

**Supplementary Requests for Additional Information (RAIs) for the
Fermi 3 Combined License Application Environmental Review
November 6, 2009**

RAI Number	Question Summary (RAI)	Full Text (supporting information)
AE2.4.2-5 ESRP 2.4.2 10 CFR 51.71(d)	Provide an analysis of the potential contribution of chemical and thermal effluents from the proposed Fermi 3 to algal production in Lake Erie, in the vicinity of the Fermi site and in the lake's western basin. The response should address <i>Lyngbya wollei</i>, which has recently been identified as a problematic invasive blue-green algae in Lake Erie, in addition to other algal species.	The analysis provided in the Environmental Report (ER) addresses the potential for discharges from the proposed Fermi 3 facility to increase production of algae in Lake Erie, in the vicinity of the Fermi site and in the lake's western basin, including but not limited to <i>Lyngbya wollei</i>. The following information will be used to complete the staff's NEPA analysis of the environmental effects of operating the facility. Table 3.3-1 in the ER (Section 3.3.2.3) identifies the use of phosphoric acid as a corrosion inhibitor in the plant service water system and discharge of this chemical into Lake Erie could contribute to phosphorus loading in the lake. Expected quantities of chemical constituents that could be released to Lake Erie at the permitted discharge are described in ER Section 3.6.1 (including Table 3.6-1) and effluent concentrations are identified in Table 3.6-2; however, estimates of the increases in ambient concentrations of nutrients (primarily phosphorus and nitrogen) in the vicinity of the permitted discharge for Fermi 3 should be calculated. Information about historic trends regarding concentrations of nutrients in Lake Erie, in the vicinity of the Fermi site and in the lake's western basin, and the estimated changes in nutrient concentrations that would occur in those areas as a result of contributions from Fermi 3 operation would facilitate evaluation of potential changes in algal production. In addition, any available information pertaining to algal production in the vicinity of the existing Fermi 2 discharge should be provided for reference. A sufficient analysis would combine information for both chemical and thermal changes that would be expected as a result of Fermi 3 operations to estimate the change in algal production.

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AE2.4.2-6 ESRP 2.4.2 10 CFR 51.71(d)	Provide copies of references and other documentation containing information pertaining to the potential for the rayed bean (<i>Villosa fabalis</i>) to occur in the vicinity of the Fermi site.	Additional information is needed to adequately address the potential for Fermi 3 construction and operations to affect the rayed bean, a mussel species that is a candidate for listing under the Endangered Species Act. The rayed bean was not considered a potential species of concern in the ER (Section 2.4.2.4). It was indicated during discussions with Detroit Edison that there is information suggesting that the rayed bean is not present and unlikely to occur in Lake Erie in the vicinity of the Fermi 3 site. Sources for this information are derived from the results of surveys and research conducted by DTE Energy and others (e.g., Michigan Natural Features Inventory, the U.S. Army Corps of Engineers [USACE], and U.S. Geological Survey [USGS]), including: • Ongoing native mussel surveys conducted near Detroit Edison's Monroe Plant. • Approximately 30 years of information on mussels in the western basin of Lake Erie have been collected and evaluated by the USGS (including samples collected near the Fermi site). Reportedly, no rayed bean specimens have been identified in those data. • Results of sampling by DTE Energy researchers at the Monroe Plant from 1983 to 1993 that are documented in a 1993 paper. Reportedly, no rayed bean mussels were observed. • Surveys for mussels by the USACE approximately 2 miles south of the Fermi site reportedly found no live or dead rayed bean specimens. • Observations during sediment sampling and buoy maintenance by Detroit Edison staff within the Fermi exclusion area indicate that the sediment is predominantly hardpan, which is not suitable habitat for the rayed bean. • Rayed bean have reportedly not been observed in surveys

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		conducted by the Michigan Natural Features Inventory at the mouth of Swan Creek in Lake Erie (near the northern boundary of the Fermi site) or in Swan Creek. Original source documents or a summary of these findings (provided to the NRC under oath and affirmation) are needed to serve as references for the analysis to be presented in the EIS.
CR4.1.3-10 ESRP 4.1.3 and ESRP 5.1.3 10 CFR 51.71(d) 36 CFR Part 800 43 CFR Part 10	Provide a documentation describing how ITC <i>Transmission</i> (ITC) would identify and protect cultural resources prior to transmission line right-of-way construction.	This information will be used to complete the NEPA cumulative impacts analysis and to support compliance with the Section 106 process. Cultural resource investigations are typically conducted prior to construction, to identify and avoid any National Register of Historic Places (NRHP)-eligible historic properties (e.g., archaeological sites). A description is needed of the measures that would be used to (1) determine the presence of cultural resources before construction of the transmission line begins, and (2) determine whether any of these cultural resources have been listed, or determined eligible for listing in the NRHP. Although the NRC does not regulate transmission lines, the EIS will address this subject in the cumulative impacts section.
HH3.5-1 ESRP 3.5 10 CFR 51.71	Provide information on how the Class B and Class C low level radioactive waste (LLRW) generated during Fermi 3 operations would be managed.	ER Section 3.5.2.3 mentions that “The SWMS [Solid Waste Management System] controls, collects, handles, processes, packages, and temporarily stores solid waste generated by the plant prior to shipping the waste offsite.” Also, ESBWR DCD Revision 5 Section 11.4.1 states that “on-site storage space for a six-month volume of packaged waste is provided in the radwaste building.” In light of the current lack of a licensed offsite disposal facility and the uncertainty regarding the availability of a new disposal facility during the license term, Detroit Edison should describe the plan for storing Class B and C LLRW onsite during the license term and the environmental consequences of such extended onsite storage. Alternatively, if Detroit Edison has a plan for managing the wastes that does not require an offsite disposal facility or extended onsite storage, it should provide details for that plan.

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HH4.5-5 ESRP 4.5 10 CFR 20.1301 10 CFR 50 App. I	Provide construction worker doses for constructing an LLRW storage facility on-site.	Provide an estimate of the annual dose contribution to a LLRW storage facility construction worker (it is assumed that such a facility would be constructed sometime in the future when Fermi 3 is operating) from operations of Fermi 3 and other existing sources. According to ESRP 4.5 Section I, data are needed for the number and principal locations of construction workers who will be exposed to the radiation sources and the total amount of time per year that they will spend at those locations.
HH5.4.3-4 ESRP 5.4.3 40 CFR 190.10 10 CFR 20.1301(e) 10 CFR 50 App. I	Provide radiation dose estimates for the maximally exposed individual from the onsite out-of-plant storage of solid waste.	According to ESRP Section 5.4.2, data are needed for the exposure rates associated with the proposed plant and onsite out-of-plant storage of solid LLRW to meet the acceptance criterion of 40 CFR 190 and 10 CFR 20.1301(e).
HH5.4.3-5 ESRP 5.4.3 10 CFR 20.1201	Provide occupational dose calculations from onsite storage of Class B and Class C LLRW from Fermi 3.	Provide a revised estimate of total dose to a Fermi 3 occupational worker that includes contributions from an LLRW storage facility. Also, state what effect the onsite storage of LLRW will have on the overall estimated Fermi 3 occupational worker dose estimates. ESRP Sections 4.5 and 5.4.3.III(3) recommend inclusion of an estimate of the collective occupational dose.
HY2.3.1-16 ESRP 2.3.1 10 CFR 51.71(d)	Provide a report or reports detailing the laboratory results of the distribution coefficient measurements of on-site samples from the bedrock. Include a description of laboratory methods used to determine distribution coefficient (K_d) values; sample locations, depths, rock types, and quantities; and quality control results. Also, describe the calculation method for the values presented in Table 2.4-234 of Detroit Edison's September 1, 2009 safety-	Contaminant transport in the ER is limited to a discussion of advective transport (Section 2.3.1.2.3.2). The staff intends to include a more thorough discussion in the EIS of the environmental impacts of a potential release of radioactive materials to groundwater. Detroit Edison presented a discussion of a potential release of radioactive material to groundwater in Section 2.4.13 of the FSAR. That discussion will form the basis of the staff's discussion of contaminant transport in the EIS. Incorporating site-specific distribution coefficient (K_d) values would allow estimation of the transport rate of radioactive constituents to receptors. The staff filed safety-related RAIs corresponding to Section 2.4.13 of the Final Safety Analysis Report (FSAR) on January 14, 2009.

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	related RAI response letter.	Detroit Edison's September 1, 2009 RAI letter response to these RAIs, which included transport analysis, methodology, and references, provided a conservative basis for calculating concentrations at receptors (nearest well and Lake Erie). The response included K_d values from onsite bedrock samples. Review of the K_d investigation report is needed to verify the basis for the transport analysis.
TE2.4.1-12 ESRP 2.4.1 10 CFR 51.71 (d)	Provide up-to-date and complete data on the locations and dates of sightings of the eastern fox snake (<i>Pantherophis gloydi</i>) on the proposed Fermi 3 site, including any sightings by Detroit Edison staff or others in the last 10 years.	Information about the numbers and locations of sightings of the eastern fox snake in recent years would facilitate evaluation of the nature of this snake's population on the project site. The Michigan Department of Natural Resources (MDNR) indicated that its records of a viable population of eastern fox snakes on the Fermi property come at least in part from reports by Detroit Edison personnel. Detroit Edison should investigate its own records as well as coordinate with MDNR to determine the extent of recent and historical sightings data and to provide a basis for determining potential impacts to the eastern fox snake.
TE 2.4.1-13 ESRP 2.4.1 10 CFR 51.71 (d)	Provide a delineation of potential eastern fox snake habitat within the proposed Fermi 3 site. Provide information, including a map, describing the location of the revised project footprint with respect to potential eastern fox snake habitat.	While the ER provided a general description of potential eastern fox snake habitat, a more complete analysis of the Fermi 3 site with respect to its potential to provide habitat for this snake and a graphical representation of where the revised project footprint would overlap potential eastern fox snake habitat would provide a more complete basis for assessing impacts to this snake.
TE4.3.1-8 ESRP 2.4.1 10 CFR 51.71 (d)	Provide an assessment of the potential impacts of the proposed Fermi 3 project on eastern fox snakes and potential eastern fox snake habitat.	Additional detail beyond the information provided in the ER in Section 4.3.2.1 is needed to adequately assess potential impacts on the eastern fox snake.
TE4.3.1-9 ESRP 2.4.1	Provide a discussion of measures Detroit Edison is considering to mitigate	This RAI is a request to Detroit Edison to document its consideration of mitigation measures to minimize impacts on the eastern fox

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10 CFR 51.71 (d)	potential impacts to the eastern fox snake and its habitat. Detroit Edison should also provide complete documentation of any discussions or correspondence to date with the MDNR Natural Heritage Program related to the project's impact on the eastern fox snake and measures Detroit Edison would consider for mitigating impacts to this snake.	snake. Detroit Edison has been working with the MDNR to mitigate impacts to this snake, and documentation of those discussions is needed.