PMFermiCOLPEm Resource

From: Lemont, Stephen
Sent: Tuesday, September 01, 2009 2:07 PM
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Cc: Randall D Westmoreland; FermiCOL Resource
Subject: Availability for Conference Call with Detroit Edison on Fermi 3 RAIs - September 10 or 11, 2009
Attachments: RAIs to be Discussed with Detroit Edison 081309.docx

All,

Randy Westmoreland of Detroit Edison contacted me earlier today regarding setting up a conference call on either Thursday September 10 or Friday September 11, to discuss the RAIs listed below. Please let me know of your availability to participate in a call on these dates. Given the number of topics to be discussed, let's assume that this call may take up to about 2 hours. Argonne will provide the bridgeline for, and take notes on the call.

- Fermi 3 RAIs for Discussion with Detroit Edison in Advance of Response Submittals (see complete list of these attached), but limited to discussion of those RAI responses scheduled to be submitted to NRC in September and October 2009 (i.e., RAIs BC10.4.2-2, HH5.11.7-1, HY2.3.1-8, NO4.4.1-1, NO4.4.1-2, NO5.8.1-1, and TR3.8-5). Discussion of RAI SE4.4.2-10 (traffic study) is being covered in a separate conference call currently scheduled for September 9.

- NRC Comments on July 31, 2009 Fermi 3 RAI Response Submittal (on the responses to RAIs GE1.1-1, AE2.4.2-1, CR4.1.3-1, CR4.1.3-2, HH5.3.4-1, HY2.3.1-5, HY4.6-1, HY4.6-2, SE2.5.2-3, SE4.4.2-9, TE2.4.1-3, TL4.1.2-1, and TL4.1.2-2).

- Detroit Edison's question regarding the types of wastewater discharge information need by NRC in response to RAI HY2.3.1-15 (question previously provided).

Thanks,
Steve Lemont

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Fermi 3 RAIs to Be Discussed with Detroit Edison

RAI Number1	Question Summary (RAI)	Full Text (supporting information)	Date Response to be Provided	Purpose of Discussion
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.	12/30	The staff wants be sure that all changes to environmental impacts resulting from the site layout modifications are considered in the analysis and in sufficient detail to permit completion of the EIS on schedule.
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	11/23	The staff wants to discuss the assumptions and conclusions presented in the ER and ensure that sufficient information is provided in the RAI response to address the needs of the EIS.

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

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		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.		
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.	11/23	The staff wants to discuss the necessary components of the conformity analysis, and how that information will be presented in NRC's air conformity determination that may be required and included as an appendix to the EIS.
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: • 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	8/31	The staff wants know how Detroit Edison is addressing the evaluation requested in this RAI, and wants to be sure that all impacts at alternative sites are considered in the analysis, all at sufficient detail to permit completion of a defensible alternatives analysis in the EIS.

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		topical areas: – 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.		
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: • 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.	10/30	The staff wants to discuss the costs for an ISFSI and the proper characterization of the relationship to Fermi 2 and Fermi 3 operations.
HH5.4.2-2	Provide a description of the	In Section 5.4.1.2 on page 5-108 of	11/23	The staff needs to

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ESRP 5.4.2 10 CFR 50.34a	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.	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.		determine if the methodology being used by Detroit Edison is correct and that all relevant values will be provided for inclusion in the EIS.
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.	11/23	The staff wants to ensure that occupational doses include doses from Fermi 1 and Fermi 2 operations, as well as from Fermi 3 operations.
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.	10/30	The staff needs to determine if the methodology being used by Detroit Edison is correct and that a reasonable explanation is provided for the EIS.
HY2.3.1-1	Provide maps and descriptions of the	As determined during the site audit,	12/30	The staff wants to discuss

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ESRP 2.3.1 10 CFR 51.70(b)	areal extent, cross section, and depth of all existing clay dikes installed during the construction of Fermi 1 and 2.	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.		the level of detail that will be provided by Detroit Edison regarding the information requested for the clay dikes.
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.	12/30	The staff wants to determine if sufficient detail will be provided by Detroit Edison in contour maps and descriptions of gravel fills for inclusion in the EIS.
HY2.3.1-8 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), which has a much smaller watershed area and is located more than 20 miles north of Detroit. There are other gauged streams that are closer and more similar to Swan Creek that would provide a more appropriate basis for estimation.	9/30	The staff wants to discuss the approach that is planned by Detroit Edison to address this RAI, including but not limited to which watershed will be used as a surrogate and the basis of using that watershed.
HY4.2.1-2 ESRP 4.2.1 10 CFR 51.70(b)	Provide information on the calculation results of the drawdown (or water head) on the surface water bodies surrounding the Fermi site due to the dewatering operation of Fermi 3. Characterize all possible hydraulic	To evaluate the impact on wetlands by the dewatering operation, the water level changes of surface water bodies, the glacial overburden, and the gravel fills at the Fermi site need to be known. Also, the hydraulic	12/30	The staff wants to discuss the approach that will be used by Detroit Edison for making these calculations.

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	connections among the bedrock aquifer under the Fermi site, the surface waters (including wetlands, lagoons, cannels, ponds, and Lake Erie) in the vicinity of the site, and the existing and proposed gravel fills at the Fermi site.	connections between the above features need to be characterized. The modeling results of drawdown of the Bass Islands aquifer were presented in the ER. However, in some areas (e.g. around the reactor and fuel buildings) the gravel/rock fills in the existing Fermi 2 and proposed Fermi 3 excavation areas may extend to the bedrock aquifer and create a connection between the bedrock aquifer and the surface water bodies in the vicinity of the Fermi site. Dewatering of the bedrock aquifer may also dewater the surface waters through the connection and to some extent through the glacial overburden. That can impact the wetlands at the Fermi site, which are situated at a higher elevation than the lake level of Lake Erie. The wetlands are generally recharged by precipitation and by Lake Erie during high lake levels.		
HY4.2.1-3 ESRP 4.2.1 10 CFR 51.70(b)	Model the dewatering effects of Fermi 3 pre-construction and construction activities on groundwater heads of different materials. Provide the input and output files (in electronic format), calibrations, and sensitivity analysis for the model.	MODFLOW was used to estimate drawdown across the Fermi site during dewatering operations. During the site audit, the NRC staff concluded that the spatial extent of the clay dikes and rock fills at the Fermi site was not fully characterized, but was incorporated into the MODFLOW model. The existing model treats the artificial rock fills, the natural lacustrine clay, and glacial tills as one hydrogeologic unit, though they have very different hydraulic properties according to slug	11/23	The staff wants to determine if the assumptions and inputs for the model would be defensible.

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		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. The model should use locally measured hydraulic properties of the geologic materials as input parameters and consider the presence and effect of the rock fills and clay dikes under the Fermi site, the extent of the Fermi 3 excavated area, recharge rates, and boundary conditions.		
HY4.2.1-4 ESRP 4.2.1 10 CFR 51.70(b)	Provide information on the derivation of hydraulic conductivity/transmissivity values of MODFLOW model cells within excavation areas.	The foundation depths of different buildings for the Fermi 3 differ. Grout would be injected to the geologic materials under different buildings with different foundation depths. The layer thickness used in MODFLOW was 20 meters for the upper Bass Islands Group aquifer. The method used to derive the hydraulic conductivity or transmissivity for the cells within the excavation areas were not provided in the ER.	12/30	The staff needs to determine if the methodology to be used by Detroit Edison is correct.
HY4.2.1-6 ESRP 4.2.1 33 CFR 330 10 CFR 51.45	Provide justification of the use of the drain package of the MODFLOW for modeling the effect of dewatering operations during the construction of Fermi 3. Provide information on how the conductance values of the drainage cells within the excavation areas are	In Section 2.3.1.2.2.5.1 (p. 2-88, last paragraph) of the ER, quarry dewatering in the original regional model was represented using MODFLOW's drain package. The same approach is used for the excavation dewatering analysis for Fermi 3. However, the cells within the excavation areas are much finer in	12/30	The presentation in the ER was unclear and the details of this RAI are somewhat complicated. The staff wants the opportunity to answer questions and explain the request.

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	derived. Provide information on the locations and elevations of the drains in the drainage cells within the excavation areas used in the MODFLOW model.	size in the dewatering analysis than in the regional model and the cells are at different elevations. If wells are used to dewater inside the excavation areas, it is unclear why the drainage package is needed. If the wells are for cells outside the Fermi site, the method used to derive the conductance of the drainage cells at Fermi 3 and information on their locations and depths were not presented in the ER.		
HY4.2.1-11 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.	12/30	The staff wants to determine if we concur with the proposed monitoring programs and if all required information will be provided for inclusion 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.	11/23	The staff wants to determine if we concur with the proposed monitoring program and if all required information will be provided for inclusion in 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.	9/30	The staff wants to discuss the assumptions being used by Detroit Edison for typical and worst day analyses.

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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.	10/30	The staff wants to discuss the assumptions being used by Detroit Edison for typical and worst day analyses.
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.	9/30	The staff wants to discuss the objectives of the modeling exercise and modeling approach.
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	10/30	The staff wants to discuss the modeling approach and results, pending our review of materials provided in the reading room and the Emergency Plan.

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		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.		
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.	10/30	The staff wants to discuss the approach and assumptions to be used by Detroit Edison in the revised transportation analysis.