.3.1-8 ESRP 2.3.1 10 CFR 51.70(b)	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.	Information on excavation depth and the extent of rock fills is important for understanding the effects of construction and operations on groundwater hydrology. The hydraulic connections among Bass Islands bedrock aquifer, rock fills, and surrounding lacustrine clay and tills have not been fully characterized in the ER. A full characterization will be used to evaluate the impacts of construction and operations on groundwater flow and quality.
HY2.3.1-9 ESRP 2.3.1 10 CFR 51.70(b)	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). Plum Brook is not located near Swan Creek, and has a much smaller watershed area. There are other gauged streams that are closer and more similar to Swan Creek that would provide a more appropriate basis for estimation.

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HYDROLOGY (Continued)

RAI Number	Question Summary (RAI)	Full Text (supporting information)
HY2.3.1-10 ESRP 2.3.1 10 CFR 51.70(b)	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, erosion/sedimentation, and wave generation.
HY2.3.1-11 ESRP 2.3.1 10 CFR 51.70(b)	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.
HY2.3.1-12 ESRP 2.3.1 10 CFR 51.70(b)	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.
HY2.3.1-13 ESRP 2.3.1 10 CFR 51.70(b)	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.
HY2.3.1-14 ESRP 2.3.1 10 CFR 51.70(b)	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 	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.

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HYDROLOGY (Continued)

RAI Number	Question Summary (RAI)	Full Text (supporting information)
	<p>is adequate to supply the needs for Fermi 2 and Fermi 3.</p> <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. 	
<p>HY2.3.1-15 ESRP 2.3.1 10 CFR 51.70(b)</p>	<p>Provide copies of the following:</p> <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; 	<p>These documents are cited in the ER, but are not publically available. They need to be made available to the NRC staff so they can be cited as references in the EIS.</p>

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HYDROLOGY (Continued)

RAI Number	Question Summary (RAI)	Full Text (supporting information)
	<ul style="list-style-type: none"> • Storm Water Pollution Prevention Plan for Fermi 2 Plant, Rev. 7; • 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. 	
HY2.3.1-16 ESRP 2.3.1 10 CFR 51.70(b)	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.
HY4.2.1-1 ESRP 4.2.1 10 CFR 51.45	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.	The details of the planned dewatering operation were not discussed in the ER. With revised modeling results (see RAI 2.3.1-7 above), information on the dewatering schedule, locations and depths of dewatering wells may need to be updated.

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HYDROLOGY (Continued)

RAI Number	Question Summary (RAI)	Full Text (supporting information)
HY4.2.1-2 ESRP 4.2.1 33 CFR 330 10 CFR 51.45	Provide justification of the use of the drain package of the MODFLOW model for local-scale modeling of the effect of dewatering operations during the construction of Fermi 3.	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 conceptual approach, using the same approach for the excavation dewatering analysis for Fermi 3, requires justification as the dewatering analysis is for a local scale, focusing on the Fermi site. The grid size is much larger in a regional model than in a local model. Treating a quarry as a drain in a local model may not be appropriate (see RAI 2.3.1-7 above).
HY4.2.1-3 ESRP 4.2.1 33 CFR 330 10 CFR 51.45	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. Provide information on maps to show the extent of dredging for the above proposed structures and for areas outside of the barge slip.	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.

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HYDROLOGY (Continued)

RAI Number	Question Summary (RAI)	Full Text (supporting information)
HY4.2.1-4 ESRP 4.2.1 10 CFR 51.45 10 CFR 51.70(b)	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.
HY4.2.1-5 ESRP 4.2.1 10 CFR 51.50	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.
HY4.2.1-6 ESRP 4.2.1 10 CFR 51.70(b)	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.

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HYDROLOGY (Continued)

RAI Number	Question Summary (RAI)	Full Text (supporting information)
HY4.2.1-7 ESRP 4.2.1 10 CFR 51.50	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.
HY4.6-1 ESRP 4.6 10 CFR 51.50	Provide the Soil Erosion and Sedimentation Control (SESC) plan for the construction of Fermi 3.	Detroit Edison has indicated that a SESC plan will be developed after the layout of Fermi 3 is finalized. This plan will provide an important basis for the assessment of construction impacts in the EIS.
HY4.6-2 ESRP 4.6 10 CFR 51.50	Provide the Storm Water Pollution Prevention Plan (SWPPP) plan 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.
HY4.6-3 ESRP 4.6 10 CFR 51.50	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 permitting strategy will be discussed in the EIS.
HY5.2-1 ESRP 5.2 10 CFR 51.50	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.

Enclosure 1 (Continued)
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HYDROLOGY (Continued)

RAI Number	Question Summary (RAI)	Full Text (supporting information)
HY5.3.2-1 ESRP 5.3.2 10 CFR 51.45	<p>Resolve the inconsistency between ER Sections 5.3.2.1.1 and 3.4.1.1 regarding the cooling water basin for Fermi 3.</p> <p>Provide information on how the Fermi 3 normal power heat sink (NPHS) basin accommodates the water need during acute low-water events.</p>	<p>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 for the Fermi 3 cooling system.</u>”</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	<p>Provide the input and output files (in electronic form) for the CORMIX thermal plume analysis.</p>	<p>The input and output files are needed to allow performance of confirmatory analyses for the EIS.</p>

Enclosure 1 (Continued)
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HYDROLOGY (Continued)

RAI Number	Question Summary (RAI)	Full Text (supporting information)
HY5.3.2-3 ESRP 5.3.2 10 CFR 51.45	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 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	Explain why a single-port CORMIX 1 model was used to model the thermal plume for evaluating the effects of rare westward currents, 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.
HY5.3.2-5 ESRP 5.3.2 10 CFR 51.45	Explain why the parameter Sigma angle was set as 263 degrees in the CORMIX model runs for Model Set 3. 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.	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.
HY5.11-1 ESRP 5.11 10 CFR 51.45 10 CFR 51.50	Provide information on cumulative water withdrawals and chemical and thermal discharges to the Western Lake Erie Basin from other users.	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.

Enclosure 1 (Continued)
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LAND USE (LU)

RAI Number	Question Summary (RAI)	Full Text (supporting information)
LU1.2-1 ESRP 1.2 10 CFR 51.45(d) 10 CFR 51.71	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, 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.
LU1.2-1 ESRP 1.2 10 CFR 51.45 10 CFR 51.71 10 CFR 100.11	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.
LU1.2-1 ESRP 1.2 10 CFR 51.45 10 CFR 51.71	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.
LU4.1.1-1 ESRP 4.1.1 10 CFR 51.45 10 CFR 51.71	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.

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LAND USE Continued)

RAI Number	Question Summary (RAI)	Full Text (supporting information)
LU4.4.2-1 ESRP 4.4.2 ESRP 10.4.1 10 CFR 51.45 10 CFR 51.71	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.

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NOISE (NO)

RAI Number	Question Summary (RAI)	Full Text (supporting information)
NO3.7-1 ESRP 3.7 10 CFR 51.71(d)	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.
NO4.4.1-1 ESRP 4.4.1 10 CFR 51.71(d)	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.
NO4.4.1-2 ESRP 4.4.1 10 CFR 51.71(d)	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 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)	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.

Enclosure 1 (Continued)
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SOCIOECONOMICS (SE)

RAI Number	Question Summary (RAI)	Full Text (supporting information)
SE2.5.1-1 ESRP 2.5.1 10 CFR 51.45 10 CFR 51.70	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 within the region.
SE2.5.2-1 ESRP 2.5.2 10 CFR 51.45 10 CFR 51.70	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.
SE2.5.2-2 ESRP 2.5.2 10 CFR 51.45 10 CFR 51.70	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.

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SOCIOECONOMICS (Continued)

RAI Number	Question Summary (RAI)	Full Text (supporting information)
SE2.5.2-3 ESRP 2.5.2 10 CFR 51.45 10 CFR 51.70	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 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	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.
SE4.4.2-1 ESRP 4.4.2 ESRP 5.8.2 10 CFR 51.45 10 CFR 51.70	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.

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SOCIOECONOMICS (Continued)

RAI Number	Question Summary (RAI)	Full Text (supporting information)
SE4.4.2-2 ESRP 4.4.2 ESRP 5.8.2 10 CFR 51.45 10 CFR 51.70	Provide copies of all correspondence and documentation of personal communications used to support analysis in the ER sections on public safety and social services.	The staff needs to be able to identify the information obtained to support statements related impact evaluation on public safety and social services, where such 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.
SE4.4.2-3 ESRP 4.4.2 ESRP 5.8.2 10 CFR 51.45 10 CFR 51.70	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 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.
SE4.4.2-4 ESRP 4.4.2 ESRP 5.8.2 10 CFR 51.45 10 CFR 51.70	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 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.
SE4.4.2-5 ESRP 4.4.2 ESRP 5.8.2 10 CFR 51.45 10 CFR 51.70	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.

Enclosure 1 (Continued)
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SOCIOECONOMICS (Continued)

RAI Number	Question Summary (RAI)	Full Text (supporting information)
SE4.4.2-6 ESRP 4.4.2 ESRP 5.8.2 10 CFR 51.45 10 CFR 51.70	Provide revised and updated construction cost estimates, 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.	The data are needed to better characterize the economic 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	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).
SE4.4.2-8 ESRP 4.4.2 ESRP 5.8.2 10 CFR 51.45 10 CFR 51.70	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.
SE4.4.2-9 ESRP 4.4.2 10 CFR 51.45 10 CFR 51.70	Confirm statement made during the site audit that minimal to no construction materials would be transported to the project site by water.	This information is needed to perform the analysis of impacts related to the transportation of construction materials.

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SOCIOECONOMICS (Continued)

RAI Number	Question Summary (RAI)	Full Text (supporting information)
SE4.4.2-10 ESRP 4.4.2 ESRP 5.8.2 10 CFR 51.45 10 CFR 51.70	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 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	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.

Enclosure 1 (Continued)
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TERRESTRIAL ECOLOGY (TE)

RAI Number	Question Summary (RAI)	Full Text (supporting information)
TE2.4.1-1 ESRP 2.4.1 10 CFR 51.71 (d)	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.
TE2.4.1-2 ESRP 2.4.1 10 CFR 51.71 (d)	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.
TE2.4.1-3 ESRP 2.4.1 10 CFR 51.71 (d)	Provide copies of all correspondence with regulatory, natural heritage, and wildlife agencies.	Input from resources agencies is critical to ensuring a thorough and complete review of project impacts. Provide copies of correspondence (letters/emails) from USFWS (11/26/07) and Michigan DNR (11/28/07).
TE2.4.1-4 ESRP 2.4.1 10 CFR 51.71 (d)	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.
TE2.4.1-5 ESRP 2.4.1 10 CFR 51.71 (d)	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.
TE2.4.1-6 ESRP 2.4.1 10 CFR 51.71 (d)	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.

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TERRESTRIAL ECOLOGY (Continued)

RAI Number	Question Summary (RAI)	Full Text (supporting information)
TE2.4.1-7 ESRP 2.4.1 10 CFR 51.71 (d)	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 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)	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.
TE2.4.1-9 ESRP 2.4.1 10 CFR 51.71 (d)	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.
TE2.4.1-10 ESRP 2.4.1 10 CFR 51.71 (d)	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.
TE2.4.1-11 ESRP 2.4.1 10 CFR 51.71 (d)	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.

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TERRESTRIAL ECOLOGY (Continued)

RAI Number	Question Summary (RAI)	Full Text (supporting information)
TE4.3.1-1 ESRP 4.3.1 10 CFR 51.71 (d)	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.
TE4.3.1-2 ESRP 4.3.1 10 CFR 51.71 (d)	<p>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:</p> <ul style="list-style-type: none"> • forest fragmentation; • changes of wetland type from PFO to PSS or PEM; and • impacts on threatened and endangered species and important habitat. <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>	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.

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TERRESTRIAL ECOLOGY (Continued)

RAI Number	Question Summary (RAI)	Full Text (supporting information)
TE4.3.1-3 ESRP 4.3.1 10 CFR 51.71 (d)	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.	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.
TE4.3.1-4 ESRP 4.3.1 10CFR 51.71 (d)	Provide a copy of the Conceptual Wetlands Mitigation Plan.	During the site audit, participants requested that Detroit Edison provide a conceptual mitigation plan to support the terrestrial ecology impacts analysis. The information provided must address the revised site layout.
TE4.3.1-5 10 CFR 51.71 (d)	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.	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.
TE4.3.1-6 10 CFR 51.71 (d)	Provide MDEQ data on overall acreage of existing inland wetlands and coastal wetlands and permitting data for Monroe County (see Table 4.3-1 of ER).	During the site audit, MDEQ indicated that they may have 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)	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. The ER did not contain detailed descriptions of construction impacts on terrestrial ecology for the transmission line corridor. These data are needed to complete the analysis to be presented in the EIS.

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TRANSMISSION LINES (TL)

RAI Number	Question Summary (RAI)	Full Text (supporting information)
TL4.1.2-1 ESRP 4.1.2 ESRP 5.1.2 10 CFR 51.71(d) 10 CFR 51, App. A(7)	Provide a description of construction, operation, and maintenance BMPs that would be applied to Fermi 3 transmission line corridors to the Milan substation.	In order to evaluate the impacts of transmission line construction, operation, and maintenance, a description of BMPs related to 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.
TL4.1.2-2 ESRP 4.1.2 ESRP 5.1.2 10 CFR 51.71(d) 10 CFR 51, App. A(7)	Provide a description of the routing process used to identify the proposed Fermi 3-to-Milan corridor.	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 lines for Fermi 2 in 1972. The methodology used to select the current proposed corridor route is needed.
TL4.1.2-3 ESRP 4.1.2 ESRP 5.1.2 10 CFR 51.71(d) 10 CFR 51, App. A(7)	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.

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TRANSPORTATION (TR)

RAI Number	Question Summary (RAI)	Full Text (supporting information)
TR4.8.3-1 EIS Section 4.8.3	Provide a list of the major types and quantities of construction 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.	This information provides the basis for estimation of the 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	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.
TR3.8-1 ESRP 3.8 10 CFR 51.52	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
TR3.8-2 ESRP 3.8 10 CFR 51.52	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.

Enclosure 1 (Continued)
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TRANSPORTATION (Continued)

RAI Number	Question Summary (RAI)	Full Text (supporting information)
TR3.8-3 ESRP 3.8 10 CFR 51.52	Provide estimates of the number of annual shipments of unirradiated fuel, irradiated fuel, and waste for comparison with the truck traffic density of less than 1 per day in 10 CFR 51.52 Table S-4. Include all supporting calculations.	Estimated number of radiological shipments to and from the facility must be evaluated per 10 CFR 51.52 requirements.
TR3.8-4 ESRP 3.8 10 CFR 51.52	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.

Enclosure 1 (Continued)
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TRANSPORTATION (Continued)

RAI Number	Question Summary (RAI)	Full Text (supporting information)
TR3.8-5 ESRP 3.8 ESRP 5.7.2 ESRP 7.4 10 CFR 51.52(b)	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.
TR7.4-1 ESRP 7.4	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.

Enclosure 2
U.S. Army Corps of Engineers (USACE) Requests for Additional Information (RAIs)
Fermi Nuclear Power Plant, Unit 3 (Fermi 3)
Combined License Application - Environmental Report

RAI Number	Question Summary (RAI)	Full Text (Supporting Information)
USACE-1 33 CFR Parts 320-330: Regulatory Programs of the Corps of Engineers ¹ Detroit District Corps permit evaluation document template ² 40 CFR Part 230-Section 404(b)(1) Guidelines for Specification of Disposal Sites for Dredged or Fill Material ¹	<p>Provide a review and evaluation of the probable impacts, including cumulative impacts, of the proposed activity and its intended use on the public interest (public concerns or rights). This review/evaluation should include supportive materials, including drawings, and references. This may be integrated with the Clean Water Act (CWA), Section 404(b)(1) Guidelines alternative analysis (see USACE-2).</p> <p>For public interest or other relevant factors that may also require review by statute (see CFR 320.3), include reference to the statute.</p>	<p>This information is necessary to allow comparison of existing conditions to proposed conditions relative to the public interest that may be affected by the construction, including indirect and cumulative impacts, and operation of the proposed project.</p> <p>A Department of the Army (DA) decision on whether to issue a Section 10 and/or 404 permit(s) is required to reflect the national concern for both protection and use of important resources. This is accomplished through a public interest review and evaluation conducted in accordance with the U.S. Army Corps of Engineers (Corps) General Policies for Evaluating Permit Applications found in 33 Code of Federal Regulations (CFR) Part 320.4. The Detroit District Corps incorporates the required public interest review, National Environmental Policy (NEPA) documentation, and if applicable, the factual and compliance determination according to the CWA Section 404(b)(1) Guideline (Guidelines) in a single permit evaluation document.</p>

¹ Available at: www.usace.army.mil/CECW/Pages/reg_materials.aspx

² Document provided as attachment to Enclosure 2.

Enclosure 2 (Continued)
Page 2 of 10

RAI Number	Question Summary (RAI)	Full Text (Supporting Information)
USACE-1a	<p>For the public interest factors listed in 33 CFR Part 320.4 (a)(1), as well as all other factors which may be relevant to the proposal and the cumulative effects thereof, include specific baseline condition descriptions of the characteristics, including all existing structures and fills located at or waterward of the Ordinary High Water Mark for Lake Erie (bulkhead, riprap, fencing, etc.) within the site boundaries, for each anticipated preconstruction, construction and operation direct, secondary or cumulative impact area attributable to permanent and temporary structures, including the intake pipe and outfall; dredging; and the discharge of dredged/fill material, and other work (exclusionary boundary) proposed in navigable waters of the US or would involve the discharge of dredged/fill in adjacent wetlands.</p>	<p>33 CFR Section 320.3 lists laws related to the Corps permit application evaluation.</p> <p>The public interest factors listed in 33 CFR Part 320.4(a)(1) include: conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish & wildlife values, flood hazard, floodplain values, land use, navigation, recreation, shore erosion and accretion, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership, and in general, the needs and welfare of the people.</p> <p>Specific Corps policy for perspective for certain public interest review factors are included in 33 CFR Parts 320.4 (b) through 320.4 (r).</p>
USACE-1b	<p>Include a discussion of the overall importance, development/loss status, etc, in western Lake Erie, of the most readily identifiable natural feature, as defined by the MDEQ (Michigan Department of Environmental Quality) & Michigan Natural Features Inventory (MNFI), in the context of the water of the US and adjacent wetlands in which these work areas are located.</p>	<p>MDEQ defines the wetlands on site to be affected by the project as Great Lakes coastal wetlands (letter to NRC, dated February 2, 2009). The Michigan Natural Features Inventory more specifically defines the wetlands as a Great Lakes Marsh natural community (http://web4.msue.msu.edu/mnfi/)</p>

Enclosure 2 (Continued)
Page 3 of 10

RAI Number	Question Summary (RAI)	Full Text (Supporting Information)
USACE-1c	For the public interest factors listed in 33 CFR Part 320.4 (a)(1), as well as all other factors which may be relevant to the proposal and the cumulative effects thereof, specify the type and magnitude of the direct, secondary and cumulative impacts attributable to the proposed work in navigable waters of the US and adjacent wetlands from the perspective of Corps policy.	Specific Corps policy for perspective for certain public interest review factors are included in 33 CFR Parts 320.4 (b) through 320.4 (r).
USACE-1d	Specifically relate proposed project activities to the type, location, and degree of unavoidable adjacent wetland and other water-related impacts and expand the discussion to include impacts on the values and functions of the water/wetlands types (regulatory) individually, as well as within the context of the coastal wetland resources of western Lake Erie. Include all aspects of the project including preconstruction, construction and temporary work.	The Corps regulations (33 CFR Part 320.4(b)) recognize that some (but not necessarily all) wetlands perform functions important to the public interest (see 33 CFR Part 320.4(b)(2)). When alteration of wetlands considered to have important functions is proposed, documentation should be as specific as possible about how the functional importance (or lack of functional importance) of the wetland was determined. Statements such as, "this type of wetland is known generically to be important" (or unimportant) are not adequate and need to be augmented with more specific information, including the incremental contribution of the area in question to the whole. Documentation of value and importance should be objective and factual.

Enclosure 2 (Continued)
Page 4 of 10

RAI Number	Question Summary (RAI)	Full Text (Supporting Information)
USACE-1e	<p>Include discussion of on-site project modifications to minimize temporary and permanent fill discharges into waters of the US and adjacent wetlands, including how alternate on-site locations, changes in configuration, construction methods, technologies, work scheduling, etc. were considered to minimize damage to waters of the US and adjacent wetlands. Show the method to estimate the environmental consequences of each modification plan, and narrative showing the quantities of fill for the proposed plan is the minimum amount practicable. Conceptually, describe how compensation for unavoidable short term and long term water of the US and adjacent wetland losses will be accomplished and/or why compensatory mitigation should not be required for all or specific aquatic impacts.</p>	<p>The Guidelines and 33 CFR Part 332 project review progresses through a sequence of avoidance, minimization, and then compensation for project impacts. Compensatory mitigation is required for unavoidable wetland resource losses which remain after minimization. A conceptual mitigation plan is a necessary component of the 404 permit review process. However, a DA 404 permit cannot be authorized on the basis of a conceptual plan; a final mitigation plan must be reviewed and approved prior to DA permit issuance</p>
USACE-1f	<p>Describe any special practices or conditions proposed to minimize detrimental project effects, what impact would be reduced, the magnitude of the reduction and how the condition or practice would reduce the impact.</p>	<p>Any special practices or conditions proposed to minimize impacts should be limited to those necessary to comply with Federal law (relative to Corps authorities), while affording the appropriate and practicable environmental protection, including offsetting aquatic impacts with compensatory mitigation. The special conditions must be sufficiently justified and substantially related to impact issues raised in the public interest review process or specifically requested/offered by the applicant. 33 CFR Parts 320.1 and 320.2 describe the types of activities regulated by the Corps and authorities to issue permits and Part 320.3 lists laws related to the Corps permit program.</p>

Enclosure 2 (Continued)
Page 5 of 10

RAI Number	Question Summary (RAI)	Full Text (Supporting Information)
USACE-1g	<p>Provide figure(s) showing project location, footprint and type of permanent and temporary construction impact in relation to wetland type/other water. These figures should reflect any updates to the proposed project features and work since the ER, if available.</p> <p>Include project description that summarizes the anticipated construction sequence and equipment use, specific types of work and/or structures(including proposed barge channel dredging, barge docking facilities, turbidity containment, intake and pipeline discharge systems and Exclusion Area Boundary), work and structure locations, approximate work and/or structure dimensions, and approximate acreage/square footage and approximate quantities for all dredged/fill discharge areas, associated with all preconstruction, construction and temporary activities/features and best management practices, proposed waterward of the Ordinary High Water Mark of Lake Erie and adjacent wetlands. The project description should include 8-1/2" x 11' figures depicting the existing site conditions (including the Exclusion Area Boundary, existing dredging/disposal area, shoreline structures, natural features, etc.) as described in the baseline condition description and proposed site footprint, as described in the project description, in both plan-view and cross-sectional views. Include anticipated dredging/fill areas and structures, temporary work areas, stockpile/disposal site, roads and structures, and Exclusion Area Boundary. These figures should reflect any updates to the proposed project features and work since the Environmental Report, if available.</p>	<p>Discussion at the site audit indicated that there may be changes to the proposed locations of project features and work. Any specific design information or updates not currently available should be included in the application for DA Section 10 and 404 permits.</p>

Enclosure 2 (Continued)
Page 6 of 10

RAI Number	Question Summary (RAI)	Full Text (Supporting Information)
USACE-1h	Incorporate consideration of the general criteria listed in 33 CFR Part 320.4(a)(2) in the evaluation.	The public interest review includes consideration of public and private needs, alternatives, and impacts, known as General Criteria, as discussed in 33 CFR Part 320.4 (a)(2): The relative extent of the public and private need for the proposed structure or work; where there are unresolved conflicts as to the use of the resource, whether there are practicable alternate locations and methods to accomplish the objective of the proposed structures and/or work; and the extent and permanence of the beneficial and/or detrimental effects the proposed structure or work is likely to have on the public and private uses to which the area is suited.
USACE-1i	Use following significance levels to describe direct, secondary and cumulative impacts: short term/long minimal; short term/long term minor, short term/long term major, in the evaluation, as appropriate.	See Detroit District Corps permit evaluation document template.
USACE-1j	Include all supportive records and drawings, as attachments, used to document the public interest evaluation, including baseline conditions, impacts, and special practices/conditions.	The Public Interest review/evaluation should be a "stand alone" document and include all drawings and supportive documentation. It can be integrated with the Section 404(b)(1) Alternative Analysis (see USACE-2) to avoid duplication.

Enclosure 2 (Continued)
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RAI Number	Question Summary (RAI)	Full Text (Supporting Information)
USACE-2	Provide a Section 404 (b)(1) Guidelines Alternative Analysis Package. A suggested list and order of topics to be discussed and presented in the package is provided below. This alternative analysis should include supportive materials, including drawings, and references. This may be integrated with the Public Interest Review/Evaluation (see USACE-1).	<p>The purpose of the Section 404(b)(1) Guidelines alternative analysis package is to demonstrate that the proposed plan satisfies the CWA Section 404(b)(1) Guidelines (40 CFR Part 230), which are the substantive criteria the Corps will use in determining the project's environmental impact on aquatic resources from discharges of dredged or fill material.</p> <p>A DA Section 404 permit is necessary to construct any project involving the discharge of dredged or fill material into waters of the US. The Corps must ensure that the activity complies with the Guidelines as one step in its evaluation process. Among other things, an applicant for a 404 permit must demonstrate to the Corps that the Proposed Project is the least environmentally damaging practicable alternative (LEDPA). The LEDPA is determined by the preparation of a Section 404(b)(1) Guidelines Alternatives Analysis.</p>
USACE-2a 33 CFR Part 332, Compensatory Mitigation for Losses of Aquatic Resources ¹	<u>Project Description/Purpose & Need:</u> Provide narrative that includes project description and clarification of Detroit Edison Company's basic purpose and need for the project. Why is the project proposed? Include narrative information on marketing, location, history, and other factors that influence or constrain the nature, size, price, class, or other characteristic of the project.	<p>Consideration of project purpose is important element of the Guidelines evaluation. Consideration of project need is a requirement of every Corps permit evaluation (33 CFR Part 320.4(a)(2)(i)). The Corps will consider the applicant's stated purpose (: "...to generate electricity for sale" but will define the overall purpose. Overall project purpose is the basis for the alternative analysis and determined solely by the Corps. It will be reviewed and redefined, if necessary, since it may change or need to be revised as the result of project review.</p> <p>The overall project purpose includes the public and/or applicant's needs. It does not include</p>

Enclosure 2 (Continued)
Page 8 of 10

RAI Number	Question Summary (RAI)	Full Text (Supporting Information)
		<p>secondary project purposes, site-specific secondary requirements, project amenities, desired size requirements or desired return on investment. Based on the information provided in the ER, the overall project purpose, as determined by the Corps, would reflect a statement such as: Add baseload electric generating capacity to address current and future peak electricity demand in the Detroit Edison Company service area.</p> <p>At this point, it is necessary to consider ways to achieve the overall project purpose which would avoid discharges in wetlands by analyzing all practicable alternatives to the proposed discharge in wetlands. The Guidelines define a practicable alternative as one which "is available and capable of being done after taking into consideration cost, existing technology and logistics in light of overall project purpose." Further guidance is available in 40 CFR Part 230.10(a)(2).</p> <p>The consideration should include use of offsite areas which can be reasonably obtained, utilized, expanded or managed in order to fulfill the overall project purpose. The Corps and US Environmental Protection Agency (USEPA) Memorandum of Agreement (MOA) requires the 404 review of practicable alternatives to progress through a mitigation sequence of avoidance, minimization, and then compensation for project impacts, which is now codified as Corps and USEPA regulations (33 CFR Parts 325 & 332; 40 CFR Part 230, Compensatory Mitigation for Losses of Aquatic Resource; Final Rule, dated April 10, 2008).</p>

Enclosure 2 (Continued)
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RAI Number	Question Summary (RAI)	Full Text (Supporting Information)
USACE-2b	<p><u>Avoidance.</u> Include (1) a set of criteria to determine practicability for alternative site selection; (2) a definition of the geographic limits to search for alternative sites; (3) the cost of creating a complete project at each site; (4) an analysis of impacts of candidate sites on Corps public interest factors, including quantification of aquatic impacts relative to the aquatic site function and values; and (5) a system to rate an alternative site against the criteria items and a method to comparatively weigh each rating ; 6) a report describing the search for the sites, their rating, and narrative of the rationale for selecting the proposed plans as the least environmentally damaging practicable alternative. The alternative analysis must clearly and fully show that the proposed site and site plan is the least environmentally damaging or the only practicable alternative; that it <u>must</u> be located on the wetland and that the project <u>could not</u> be changed to a non-wetland location. The report must include the rating and narrative for the proposed Site Plan as well as for the “No Project (use existing facilities)” alternative. If cost is used to show that an alternative is not practicable, then no additional analysis is necessary. If cost is used to show that one option is more expensive than the preferred alternative, then total cost comparison between alternatives should be completed to prove this statement. Included with the cost comparisons are all aspects of project completion. Note that the criteria are predicated on the project’s purpose.</p>	<p>Avoidance (Step 1): involves a look at other geographic sites to determine the least environmentally damaging practicable site (LEDPA):</p> <ul style="list-style-type: none"> • Only practicable alternatives to the proposed plan need to be considered in determining the LEDPA. • Upland sites are presumed to be available unless clearly demonstrated otherwise by the applicant. <p>Note that an expansion of the alternatives originally considered in the ER may be necessary for the Guidelines analysis. Compensation cannot be used to reduce impacts to satisfy avoidance.</p> <p>The Corps will seek avoidance first.</p> <p>The 404 alternative analyses will need to continue for each practicable alternative until it is proven that it is not a practicable alternative, or that it has more impacts (quantified) to aquatic resources than the Proposed Plan. If alternative practicability continues, off-site alternatives (away from the Fermi 3 site, which may include a site not owned by the applicant,) will need to be included within the evaluation for the impacts to waters of the U.S.</p>

Enclosure 2 (Continued)
Page 10 of 10

RAI Number	Question Summary (RAI)	Full Text (Supporting Information)
USACE-2c	<p><u>Minimization</u>. Include (1) alternate site plans; (2) a method to estimate the environmental consequences of each plan; and, (3) a narrative that shows the quantity of fill is the minimum amount practicable. Minimization must be shown for each of the alternate sites in the analysis of avoidance.</p>	<p>Minimization (Step 2): If the “avoidance” presumption is overcome, the next step is to analyze all practicable alternatives which minimize damages to wetlands within a practicable site. Minimization involves a look at on-site reconfiguration of the project, implementation of special operating procedures, or other actions to reduce impacts. Project modifications to minimize adverse impacts may include a reduction in scope or size, change in construction methods, or the use of other methods that reflect sensitivity to the environment.</p>
USACE-2d	<p>Include all supportive records and drawings, as attachments, used to document the Section 404(b)(1) Alternative Analysis.</p>	<p>The Section (404(b)(1) Alternatives Analysis should be a “stand alone” document and include all drawings and supportive documentation. It can be integrated with the Public Interest review/evaluation (see USACE-1) to avoid duplication.</p>

Detroit District
U.S. Army Corps of Engineers

File Number #FOLDER_DA_NUMBER#<<MODIFIER>>

Department of the Army Permit Evaluation
#FOLDER_NAME#

This document constitutes my Environmental Assessment, Public Interest review summary, and, if applicable, my factual and compliance determination according to the 404(b)(1) Guidelines for the work proposed for permit. It was prepared from a generic master document that facilitated consideration of the range of all possible impacts from projects within the purview of the Regulatory Program of the Army Corps of Engineers, in accordance with 33 CFR Part 320, 33 CFR Part 325 Appendices B and C, and 40 CFR Part 230.

I. Application Processing

A. Name of Applicant: #APPLICANT_FULLNAME#, #APPLICANT_CITY# , #APPLICANT_STATE_FULL# You may add names of agents if their names will come up in the summary of correspondence.

B. Work Description: The most recent plans showing the proposed work are attached (Encl. 1.). The applicant has applied for a Department of the Army (DA) permit to ##ENVA## This should be the project as it is proposed today. It may have been changed by the applicant since the public notice was issued, it may have been modified by the state permit decision, etc. If it has changed from what appeared on the public notice, so state, enclose the public notice as encl. 2; and briefly summarize changes.

C. Purpose:

The applicant's stated purpose for the work is /. We are responsible to define the purpose and need in accordance with NEPA Regulations (Appendix B, 7.), the objective of the project (33 CFR 320.4(a)(2)(ii), and the "overall project purpose" under the 404(b)(1) Guidelines and subsequent guidance. We have determined that the reason why the applicant proposes to conduct the DA permit activities described above is /The purpose underlies the search for practicable alternatives. The purpose is not the proposed structure or work itself; it is why the applicant feels a need for it, what it will do for them. If described too broadly, the applicant will have unlimited alternatives to fulfill the purpose other than what he currently proposes. If defined too narrowly, there would be no alternative other than his preferred one.

D. We are reviewing this application for a Department of the Army permit under authority delegated to the District Engineer by the Secretary of the Army and the Chief of Engineers by Title 33, Code of Federal Regulations, Part 325.8, pursuant to Section 10 of the Rivers and Harbors Act, /and Section 404 of the Clean Water Act.

E. Public Involvement: A list of the agencies, interested groups, and the public consulted regarding the project is attached to the Public Notice dated #ACTION_DATE_OF_PUBLIC_NOTICE# which expired on «DATE_PN_ENDS» (Encl. /).

F. Federal, State, Local, and Public Comments Relating to the Activity:

1. Federal:

a. U.S. Environmental Protection Agency (EPA):

Did not respond to the public notice.

Contemplated no action in response to the public notice (Encl. /).

Objected to the proposed permit based on non-compliance with the 404(b)(1) Guidelines (Encl. /). The impacts and issues which they addressed, any rebuttals from the applicant, and our ultimate determination will be summarized in appropriate sections of our evaluation below.

b. U.S. Fish and Wildlife Service (FWS):

Did not respond to the public notice.

Contemplated no action in response to the public notice (Encl. /)

Indicated that they do not object to the proposed permit (Encl. /).

Object to the proposed permit based on anticipated impacts to fish and wildlife resources (Encl. /). The impacts and issues which they addressed, any response or rebuttals from the applicant, and our ultimate determination will be summarized in appropriate sections of our evaluation below.

c. Congressional: No interest was expressed by any member of Congress.

2. State:

If location state Michigan and AUTH = 404##a. Section 401 Water Quality Certification:

Certification is presumed to be waived because the Michigan Department of Environmental Quality (MDEQ) has issued their respective permit for the project. (Encl.).pursuant to a letter dated 9 July 82 from the District Engineer to the Director of the Michigan Department of Environmental Quality (MDEQ), since 30 days have elapsed since the public notice issuance date, we have received no response, and have no written indication of their position on the application.

a. Coastal Zone Management Act:

The MDEQ did not respond to the Public Notice. Therefore, we presume that the proposal is consistent under Section 307 of the 1972 Coastal Zone Management Act, and that CZM Certification has been obtained or waived because they have issued their respective permit for the proposal /based upon the letter dated 9 July 82 cited above.

b. MDEQ issued a permit as proposed to the applicant (Encl.).

The Michigan Department of Environmental Quality (MDEQ) denied the permit request, and we cannot presume Coastal Zone Management Consistency nor Section 401 Water Quality Certification for the proposed unauthorized work (Encl.).

c. State Historic Preservation Officer (SHPO):

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If location state Indiana and AUTH = 404##a. Section 401 Water Quality Certification:

An extension of the comment period was requested (Encl.). Certification is presumed to be waived since 30 days have elapsed since the public notice requesting certification was sent to the Indiana Department of Environmental Management (IDEM). We determine that this has been a reasonable time for IDEM to act. The Indiana Department of Environmental Management (IDEM) has denied Certification and Objected to issuance of a permit and cited the following as the basis of their position (Encl.):

a. The Indiana Department of Natural Resources (IDNR)Choose one of these statements.:
has issued a permit for the activity under their respective state statutes (Encl.).

objected to issuance of a permit (Encl.), citing the following as the basis of their position:

b. State Historic Preservation Officer (SHPO): Indicated no known historical, architectural, or archaeological sites listed on or eligible for inclusion in the National Register of Historic Places would be affected by the project (Encl.).

Requested an archaeological /

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3. Local: No local governmental officials responded to the public notice.

4. Public: No nongovernmental groups or individuals responded to the public notice.

We received objection comment letters from /

We received requests for a public hearing from /

We received positive comment letters from /List the authors by name and Enclosure reference. We will summarize and evaluate the comments under appropriate aspects of the Environmental Setting in Section II and/or specific public interest review factors in Section III below.

G. List of communications with the applicant relative to permit evaluation:

We furnished the applicant with copies of all substantive objections, and afforded him/her the opportunity to resolve or rebut them (Encl.).

We directed the applicant to specifically respond to certain issues (Encl.).

We have received no response or rebuttal.

The applicant responded to the objections/comments by letter dated / (Encl.). We will summarize the issues and responses under appropriate sections below.

II. Environmental Setting:

There may be a "stock" description of the general area and waterway characteristics within about a 10-50 mile radius of your site. If you can't find one on the "O:\LTDR\Templates\INSERTS\IMPACTS" drive , create or update one, share the wealth. To look at the available choices, select INSERT, FILE, "O:\LTDR\Templates\INSERTS\IMPACTS" Drive. Scroll thru the list covering the county of your site. The waterway and/or particular location within or along a waterway should be named with a waterway number and/or an abbreviation after the hyphen. Place the cursor bar over the name and hit return to "look" at it. If you want to use it, you can "retrieve" it into your document. If there is no description and you write a new one or use an old one reserved off somewhere, ADD IT TO THIS DIRECTORY within the naming convention above. A. Description of the Area Name and location of the waterway and county of project area, area land use, major economic activity in county and local community, population, growth trends, uses of natural resources, topography, geological setting.

B. Waterway Characteristics Flows, flooding characteristics, water fluctuations, shoreline characteristics such as extent and type of human development, erosion potential, fetch, water quality, existing wetlands and/or other relevant information.

C. Scope of Analysis: In addition to the activities which require specific DA authorization, the scope of analysis for this evaluation will include construction activities such as / use of the finished / associated / The DA permit activities under consideration are so strongly linked to these activities and effects as to control and cause them. For definition of action area, see Standard Operating Procedures, October 15, 1999, (SOP) Part I, Para. 1. If there were comments that raised issues that are not relevant to Corps jurisdiction or exceed the scope of the project under consideration, address these comments (SOP, pages 15,16). Where there have been conflicting opinions between

commenters (including FWS and EPA), the applicant, and this office regarding the scope of analysis, summarize the arguments and draw a conclusion to carry forward. Use the format:

Commenters' points:

Applicant's response/rebuttal:

Corps Findings.

D. Action Areas When we have received comments on the nature of the affected environment, identify the comments, examine them, and provide our independent conclusion here under the characteristic in question. Use the format:

Commenters' points:

Applicant's response/rebuttal:

Corps Findings:\:

We did not perform a site inspection.

We inspected the site. See Encl. /If you did a complete inspection with the Permit Evaluation Report form completely filled out, and there were no conflicts about resources in the action areas, there should be no need to complete the rest of this project area description which contains identical details. Please just delete it or supplement it if this is necessary\.

The project site is located /. The disposal site is located / Cite the source(s) for all information detailed below.

1. Cultural Characteristics: Presently, structures on the site consist of /. The site is bordered by /. On these sites, structures and development consists of /. Lying just beyond these properties are areas that could be characterized as /.

2. Navigation Characteristics: The constraints and existing use patterns within the proposed work or structure area are as follows Provide all relevant measurements of the waterway, such as limiting widths and depths, navigation patterns, space requirements for each of the maneuvers performed by existing boat traffic along the routes, moorage, numbers and size of craft that pass the site, etc.:

3. Physical/Chemical Characteristics Include any comments on water quality, floodplains, etc. from government agencies with attribution to them.\:

The proposed permit area is subject to erosion/flooding due to /. There is no evidence of any existing erosion problem/flood damage at the site.

Wetlands located / are likely to provide erosion prevention/flood storage due to the fact that they /.

Water from / presently circulates through/over the proposed work area by means of /, and the nearest receiving water for runoff from the up-gradient portions of the site is /. Wetlands located / are likely to provide groundwater discharge/sediment removal/transformation/production export due to the fact that they /.

Soils within the proposed discharge/excavation area consist of /. Sediments and physical substrate of the bottom in the offshore proposed / area consist of /.

4. Biological Characteristics:

a. The Existing/Long term Vegetation and Habitat Values for each portion of the work site are as follows Include any comments on habitat from FWS, MDNR, or other agency with attribution to them. Although all areas should be described, specifically describe the characteristics of those areas where each respective type of proposed work would be conducted, such as dredge area, bulkhead area, etc. At a minimum, areas and sub-areas should each

be described as an ecological community type with plants and animal species and habitat values typically associated with the community. Preferrably, this can be augmented with lists of species actually observed and likely to exist there. For sites with disturbed vegetation, describe the likely climax community given the surroundings. For sites with ATF work, describe probable prior and post-restored community.:

Upland portions of the property These are the portions of the property that are within the action area determined by the scope of analysis that you described in II.C. above:

Wetland portions of the property: The wetlands located / are likely to provide functions of wildlife diversity/abundance
 aquatic diversity/abundance
 due to the fact that /

Riparian portions of the property (at the water's edge):

Benthos community: The proposed / area provides substrates of /, which support /.

Water Column Include any potential for use when water levels are occasionally elevated and afford access to fish and other aquatic organisms, as well as any areas that provide seasonal ponding. Also include any known spawning runs cited on the listing of DNR preferred dredging periods.: The proposed / area provides a habitat for / .

b. What is the most readily identifiable natural feature in which this site is located? What is state of development of this natural feature?: This would be the "reality check" you would use to explain to the Commander just how important-or unimportant- this site is and forms the basic perspective for ecological impacts of the cumulative impact review contained in Section III.B below. Depending on circumstances, describe how particular features may form a part of a continuum with adjacent areas on other properties, such as an identified wetland complex, a forest, submerged plant bed, shallow shelf, etc. and/or how the site may be a refuge and/or contribute to ecological diversity within the general area. It is also very important to describe the extent or absence of natural conditions of this continuum or, conversely, the state of development or loss of this continuum. For example, is this the last lot in an otherwise completely developed subdivision or is it the first proposed lot development in a completely natural forested wetland complex?:

E. Cumulative Impact Area (CIA): For the purpose of this application review, the geographic area for which we are reviewing cumulative effects is / Define a watershed, lake area, bay, or other readily identifiable geographic area. The area should include the immediate area of the permitted activity and a reasonable distance away in the associated aquatic area that you described in part II.B. and/or part II.D.4.b. above. The type of project epitomized by this application is / Define the scope of work and type of project for assessment of similar projects that have or would be expected to occur in the area. Include all attendant aspects of this project such as presence or absence of mitigation measures. Within this area, similar projects and permit decisions on them have included

File No.	Applicant	Extent or Size of Project	Action

There have been very minor prior impacts to this area and we expect little additional cumulative impact of any kind to occur.

This is a unique proposal and/or factual situation. This is because it /. Therefore, we don't expect other similar applications, and therefore no cumulative impact. If this is the case, "find" all other occurrences of cumulative impact statements in the rest of the document (Except for the summary statement in part III.D.) and delete these statements now, so you don't have to do it later.

This project continues an established pattern of similar projects in the cumulative impact area defined above. We will consider the cumulative impact of continuing this development.

The anticipated future activities within the CIA include / WRITE A LOT. Evidence of the likelihood of this activity is / WRITE A LOT AND ENCLOSE EVIDENCE. The impact sites and scopes for these reasonably foreseeable projects are similar to this project's site and scope with regard to /. Since the District strives for fair and consistent permit decisions, it would be contrary to policy and arbitrary to foresee a different permit decision for any similar projects within the CIA. The CIA would thus be subject to current and anticipated impacts comprising /PROVIDE CREDIBLE ESTIMATE OF AGGREGATE FOOTPRINT OR QUANTITY OF IMPACTS/ We will evaluate those impacts below.

III. Environmental Impacts of the Proposed Action For cases where there are public notice comments and/or applicant's responses to issues that we've posed, summarize them under each of the appropriate review factors below using the format as below under the Water Quality factor. Unless the identity of the commenter is really useful for the purpose of analysis, such as a particular neighbor or a government agency, it is not necessary to attribute specific comments to individuals; the substance of the comment is what must be documented and evaluated. However, clearly attribute and detail coordination and evaluation of comments by local government or an agency such as FWS, EPA, SHPO, etc. when this is required by regulations, MOA, statute, etc.

A. Identified Physical Impacts

1. Effects on Water Quality

a. Construction Impacts:

Commenters' points:

Applicant's response/rebuttal:

Corps Findings

The physical disturbance of the bottom during / will cause resuspension of sediments at the point of disturbance and for a limited radius around it. This will cause reduction of dissolved oxygen levels
reintroduction of soluble contaminants in the sediments
reintroduction of particulates and adsorbed contaminants
in the water column.

The dredged material will be transported by barge. There will be releases of sediment to the surrounding waterbodies during dredging at the dredge area, along the route to offloading, and at the offloading point. Onshore handling and disposal areas for the material will be sources of runoff of the sediment until the areas are stabilized.

The dredged material will be transported by slurry pipeline. Construction of the contained disposal facility will

cause runoff of dike construction materials and native soils to the waterway. The overflow system as designed is/not sufficient to remove suspended materials so that effluent to the waterway will/not exceed background levels of contaminants and suspended materials.

The temporary construction discharge of dredged/fill material into the water will consist of materials that are/not of sufficient grain size and inertness so as to cause more than minor adverse impacts on water quality.

The methods and/or materials used in the backfill process would/not minimize turbidity. Alternative methods and/or materials could include /.

All project-associated excavated, graded, and filled areas would be subject to erosion, thereby causing negative impacts to water quality until the areas are stabilized.

In summary, the proposed / would cause minor/major temporary degradation of water quality. Due to the nature of the sediments the velocity of the water current, turbidity / contaminants should return to ambient levels following project completion.

In order to minimize the detrimental impacts due to / Name which impacts and which activities you mentioned above, the permit could be conditioned to require use of silt curtains in the water column around the work area and adequate containment and stabilization measures for upland work and equipment use areas, and / any modifications or conditions must be clearly linked to specific impacts that you have written about above. You need to write how or why these modifications or conditions will remedy these specific problems. The project could be modified by /. These measures will reduce the impacts due to / by capturing/confining suspended sediment prior to its dispersal.

b. Post-Construction and Use Impacts:

Commenters' points:

Applicant's response/rebuttal:

Corps Findings:

The proposed / would destroy/adversely impact an area that filters rainfall, runoff, groundwater, and floodwaters that would otherwise directly enter the waterway, and would replace it with a new source area for runoff pollutants. Pollutants from this area may include lawn fertilizers, herbicides, pesticides, road salt, oil, grease, and septic runoff/leachate. This would cause a long-term negative impact on water quality.

Dredging/excavation will expose surfaces of contaminated material that will cause major/minor long term adverse impacts on water quality within the associated mixing zone.

The proposed / will induce increased boater use of the area, which will in turn cause water quality degradation due to gasoline and oil spills, littering, and increased turbidity because of propeller wash. bank sloughing and increased turbidity.

Deflection of wave energy off the face of the proposed bulkhead will continuously resuspend sediments at its toe and increase erosion of other unprotected shorelines, increasing the turbidity in the shoreline area.

Installation of the / will afford better sewage treatment with a long term benefit to water quality.

The / will have adverse impacts to groundwater quality by /.

The cumulative impacts of numerous such projects would /

The cumulative impact of similar channelization reductions of riparian vegetation along the waterway will cause minor/major adverse impacts to water chemistry, temperature, and turbidity.

Destruction of wetlands/vegetated shallows by / will remove their buffering/cleansing ability. Numerous projects such as this could seriously reduce water quality, habitat, and overall value of the cumulative impact area.

Overall, the operation and use of the proposed activity would have a major/minor, long term, positive/negative impact on water quality.

Denial of the permit would avoid these minor/major positive/negative impacts to water quality any modifications or conditions must be clearly linked to specific impacts that you have written about above. You need to write how or why these modifications or conditions will remedy these specific problems.

The project could be modified by /. This would reduce the impacts due to / by /

A permit could be issued with special conditions as follows:

This would reduce the impacts due to / by / If you found positive impacts as well as negative impacts on this factor, examine whether denial or any modifications or conditions that you've derived here will change or eliminate positive impacts to this factor

2. Shore Erosion and Accretion Effects:

Commenters' points:

Applicant's response/rebuttal:

Corps Findings:

The proposed activity would cause noticeable accretion/erosion along adjacent/downriver areas. See attached review performed by the Great Lakes Hydraulics and Hydrology Branch (Encl.).

Deflection of waves against the proposed bulkhead will increase the wave climate and energy to which adjacent unprotected areas will be subject.

The proposed activity could alleviate or reduce erosion in the project area This should be a net change based on existing conditions, not on what will be needed as a result of another proposed portion of the project.

The project would not be expected to accelerate erosion on the property or along adjacent properties.

Shoreline erosion may increase due to boat wakes. Unprotected areas could be affected.

The project would reduce the ability of the wetland to act as a sediment catch basin.

would reduce the ability of the wetland to anchor the shoreline and dissipate erosive forces.
would eliminate wetlands/shallow backwaters which presently allow sediment trapping functions.
would cause sedimentation of a riffle and pool complex.
will cause changes in current patterns and accretion and adversely impact nearby mudflats.

The cumulative impacts of numerous such projects on shore erosion and accretion would /

The continued bulkheading of the shoreline could cause a reduction in beach nourishment material and result in attendant downdrift problems (e.g. starvation, increased erosion, etc.)

In summary, the project will have no impacts on erosion or accretion.

In summary, the project will have minor/major, short term/long term, positive/negative impacts on erosion/accretion.

Denial of the permit would avoid these minor/major positive/negative impacts on shore erosion and/or accretion. any modifications or conditions must be clearly linked to specific impacts that you have written about above. You need to write how or why these modifications or conditions will remedy these specific problems. The project could be modified by /. This would reduce the impacts due to / by /

A permit could be issued with special conditions as follows:

This would reduce the impacts due to / by / If you found positive impacts as well as negative impacts on this factor, examine whether denial or any modifications or conditions that you've derived here will change or eliminate positive impacts to this factor

3. Effects on Flood Hazards and Floodplain Values:

Commenters' points:

Applicant's response/rebuttal:

Corps Findings:

The proposed work will take place in an area where water levels are solely under static level control of the Great Lakes. The volume of this contiguous water system is so vast that this project and cumulative similar projects will not induce any measurable change in the system's water level behavior. No impacts on flood hazards and floodplain values are expected.

The proposed fill will disrupt existing drainage patterns across the site and shunt runoff onto neighboring lower properties.

The proposed / would increase the hydraulic efficiency of the channel by /. This will contribute to increasing downstream flood peaks and reduce desynchronization of flood flows, while decreasing flood peaks on site and upstream.

The proposed / will decrease the hydraulic efficiency of the channel by encroachment on the floodplain creating obstructions to floodwaters and drifting materials. This will contribute to increased upstream flood peaks, while decreasing flood peaks downstream.

The proposed / will decrease floodplain values by replacing / cubic yards of floodplain storage volume with / cubic yards of fill material

eliminating natural floodplain vegetation and reducing the roughness coefficient which will increase flood peaks downstream. As such, the work would be contrary to Executive Order 11988.

The proposed project would aid in the prevention of flooding for the applicant. encourage the applicant to invest in an area which would be/is subject to flooding conditions.

The cumulative impacts of numerous such projects on flood hazards would be/

In summary, the project will have no impacts on flood hazards and floodplain values.

In summary, the project will have minor/major, short term/long term, positive/negative impacts on flood hazards and floodplain values.

Denial of the permit would avoid these minor/major positive/negative impacts on flood hazards and/or floodplain values.

any modifications or conditions must be clearly linked to specific impacts that you have written about above. You need to write how or why these modifications or conditions will remedy these specific problems. The project could be modified by /. This would reduce the impacts due to / by /

A permit could be issued with special conditions as follows:

This would reduce the impacts due to / by / If you found positive impacts as well as negative impacts on this factor, examine whether denial or any modifications or conditions that you've derived here will change or eliminate positive impacts to this factor

4. Effects on Navigation This is a public interest factor. Only view the proposal from this perspective for this factor

Commenters' points:

Applicant's response/rebuttal:

Corps Findings:

No impacts would be expected.

During construction, the equipment and temporary structures will cause an obstruction to navigation. The equipment includes
barges
hydraulic dredging slurry pipelines
cofferdams
haul roads.

The proposed work and structure would extend into/interfere with a Federal channel. See attached comments from Operations & Maintenance Branch.

The proposed work/structure/use of the finished structure would increase congestion through an increase in the number of boats in the area.
restrict/expand the navigation area within the channel/harbor/lake.
cause a situation in which views of boating traffic would be obstructed.
facilitate safe boat movement/moorage.
Because of this, the work/structure/use of the structure will cause minor/major positive/negative adverse impacts on

public boating use and safety.

A riparian owner has a general right of access to navigable waters of the United States. This is subject to the similar rights of access held by nearby riparian landowners and to the general public's right of navigation on the water surface.

Provide a rationale as to how the circumstances fit the terms and principles of the policy stated above. For this situation, define what constitutes "riparian," "similar rights of access," "interference," "undue (or "due")," "use"? We have documented the existing navigation use and constraints in Section II.D.2. above. The work/structure/use of the structure would result in

the applicant's structure/boats having to be moored/approach/extend into the area used by/
into an area that will/not constrict/be incompatible with/ the available navigation area for the maneuvers that we have listed. This constriction will
not cause undue interference with access to, or use of, navigable waters by nearby riparian owners nor by the general public.
cause undue interference with access to, or use of navigable waters by the
public/nearby riparian owner because /

If nearby property owners were to desire and be issued a comparable permit, this would/not obstruct navigation within and access to the waterway. Therefore, the cumulative impacts of numerous such projects would/

In summary, the project will have minor/major, short term/long term, positive/negative impacts on navigation.

Denial of the permit would avoid these minor/major positive/negative impacts on navigation.
any modifications or conditions must be clearly linked to specific impacts that you have written about above. You need to write how or why these modifications or conditions will remedy these specific problems. The project could be modified by /. This would reduce the impacts due to / by /

A permit could be issued with special conditions as follows:

This would reduce the impacts due to / by / If you found positive impacts as well as negative impacts on this factor, examine whether denial or any modifications or conditions that you've derived here will change or eliminate positive impacts to this factor\\

5. Water Supply and Conservation

No impacts would be expected. There are no water intakes in the area likely to be affected, and we anticipate no impacts to any drinking water aquifer.

B. Identified Biotic Impacts

1. Effects on Aquatic Organisms (Fish, invertebrates, submerged vegetation, plankton, etc. documented in II.D. above)

Commenters' points:

Applicant's response/rebuttal:

Corps Findings:

The proposed activity would eliminate/alter submersed and emergent aquatic vegetation beds and associated invertebrates.

However, similar beds would remain in nearby areas, and similar plants and invertebrates would be expected to

recolonize the work area.

No recolonization by rooted aquatic plants is expected because /

Increase in nutrients due to the project will favor algae growth over rooted aquatic vegetation, causing a shift in the rest of the aquatic community.

Dredging would reduce diversity in the benthic community. Although recolonization does take place within 3 to 1 2 months after dredging via recruitment from adjacent unaffected areas, species' composition and diversity are usually not the same after dredging. In addition to the initial and likely maintenance dredging, there will be more frequent disturbance by propellers and deflected wave energy. Organisms recolonizing disturbed sites are usually limited to opportunistic species tolerant of habitat disturbance.

After construction, the physical conditions will be dissimilar to what currently exists in terms of substrate type and particle size/temperatures/current patterns/hydroperiod, so the original benthos community is unlikely to reestablish.

Some benthic communities, sedentary life stages, and eggs would be directly buried by removed by subject to smothering from sedimentation due to the proposed activity and slumping of material along the margins of construction.

The turbidity caused by runoff from the construction site dredging the in-water construction activities may reduce photosynthesis, clog gills of fish and other animals, reduce visibility for sight feeding animals, and may cause fish to relocate from the immediate area until work is completed.

The release of contaminants to the ecosystem due to the project will adversely affect adults, juveniles, larvae, and eggs of aquatic organisms, including fish utilized by recreational or commercial fisheries.

The project would destroy fish and their spawning, nursery, and feeding habitat, including species utilized in recreational or commercial fisheries. The project could impede fish movement into and out of spawning, nursery, or feeding areas.

Work should be avoided during the period / through /. If location state Michigan## (Refer to the listing of "Preferred Dredging Periods" furnished by the Fisheries Division, MDEQ.) ##

There would be a reduction in existing cover due to dredging, in that existing bottom unevenness (i.e., holes) which might provide cover for fish and contribute habitat diversity would be eliminated, as would artificial or natural cover objects such as boulders and large rocks, sunken snags, debris, etc.

Creation of additional open water would increase the area available to fish and other aquatic organisms but would not improve their numbers, quality, or diversity since there is abundant deep water nearby.

The introduction of riprap would create a suitable habitat for benthos and some smaller species of fish, improving habitat for larger aquatic predators.

Construction of piers, pilings, and eventual mooring of boats will create structures for attached algae, invertebrates, and fish that do not currently inhabit the area.

Elimination of littoral zone shallows, riparian fringe, and shoreward site vegetation will result in an overall decrease in productivity and nutrient export capabilities for the aquatic food web.

The proposed work will alter the character of runoff on the site so as to eliminate alter the existing algae, plants, invertebrates, and fish that inhabit the nearshore area and favor colonization by species more tolerant of the new conditions.

The net result of the proposed exchange of habitats that are increasingly rare in the area for habitats that are abundant will be an overall decrease in aquatic food web diversity and productivity.

The cumulative impacts of numerous such projects would/

Current and anticipated dredging of this waterway is causing or may cause losses in benthos and/or aquatic plant populations.

Destruction of the natural shoreline vegetation can be anticipated along this waterway. This could result in losses of land-water transition zone habitat.

In summary, the project will have minor/major, short term/long term, positive/negative impacts on the aquatic organisms.

Denial of the permit would avoid these minor/major positive/negative impacts on aquatic organisms. Any modifications or conditions must be clearly linked to specific impacts that you have written about above. You need to write how or why these modifications or conditions will remedy these specific problems. The project could be modified by /. This would reduce the impacts due to / by / A permit could be issued with special conditions as follows: This would reduce the impacts due to / by / If you found positive impacts as well as negative impacts on this factor, examine whether denial or any modifications or conditions that you've derived here will change or eliminate positive impacts to this factor\\

2. Effects on Wildlife (Resident and transient mammals, birds, reptiles, and amphibians associated with aquatic ecosystems, as well as upland organisms within the action area documented in II.D. above)

Commenters' points:

Applicant's response/rebuttal:

Corps Findings:

The / would eliminate/alter reproductive, foraging, resting habitat, and interrupt a travel corridor for game birds, waterfowl, wading birds, shorebirds, songbirds, small and large mammals, reptiles,

amphibians,
and invertebrates which are associated with the aquatic ecosystem and the aquatic food chain.

The availability of contaminants resulting from the construction and resulting use of the project will lead to the bioaccumulation of such contaminants in wildlife.

Construction along the shoreline would eliminate/alter habitat for amphibious animals and other organisms that require the natural land-water transitional habitat and sheltered shallow waters.

A variety of organisms would be displaced from their habitat by impacts of the proposed construction and resulting use. Those displaced organisms will/not cause degradation of habitat values for those areas to which they will be driven.

Recolonization of the project area by similar species would be expected to occur after construction.

Stabilization of the area due to protection afforded by the proposed work may lead to the establishment of different plant and animal communities.

The newly created landscaped upland would furnish habitat for those few species adapted for life under these conditions.

At the dredge disposal/fill borrow site, terrestrial plants and habitats would be destroyed by burial/excavation operations. Depending on reclamation or stabilization of the site, at least some of the original habitat values will be recovered over time.

The net exchange of habitats that are increasingly rare in the area for habitats that are abundant will be an overall decrease in wildlife diversity and productivity.

The cumulative impacts of numerous such projects would/

In summary, the project will have minor/major, short term/long term, positive/negative impacts on wildlife.

Denial of the permit would avoid these minor/major positive/negative impacts on wildlife.
Any modifications or conditions must be clearly linked to specific impacts that you have written about above. You need to write how or why these modifications or conditions will remedy these specific problems. The project could be modified by /. This would reduce the impacts due to / by /
A permit could be issued with special conditions as follows:
This would reduce the impacts due to / by / If you found positive impacts as well as negative impacts on this factor, examine whether denial or any modifications or conditions that you've derived here will change or eliminate positive impacts to this factor

3. Effects on Wetlands

Commenters' points:

Applicant's response/rebuttal:

Corps Findings:

No wetlands would be impacted as a direct or indirect result of the proposed project.
The information below will be merged in from the "Wetland Impact Tally Screen" in RAMS. If you have not as yet

entered it in that screen, please copy this information into it as soon as possible.

The following type and areal extent of wetlands would be eliminated or covered as a direct result of the proposed discharge:

<u>Type</u>	<u>Size (Acre)</u>
****	*****

The following type and areal extent of wetlands would be eliminated/transformed by drainage as a result of the proposed project:

<u>Type</u>	<u>Size (Acre)</u>
-------------	--------------------

The following type and areal extent of wetlands would be eliminated/transformed by inundation as a result of the proposed project:

<u>Type</u>	<u>Size (Acre)</u>
-------------	--------------------

QPDS requires that acreage "impacted" by discharges through the three actions above be reported. Unless the applicant has downscaled his/her plans since the application was administratively complete, the total acreage above should be entered on the HQUSACE WETLAND IMPACTS SCEEN as acreage REQUESTED. If he/she has downscaled, be sure that the original requested acreage is entered there. The PERMITTED acreage will naturally depend on the final decision.

The following type and areal extent of wetlands would be eliminated/deepened as a direct result of the proposed dredging:

<u>Type</u>	<u>Size (Acre)</u>
-------------	--------------------

In addition, the following type and areal extent of wetlands would be degraded:

<u>Type</u>	<u>Size (Acre)</u>
-------------	--------------------

The degradation would consist of /.

The recognized wetland functions which would be affected as a result of the project are: flood water storage/ natural drainage/ sedimentation patterns/ runoff filtration and purification/ groundwater discharge for maintaining minimum baseflows/ erosion protection/ food chain production/ general habitat and nesting, spawning, rearing and resting sites for aquatic and semi-aquatic species/ designated study, sanctuary or refuge area. Wetland values affected include uniqueness/heritage/ recreation.

The extent and nature of the affect on each function has been discussed in other appropriate sections of this document except for:

Each of these functions has been objectively documented for the particular site by means of information as described in Section II.D. above.

The proposed action would result in the creation of / acres of wetland which would be likely to provide the following functions:

The proposed compensatory mitigation will/not provide functional replacement of the wetland to be impacted by the proposed project. This is because

Although alteration of the wetland would constitute a minor change, the cumulative effects of such actions may

result in major impairment of wetland resources.

Adverse impacts to the wetland are minor and the cumulative effects of such actions are not likely to result in major impairment of wetland resources.

In summary, the project will have minor/major, short term/long term, positive/negative impacts on wetlands.

Denial of the permit would avoid these minor/major positive/negative impacts.

Any modifications or conditions must be clearly linked to specific impacts that you have written about above. You need to write how or why these modifications or conditions will remedy these specific problems. The project could be modified by /. This would reduce the impacts due to / by /

A permit could be issued with special conditions as follows:

This would reduce the impacts due to / by / If you found positive impacts as well as negative impacts on this factor, examine whether denial or any modifications or conditions that you've derived here will change or eliminate positive impacts to this factor\\

If the mitigation plan could and would be successfully implemented, it appears that there will be no net loss of functions and values. The ultimate success or failure of the mitigation plan would be dependent upon the specific actions of the applicant and their agent(s). Conditioning the permit to require the permittee to accept full responsibility for the success or failure of the plan and to require the permittee to undertake remedial measures if necessary to satisfy the success criteria would increase the probability that the anticipated mitigation benefits are realized.

4. Effect on Conservation and Overall Ecology:

Commenters' points:

Applicant's response/rebuttal:

Corps Findings:

Implementation of the proposed activity would impact upon the ecological balance and integrity of a valuable resource as documented in Section II.D. above., wetlands.

fish spawning or cover areas.

floodplains.

migratory bird stopover and foraging point.

It would effect the balance and integrity by /

The proposed project would change an area that now supports a variety of species into one that would probably support considerably less diversity.

The proposed construction and subsequent operation could lead to gasoline or oil spills which could result in minor/major adverse impacts.

The proposed work would degrade or foreclose the prospect of preservation of an area of high natural heritage value.

We consulted Federal and State endangered species lists. The following endangered or threatened species are known to occur in #FOLDER_COUNTY# County in similar habitats:

No rare, endangered, or threatened species or critical habitats would be affected by the proposed project.

The cumulative impacts of numerous such projects would /

In summary, the project will have minor/major, short term/long term, positive/negative impacts on conservation and the overall ecology.

Denial of the permit would avoid these minor/major positive/negative impacts.

Any modifications or conditions must be clearly linked to specific impacts that you have written about above. You need to write how or why these modifications or conditions will remedy these specific problems. The project could be modified by /. This would reduce the impacts due to / by /

A permit could be issued with special conditions as follows:

This would reduce the impacts due to / by / If you found positive impacts as well as negative impacts on this factor, examine whether denial or any modifications or conditions that you've derived here will change or eliminate positive impacts to this factor\\

C. Identified Social Impacts

1. Visual Aesthetics As with all of the other review factors, impacts on visual aesthetics should be based on the perspective of the public's view from possible vantage points available to them. Next in line of importance may be impacts to the neighboring landowners, but only from a relatively narrow perspective limited by the "but for permit issuance" test.

Commenters' points:

Applicant's response/rebuttal:

Corps Findings:

The proposed work is/not consistent with similar type structures found in the area. The development will encourage unplanned and incompatible human access destroy vital elements that contribute to the compositional harmony or unity, visual distinctiveness, or diversity of an area as viewed by the public.

The construction activities will be noticeable from / Don't use the view across neighbors' upland lot lines as a perspective since many activities outside of our jurisdiction can change this view This may detract from the visual context of /. After project completion, this project will transform an area that may be characterized as / to one which may be characterized as /. The net impact of this transformation will depend on individual taste.

The work/and operation of the project will cause a change in the aesthetic qualities of sight, taste, odor and color of the water/air around the project area.

The work/structure/use of the structure will extend offshore across the view arc of neighbors as defined by their riparian interest lines. This will cause a minor/major obstruction of this offshore area.

The cumulative impacts of numerous such projects would /

In summary, the project's effect on aesthetics would be major/minor, short/long term, and positive/negative/ and dependent on personal preference.

Denial of the permit would avoid these minor/major positive/negative impacts.

Any modifications or conditions must be clearly linked to specific impacts that you have written about above. You need to write how or why these modifications or conditions will remedy these specific problems. The project could be modified by /. This would reduce the impacts due to / by /

A permit could be issued with special conditions as follows:

This would reduce the impacts due to / by / If you found positive impacts as well as negative impacts on this factor, examine whether denial or any modifications or conditions that you've derived here will change or eliminate positive impacts to this factor\\

2. Noise

Commenters' points:

Applicant's response/rebuttal:

Corps Findings:

Construction activities, including / will increase ambient noise for a period of approximately /. After construction, operation/use of the project area will create a major/minor change in noise levels for receptors located /. The increase is/not expected to violate applicable noise criteria.

The project operation will be contrary to the tranquil setting of the area.

The cumulative impacts of numerous such projects would /

In summary, the project's effect on noise would be major/minor, short/long term, and positive/negative.

Denial of the permit would avoid these minor/major positive/negative impacts.

Any modifications or conditions must be clearly linked to specific impacts that you have written about above. You need to write how or why these modifications or conditions will remedy these specific problems. The project could be modified by /. This would reduce the impacts due to / by /

A permit could be issued with special conditions as follows:

This would reduce the impacts due to / by / If you found positive impacts as well as negative impacts on this factor, examine whether denial or any modifications or conditions that you've derived here will change or eliminate positive impacts to this factor\\

3. Designated Historic, Cultural, Scenic, and Recreational Values

The up-dated National Register of Historical Places was checked. Registered Historical sites would not be affected by the proposed work. The proposed work would not affect an area designated under the Federal Wild and Scenic Rivers Act, or being considered for such designation. The proposed work would not affect areas designated as Natural Landmarks, National Rivers, National Wilderness Areas, National Seashores, National Recreation Areas, National Lakeshores, National Parks, National Monuments, archaeological resources, including Indian religious or cultural sites. We know of no applicable or affected state, regional, or local land use classification due to historic, cultural, scenic, or recreational values.

Commenters' points:

Applicant's response/rebuttal:

Corps Findings:

The project will affect an area recognized as / by /. The issuance of a permit, as proposed, would be consistent with, and avoid significant adverse effects on the / values of the / for which the / was established.

4. Land Use Patterns

Commenters' points:

Applicant's response/rebuttal:

Corps Findings:

The proposed project is contrary to/consistent with the existing zoning for the area. The state has issued their respective permit for the project. Therefore we defer to these state and local entities as reflecting benefits to state and local land use goals. If location state Michigan## The proposed project is contrary to the St. Clair Flats Management Plan, as developed and implemented by local government and the Michigan Department of Environmental Quality, in the following respects: ##

From a national perspective, The work may encourage a trend of conversion of wetlands/shallow water areas to upland residential development. The work may encourage a trend of investment in potential high erosion/flood-prone areas for residential development. The project would encourage a trend of development of natural areas rather than recycling abandoned, previously developed areas to more intensive or better uses. This would also supply an additional disincentive to clean up abandoned or contaminated sites.

The present land use patterns or cultural development would/not change due to the proposed work.

In summary, the project's effect on land use would be major/minor, long term, and positive/negative.

Denial of the permit would avoid these minor/major positive/negative impacts. Any modifications or conditions must be clearly linked to specific impacts that you have written about above. You need to write how or why these modifications or conditions will remedy these specific problems. The project could be modified by /. This would reduce the impacts due to / by / A permit could be issued with special conditions as follows: This would reduce the impacts due to / by / If you found positive impacts as well as negative impacts on this factor, examine whether denial or any modifications or conditions that you've derived here will change or eliminate positive impacts to this factor\\

5. Economic Effects

Commenters' points:

Applicant's response/rebuttal:

Corps Findings:

The contractor, equipment supplier, and other commercial enterprises would benefit from the proposed work.

The neighbors' property values would decrease/stabilize/increase as a result of the proposed work.

Increased use of the area could benefit local businesses.

The local tax revenues, community services, community cohesion would benefit.

In summary, the project's effect on economics would be major/minor, short/long term, and positive/negative.

Denial of the permit would avoid these minor/major positive/negative impacts.
Any modifications or conditions must be clearly linked to specific impacts that you have written about above. You need to write how or why these modifications or conditions will remedy these specific problems. The project could be modified by /. This would reduce the impacts due to / by /

A permit could be issued with special conditions as follows:

This would reduce the impacts due to / by / If you found positive impacts as well as negative impacts on this factor, examine whether denial or any modifications or conditions that you've derived here will change or eliminate positive impacts to this factor\\

6. Effects on Recreation Like the majority of other public interest factors, this pertains not to the applicant's recreation, but to impacts on public recreation. Private or membership-only facilities are not available to the public at large, so only write about benefits and detriments from public perspective\\

No impacts would be expected.

Commenters' points:

Applicant's response/rebuttal:

Corps Findings:

The proposed work/structure would destroy an area which is important to maintenance of populations of fish and game, although it is not in itself open to public use for hunting and fishing.

cause an obstruction of an area currently used by the public for waterskiing, fishing, and other watersports.

destroy/create an area of value for passive recreation such as photography, birdwatching, walking, peoplewatching, and the like.

cause an increase in the number of people in the area, and this would not occur but for this permitted activity. Those people may in turn degrade existing public recreational facilities in the area.

This project will provide for greater public recreational opportunities and waterway usage without adversely affecting existing use patterns.

In summary, the project's effect on recreation would be major/minor, short/long term, and positive/negative.

Denial of the permit would avoid these minor/major positive/negative impacts.
Any modifications or conditions must be clearly linked to specific impacts that you have written about above. You need to write how or why these modifications or conditions will remedy these specific problems.\\The project could be modified by /. This would reduce the impacts due to / by /

A permit could be issued with special conditions as follows:

This would reduce the impacts due to / by / If you found positive impacts as well as negative impacts on this factor, examine whether denial or any modifications or conditions that you've derived here will change or eliminate positive impacts to this factor

7. Effects on Safety

No unsafe conditions would be created or increased by the proposed construction or use of the project area.

Commenters' points:

Applicant's response/rebuttal:

Corps Findings:

During construction and as a result of the project, the project will cause increased exposure of people to /. These impacts would not occur but for the permitted activity. Watch out for conclusions that a project will induce auto traffic. There are usually many other upland activities that could occur on a site that would induce auto traffic

The project would contribute to or encourage crowded boating conditions and or unsafe boating practices.

The cumulative impacts of numerous such projects would/

In summary, the project's effect on safety would be major/minor, short/long term, and positive/negative.

Denial of the permit would avoid these minor/major positive/negative impacts.

Any modifications or conditions must be clearly linked to specific impacts that you have written about above. You need to write how or why these modifications or conditions will remedy these specific problems.\\ The project could be modified by /. This would reduce the impacts due to / by /

A permit could be issued with special conditions as follows:

This would reduce the impacts due to / by / If you found positive impacts as well as negative impacts on this factor, examine whether denial or any modifications or conditions that you've derived here will change or eliminate positive impacts to this factor\\

8. Food and Fiber Production

The proposed work would benefit food/fiber production by providing relief from potential flooding.

No impacts would be expected.

9. Mineral Needs

No impacts would be expected.

10. Energy Conservation and Development.

No impacts would be expected.

11. Consideration of Property Ownership.

The applicant has a right to reasonable private use of the property, subject to the rights and interests of the public in the waters of the United States, including federal navigation servitude and federal regulation for environmental protection.

The project will have benefits to the applicant's right to property ownership.

There are alternatives that will still afford reasonable private use of the property. These include /. There may be more.

D. Cumulative Effects

Cumulatively, the proposed permit activity would have major/minor positive/adverse impacts as described in the sections above.

We could not identify any potential cumulative impacts due to this project.

E. Secondary Effects

Issuance of the permit would cause secondary effects on the action area as detailed in the sections above; these effects would not occur but for the permitted activity.

The proposed / foot setback would minimize the potential for adverse impact to the aquatic ecosystem. A substantial buffer would remain between the waterway and the proposed /.

F. General Criteria: You may cross-reference similar considerations elsewhere in this evaluation to avoid repetition.

1. The relative extent of the public and private need for the proposed structure or work:

Commenters' points:

Applicant's response/rebuttal:

Corps Findings:

2. Where there are unresolved conflicts as to resource use, the practicability of using reasonable alternative locations and methods to accomplish the object of the proposed structure or work:

Commenters' points:

Applicant's response/rebuttal:

Corps Findings:

3. The extent and permanence of the beneficial and/or detrimental effects which the proposed structure or work is likely to have on the public and private uses to which the area is suited:

Commenters' points:

Applicant's response/rebuttal:

Corps Findings: Choose one of the following depending on whether we can really identify "suitable uses:""

We are not in a position to determine whether this wetland/shallows/whatever is an area that is ultimately suitable for certain uses.

This / has been developed for the use as / and has proven to be suitable for this use since this development. The structure/work is likely to have a major/minor short term/long term beneficial/detrimental effect on this public/private use by /

G. Alternatives: The following administrative alternatives have been considered Don't delete any of these possible alternatives so as to document that we considered them. See Appendix B of Part 325, Para. 7:

Issue the permit as proposed.

Issue the permit with modifications. As mentioned in paragraphs / above, a permit issued which /, will minimize /, while still fulfilling the project's purposes and beneficial effects on /.

Issue the permit with special conditions. As mentioned in paragraphs / above, a permit with special conditions to /, will minimize /, while fulfilling the project's purposes and beneficial effects on /.

Deny the application. (Consider the no action alternative.)

IV. The portions of this document constituting the Environmental Assessment adequately address the relative magnitude of the expected impacts of the proposed project within our mandatory scope of analysis. The range of possible impact magnitude included no impact, negligible impact, minor impact, major impact, and significant impact as the term significant is defined in regulations implementing NEPA. Our analysis did not indicate the potential for significant impact on the quality of the human environment. Therefore, I do not recommend preparation of an environmental impact statement.

V. 404(b)(1) Guidelines Compliance Evaluation:

We have evaluated the effects of the proposed discharge of dredged or fill material into the waters of the U.S. according to the Section 404(b)(1) Guidelines for Specification of Disposal Sites for Dredged or Fill Material, promulgated in Title 40 CFR 230 pursuant to Section 404 of the 1977 Clean Water Act.

Factual Determinations in light of Subparts C-F of the Guidelines have been set forth under appropriate impact assessments above.

Testing: The material to be discharged in this project consists of /. Subpart H of the Guidelines requires testing of the extraction site of the discharge material for contaminants except under certain circumstances.

In this case, testing is not required because /
there are prior test results that enable characterization of the contaminants
the material is comprised of commercial sand/gravel/ to which contaminants do not adsorb/have not been subject to likely sources of contaminants
the discharge site is adjacent to the extraction site and subject to the same sources of contaminants, and materials at the two sites are substantially similar.
constraints are available to reduce contamination to acceptable levels, and the applicant is willing and able to implement such constraints.

Mitigation/Alternatives:

The following is a summary of the mitigation sequence as required by the February 7, 1990 Memorandum of Agreement by the EPA and the Corps as it pertains to the proposal and, if applicable, its alternatives.

Avoidance.

We have determined that there will not be more than minimal damage as a result of the discharge. Therefore, avoidance of the discharge would not be a less damaging practicable alternative delete the rest of this alternatives section.

We have not identified any alternatives that would avoid discharges and would not have other significant adverse environmental consequences.

We have independently determined that there is no practicable way to avoid discharges and fulfill the overall project purpose.

We have determined that the overall project purpose could be fulfilled and discharges could be avoided by the alternative of /. However, we have determined that this alternative would not be discernibly less damaging than the current proposal avoid minor impacts on the aquatic environment at the cost of substantial impacts to other natural environmental values as detailed above Therefore, there is no less damaging practicable alternative delete the rest of this alternatives section\

We initially determined that the potential impact of the discharge on the aquatic environment would be more than minimal, and directed the applicant to address the alternative of /, which would avoid discharges (Encl. /) The applicant responded ((Encl. /). He stated that /Fully and fairly summarize the rebuttal points\

We agree that this avoidance alternative would not be practicable for him based upon cost/logistics/technology relative to the overall project purpose. Therefore, there is no less damaging practicable alternative that would avoid a discharge.

We do not agree with the applicant that the avoidance alternative would not be practicable, because /. Therefore, there is a less damaging practicable alternative that avoids a discharge.

Minimization.

As described in the sections above, we have identified modification/conditions consisting of /. We have determined that the these steps are appropriate because there will be discernable differences in the magnitude and nature of these aquatic impacts as detailed above. not appropriate because they would minimize impacts on the aquatic environment at the cost of substantial impacts to other natural environmental values as detailed above.

We initially determined that the potential impact of the discharge on the aquatic environment would be more than minimal, and directed the applicant to address the alternative of /, which would minimize impacts (Encl. /) The applicant responded ((Encl. /). He stated that /Fully and fairly summarize the rebuttal points

We agree that this minimization alternative would not be practicable for him based upon cost/logistics/technology relative to the overall project purpose. Therefore, there is no less damaging practicable alternative.

We do not agree with the applicant that the minimization steps would not be practicable, because /. Therefore, there is a less damaging practicable alternative.

The following is for use only with special aquatic sites where we have made preliminary determination of major adverse impacts individually or cumulatively. For cumulative impact, you should have already documented in this evaluation that the project involves high value aquatic resources in a watershed or other identified area that has or would be subjected to additional substantial development, and therefore should be subject to rigorous evaluation of alternatives. The proposed discharge would occur in a special aquatic site, a wetland/riffle and pool complex/vegetated shallows/mudflat. The fundamental, essential, or irreducible activity or use to which the special aquatic site will be put after discharging dredged or fill material and construction ("basic purpose") is /. /, per se, does not require access or proximity to or siting within wetlands/riffle and pool complexes/vegetated shallows/mudflats to take place. Therefore, we must presume that there are practicable alternatives to achieve the overall project purpose that do not involve special aquatic sites, and that all practicable alternatives to the proposed discharge which do not involve a discharge into a special aquatic site have less adverse impact on the

aquatic ecosystem.

There were readily apparent less damaging practicable alternatives of / which we directed the applicant to address (Encl. /)

There were not any readily apparent alternatives, and we directed the applicant to attempt to overcome the presumption that less damaging practicable alternatives exist (Encl. /).

The applicant responded ((Encl. /). He stated that /Fully and fairly summarize the rebuttal points

We agree that minimization alternatives would not be practicable for him based upon cost/logistics/technology relative to the overall project purpose. Therefore, there is no less damaging practicable alternative.

We do not agree with the applicant that minimization steps would not be practicable, because /. Therefore, there is a less damaging practicable alternative.

Compensation.

As described in the sections above we have identified steps to achieve functional replacement of unavoidable loss of aquatic resources through creation or restoration of /. We have determined that these steps are/not appropriate for the reasons specified in those sections.

We have determined that these steps are/not practicable for the following reasons:

Section 404(b)(1) compliance summary matrix.

P = Proposal. **D** = No action (denial). A1 = /. A2 = /. briefly summarize or label a specific alternative that you fleshed out in the course of our evaluation above.

Where only a **P** is shown, it indicates that all alternatives meet compliance criteria for that item. An unknown is a noncompliance; this will be designated with a **U** in the DOES NOT COMPLY column. Switch "insert" mode to "overstrike" now.

	MEETS CRITERIA	DOES NOT COMPLY
1. The applicant must overcome the presumption that a practicable, less environmentally damaging alternative site, outside special aquatic sites, exists. If the project is water dependent, OR is not in a special aquatic site, enter only N/A (not applicable).		
2. There must be no alternative that is practicable, is less damaging to the aquatic ecosystem, and has no other significant, adverse environmental effects.		
3. The discharge must not violate state water quality standards or Clean Water Act Section 307 toxic effluent standards or bans.		
4. The project must not jeopardize the continued existence of an endangered species.		
5. The project must not cause or contribute to significant adverse effects on municipal water supplies, plankton, fish, shellfish, wildlife, special aquatic sites, or other aspects of human health or welfare.		
6. The project must not cause or contribute to significant adverse effects on life stages of aquatic life and other wildlife dependent on aquatic ecosystems.		
7. The project must not cause or contribute to significant adverse effects on ecosystem diversity, productivity, or stability.		

8. The project must not cause or contribute to significant* adverse effects on recreational, aesthetic or economic values.		
9. All appropriate and practicable steps, to minimize potential adverse effects of the discharge on the aquatic ecosystem, must be taken.		

*If project does not comply due to this, explain if this determination differs from conclusion regarding an EIS, Section IV. above.

Section 404(b)(1) Compliance/Non-Compliance Determination

Choose one of the following three statements.

The proposed discharge complies with the Guidelines.

The proposed discharge complies with the requirements of the Guidelines, with the inclusion of appropriate and practicable discharge conditions to minimize pollution or adverse effects to the affected aquatic ecosystems.

The proposed discharge fails to comply with the 404(b)(1) Guidelines because: f proposal fails to comply, select one or more of the following:

There is a practicable alternative to the proposed discharge that would have less adverse effect on the aquatic ecosystem, and the alternative does not have other significant adverse environmental consequences.

The proposed discharge does not include all appropriate and practicable measures to minimize potential harm to the aquatic ecosystem.

The proposed discharge will result in significant degradation of the aquatic ecosystem under 230.10(b) or (c).

There does not exist sufficient information to make a reasonable judgement as to whether the proposed discharge will comply with the Guidelines.##

#PM_SIGNATURE_LADDER#

Prepared by:

#PM_ROLE_SIGNATURE_BLOCK#

Date: /

Enclosures

1. Presently proposed plan dtd. /

Reference Materials used in Compiling this Assessment include:

USGS topo quad for

NOAA Chart No.

Endangered Species List

National Register of Historical Places
USDA aerial photography dated
USDA soil survey for #FOLDER_COUNTY# County, #FOLDER_STATE#, dated
COE aerial photography ##AIRPH## , dated
USGS Water Resources Data for the State of #FOLDER_STATE#, Water Year 19XX
Federal Flood Insurance Report for
COE Navigability Study for the
If location State is Michigan## Michigan State Atlas ##
Site Investigation
Ground Photography
Register of Natural Landmarks
Wild and Scenic Rivers Act
404(b)(1) Guidelines
Fish and Wildlife Service Wetland Inventory Maps
Census Data
Department of the Interior National River Inventory
If location State is Michigan##COE Final EIS for
Wetland Evaluation Technique Volume I: Literature Review
and Evaluation Rationale##
If location State is Indiana##Hydrology of Indiana Lakes
COE Final EIS for
Drainage Areas of Indiana Streams
The Indiana Water Resource: Availability, Uses, and Needs
Wetland Evaluation Technique Volume I: Literature Review
and Evaluation Rationale##

DRAFT

Mr. Jack M. Davis
Senior Vice President and
Chief Nuclear Officer
DTE Energy
Fermi 2 – 210 NOC
6400 North Dixie Highway
Newport, MI 48166

SUBJECT: REQUESTS FOR ADDITIONAL INFORMATION RELATED TO THE
ENVIRONMENTAL REVIEW FOR THE COMBINED LICENSE APPLICATION
FOR FERMI NUCLEAR POWER PLANT, UNIT 3

Dear Mr. Davis:

This letter presents requests for additional information (RAIs) for the subject environmental review. The U.S. Nuclear Regulatory Commission (NRC) requests that Detroit Edison Company (Detroit Edison) provide responses to these RAIs within 30 calendar days of this letter.

The NRC's environmental review schedule assumes that technically correct and complete responses, including all the information requested in the RAIs, will be received by the NRC within 30 calendar days of this letter. For any RAI that cannot be fully answered in this timeframe, it is expected that a date for receipt of this information will be provided to the NRC by Detroit Edison within the 30-day period so that the NRC staff can assess what schedule impacts there may be.

Enclosure 1 presents the RAIs developed by the NRC staff based on its review of the Fermi Nuclear Power Plant, Unit 3 (Fermi 3) combined license (COL) application environmental report (Revision 0), the alternative sites visit conducted in January 2009, and the site audit conducted in February 2009.

In a letter (ML0908500372) dated March 3, 2009, the U.S. Army Corps of Engineers, Detroit District (USACE) accepted its responsibilities as a cooperating agency for preparing the NRC's environmental impact statement (EIS) for the Fermi 3 COL environmental review, in accordance with a memorandum of understanding (MOU) between the NRC and USACE dated September 12, 2008 (ML082540354). Enclosure 2 contains the RAIs generated by the USACE under this MOU to support documentation in the EIS that meets their disclosure and decision-making requirements.

Please provide the RAI responses to the NRC in two separate packages, each under oath or affirmation—one for the responses to the NRC staff RAIs and the other exclusively for the responses to the USACE RAIs.

J.Davis

- 2 -

If you have any questions or comments concerning this matter, please contact me at (301) 415-5163 or by email at Stephen.Lemont@nrc.gov.

Sincerely,

Stephen Lemont, Environmental Project Manager
Environmental Projects Branch 2
Division of Site and Environmental Reviews
Office of New Reactors

Docket No. 52-033

Enclosures: As Stated

J.Davis

- 2 -

If you have any questions or comments concerning this matter, please contact me at (301) 415-5163 or by email at Stephen.Lemont@nrc.gov.

Sincerely,

Stephen Lemont, Environmental Project Manager
Environmental Projects Branch 2
Division of Site and Environmental Reviews
Office of New Reactors

Docket No. 52-033

Enclosures: As Stated

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CLuff, USACE (Colette.M.Luff@usace.army.mil)			
KLaGory, Argonne (lagory@anl.gov)			
MKhatib-Rahbar, ERI (mkr1@eri-world.com)			

ADAMS ACCESSION NUMBER: ML090980159

OFFICE	PM:RAP2:DSER:NRO	LA:RAP2:DSER:NRO	OGC	BC:RAP2:DSER:NRO
NAME	SLemont	ARedden	MCarpentier	RWhited
DATE	/ /09	/ /09	/ /09	/ /09

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Fermi Primary List

Michigan Natural Features Inventory
Mason Bldg., 5th Flr.
Box 30444
530 Aolegan St.
Lansing MI 48933

Mr. Derek Bailey, Chairman
Grand Traverse Band of Ottawa
and Chippewa Indians
2605 N.W. Bayshore Dr.
Suttons Bay MI 49682

Mr. John Ballard, Chief
Ottawa Tribe of Oklahoma
P.O. Box 110
811 Third Ave., NE
Miami OK 74355

Leaford Bearskin
Wyandotte Nation
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64700 E. Highway 60
Wyandotte OK 74370

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7070 East Broadway Rd.
Mt. Pleasant MI 48858

Mr. James G. Chandler
International Joint Commission
Great Lakes Water Quality Board
United States Section
1250 23rd Street, NW Ste. 100
Washington DC 20440

Mr. Steven Chester, Director
Michigan Dept. of Environmental Quality
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Lansing MI 48933

Ms. Mary Colligan, Asst. Regional
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National Marine Fisheries Service
Northeast Regional Office
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Gloucester MA 01930

Mr. Brian D. Conway, Michigan SHPO
Michigan Historical Center
Department of History, Arts, and Libraries
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702 W. Kalamazoo St.
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Mr. Craig Czarnecki, Field Supervisor
U.S. Fish and Wildlife Service
East Lansing Michigan Field Office
2651 Coolidge Rd., Ste. 101
East Lansing MI 48823

Ms. Kathrine David
Michigan Dept. of Environmental
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Jackson District Office
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Jackson MI 49201-1556

Mr. Frank Ettawageshik, Chairperson
Little Traverse Bay Bands
of Odawa Indians
7500 Odawa Cir.
Harbor Springs MI 49740

Ms. Tamara Francis
Cultural Preservation Office
Delaware Nation
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Bldg. 100, State Hwy 201
Anadarko OK 73005

Mr. John H. Hartig, Refuge Manager
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Ms. Patricia Jones
Ohio Natural Heritage Data Base
Division of Natural Areas & Preserves
Ohio Department of Natural Resources
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Ellis Reference & Information Ctr.
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