PMLevyCOLPEm Resource

From: Moser, Michelle
Sent: Friday, September 25, 2009 5:30 PM
To: Snead, Paul
Cc: Bruner, Douglas; LevyCOL Resource
Subject: Levy RAIs
Attachments: Levy RAIs 092509.pdf

Paul,

Please find attached a copy of the Levy RAIs.

Michelle

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Enclosure 1
U.S. Nuclear Regulatory Commission Requests for Additional Information (RAIs)
Levy Nuclear Plant Units 1 and 2
Combined License Application

RAI Number	Question Summary (RAI)	Full Text (supporting information)
5.2.2 – 4 10 CFR 51.71(d) ESRP 5.2.2	Provide calibrated DWRM2 TMR model results that considers local scale conditions and the goodness of fit between simulated and observed hydraulic heads in the vicinity of the LNP site.	The assessment of groundwater usage impacts in the ER is based on the Southwest Florida Water Management District (SWFWMD) District Wide Regulation Model, Version 2, with Telescopic Mesh Refinement (DWRM2 TMR), which uses basin and regional-scale hydraulic property distributions. In Supplement 3 Response to RAIs (Accession No: ML092240658), three modifications were made to the model to better represent the Levy Nuclear Plant (LNP) site conditions. Model results indicated a poor goodness of fit between simulated and observed hydraulic heads in the vicinity of the LNP site. Calibrate the DWRM2 TMR model to reflect local scale conditions in order to improve the fit between simulated and observed hydraulic heads in the vicinity of the LNP site. Consider consulting with SWFWMD staff when doing this calibration. Provide documentation of the DWRM2 TMR model modifications that are made and any consultations with SWFWMD staff regarding calibration of the local scale groundwater conditions. In addition, provide updated versions of all figures that were submitted in Supplement 3 Response to NRC RAI # 5.2.2-3 (Accession No: ML092240658) for results generated using the recalibrated groundwater model.
9.3 – 2 10 CFR 51.71(d) ESRP 9.3	Clarify how wetlands were included as a part of the exclusionary screening criteria for Regional Ecological Features.	Environmental Report (ER) Table 9.3.1 (page 9-86) and Progress Energy Florida (PEF's) (2007) New Nuclear Baseload Generation Addition, Evaluation of Florida Sites (EFS) Table 3-1 of Attachment IV (page 51) state that known mapped wetlands/estuaries and designated critical habitat for Federal threatened and endangered species served as the Region of Interest (Step 1) exclusionary screening criteria for the data category of Regional Ecological Features. Clarify how this screening exercise was conducted for wetlands and provide a copy of the specific data sources for wetlands information used in the analysis.

RAI Number	Question Summary (RAI)	Full Text (supporting information)
9.3 – 3 10 CFR 51.71(d) ESRP 9.3	Clarify whether analyses were based on a 6,000-ac site.	The wetlands screening criterion for potential sites (P6 in ER Table 9.3-2, page 9-89; and EFS Table 5-1 of Attachment IV, page 60), candidate sites ("Disruption of Important Species/Habitats and Wetlands" criterion and "Dewatering Effects on Adjacent Wetlands Criterion" in EFS Table 3, page 25; and ER Tables 9.3-7, pages 9-99), and alternative sites ("Disruption of Important Species/Habitats and Wetlands" criterion and "Dewatering Effects on Adjacent Wetlands Criterion" in EFS Table 4, page 30; and ER Table 9.3-8, pages 9-102) use a utility function and analysis for wetlands that is based on the acreage or percentage of wetlands within a 6000 ac site, roughly a 3-mile diameter circle (EFS page 16) (Steps 3 and 4). Staff have several questions related to these wetland analyses. The first question is presented in this RAI and the others are presented in RAIs 9.3 – 4 to 9.3 – 10. A 3-mile diameter circle is equivalent to about 4,500 ac, not 6,000 ac. Clarify that analyses were based on 6,000-ac sites.
9.3 – 4 10 CFR 51.71(d) ESRP 9.3	Clarify whether a uniform metric for wetlands was used to account for size variations between potential sites.	Both the ER (page 9-49) and the EFS (page 55) state that potential sites were generally 6,000 ac in size, although sites as small as 2,000 ac were considered. Identify which potential sites varied from the 6,000-ac size category and provide information to indicate the size of these sites. In the EFS, Appendix C of Attachment IV, The Technical Basis for Screening Criterion Ratings, Criterion P6 - Wetlands (page 107 of EFS) indicates that acres were used as the basis for assigning the ratings score. Clarify why the proportion or percentage of wetlands was not included as a metric in the analyses.
9.3 – 5 10 CFR 51.71(d) ESRP 9.3	How were NWI maps used in analysis of alternative sites, and were the NWI data supplemented by other data sources? If so, identify the sources and explain how they were used.	The table for Criterion P6 - Wetlands (page 107 of EFS) indicates that National Wetland Inventory (NWI) maps served as the source for estimating the amount of wetlands present on most of the 20 potential sites, but not for all sites (see page 188 of EFS). Explain why NWI maps were not used for all potential sites. Identify what other wetland data sources were used, such as FLUCCS maps. In the Comments and Discussion (column), page 188 of EFS, it states "Could not compile local map. Wetland polygon data from radius search only." Clarify what is meant by this statement. The table for Criterion P6 - Wetlands (page 107 of EFS) states that the wetland estimates do not include riverine wetlands. Clarify this statement. For example, are areas of open water being excluded or are floodplain wetlands associated with riverine systems being excluded?

RAI Number	Question Summary (RAI)	Full Text (supporting information)
9.3 – 6 10 CFR 51.71(d) ESRP 9.3	Clarify discrepancies in wetland acreage as reported for each site in the EFS and AA.	The table for Criterion P6 - Wetlands (page 107 of EFS) identifies 61 acres of wetlands on the Levy 2 site (i.e., the preferred LNP site analyzed in the ER). Applying the rating scale, Levy 2 was assigned a rating of 4 for containing between 60 and 300 acres of wetlands (Table 2, Potential Site Preliminary Technical Evaluation Screening, page 22 of EFS; Table 9.3-4, Technical Evaluation Screening for Potential Sites, page 9-92 of ER). Examining NWI maps suggests that many hundreds of acres of wetlands are present on the Levy 2 site. CH2M Hill's (2009) Levy Nuclear Units 1 and 2 Section 404(b)(1) Alternatives Analysis (AA) identifies 1742.38 ac of wetlands on the LNP site using the NWI maps, and 1691.96 ac using FLUCCS maps (Table 7, Total Estimated Wetland Acreages for Each of the Five Final Candidate Siting Areas, page 34). The AA estimates correspond closely with the actual field delineations conducted for the LNP site – about 2000 ac of wetlands over the 3505 ac LNP site. Table 7 from the AA identifies 2173.15 acres of wetlands (based on NWI maps) for Putnam as compared to 105 ac of wetlands in EFS Criterion P6 Table. Similarly, the AA identifies1168.97 acres of wetlands (based on NWI maps) for Crystal River as compared to 123 acres of wetlands in the EFS. There are similar inconsistencies in the number of wetlands for the other sites. Clarify these wetland acreage discrepancies between the EFS and the AA and, as appropriate, revise the estimated number of wetlands for each site and ratings within the EFS and ER.
9.3 – 7 10 CFR 51.71(d) ESRP 9.3	Clarify the boundaries of the Levy 2 site as reported in the EFS and ER.	Aerial photos in the unredacted version of the EFS (Appendix A, page 10 of 22) suggest that the geographical location for the Levy 2 site (i.e., the preferred LNP site analyzed in the ER) is not consistent with the location of the LNP site as presented in the ER. Provide clarification.
9.3 – 8 10 CFR 51.71(d) ESRP 9.3	Was a uniform wetlands metric used to account for size variations between candidate/alternative sites in the "Disruption of Important Species/Habitats and Wetlands" criterion?	Were generalized 6000-acre circles used once the screening process identified the 5 best alternative sites (the "alternate" sites) or was a more refined, site-specific evaluation used to compare the best alternative sites?

RAI Number	Question Summary (RAI)	Full Text (supporting information)
9.3 – 9 10 CFR 51.71(d) ESRP 9.3	Describe how the overall site rating for wetlands was reached for the "Disruption of Important Species/Habitats and Wetlands" criterion.	Describe how the overall site rating for wetlands was reached for the "Disruption of Important Species/Habitats and Wetlands" criterion (see EFS page 187). The wetlands component includes a total wetlands area element, a wetlands quality element, and a "flexibility to avoid wetlands during construction" element. Define each element, explain the basis for the scoring, and identify the rating scale used (rating scale appears to be the same as defined in P6 of ER Table 9.3-2, page 9-89 and EFS Table 5-1, page 59). Clarify how the wetland area discrepancies, identified in 9.3-6 above for the alternative sites, affect the wetland ratings for this component.
9.3 – 10 10 CFR 51.71(d) ESRP 9.3	Explain how candidate/alternative sites were compared with respect to potential dewatering impacts on wetlands.	The "Dewatering Effects on Adjacent Wetlands" criterion presented in EFS Tables 3 and 4 (page 25 and 29, respectively) and ER Tables 9.3-8 and 9.3-9, (pages 9-99 and 9-102, respectively) is subject to many of the same questions noted in 9.3 – 7 and 9.3 – 8 above. Referring specifically to the evaluation process detailed on EFS page 188, this includes the issue of 6,000 acre candidate/alternative sites, as well as a wetlands quality element represented by forested wetlands. The EFS (page 187) states that high quality wetlands are denoted by forested and scrub-shrub wetlands; however, only forested wetlands are listed as a component of the Dewatering Effects on Adjacent Wetlands criterion. Clarify how the wetland area discrepancies, identified in 9.3 – 6 above for the alternative sites, affect the ratings for this component.
9.3 – 11 10 CFR 51.71(d) ESRP 9.3	Provide an estimate of wetlands and other sensitive terrestrial ecological resources potentially affected by the construction of reservoirs required for certain alternative sites.	The need for a reservoir to provide a supplemental water source figured into the evaluation of the alternative sites and the selection of the preferred alternative (see ER Section 9.3.3, Summary Results of the Alternative Sites and Environmental Impact Evaluation, pages 9-61 to 9-81; EFS Section 4.1.1 Water Supply, page 213). Provide (at a minimum) a general estimate of wetlands and other sensitive terrestrial ecological resources (e.g., threatened and endangered species, floodplains) that would be impacted if the construction of reservoirs were required.
9.3 – 12 10 CFR 51.71(d) ESRP 9.3	Why did the ecology screening criterion for threatened and endangered species not consider state listed species along with federal listed species?	The ecology screening criterion for potential sites (P5 in ER Table 9.3-2, page 9-89; and EFS Table 5-1 of Attachment IV, page 60), candidate sites ("Disruption of Important Species/Habitats and Wetlands" criterion in EFS Table 3, page 25; and ER Tables 9.3-7, pages 9-99) and alternative sites ("Disruption of Important Species/Habitats and Wetlands" criterion in EFS Table 4, page 30; and ER Table 9.3-8, pages 9-102) uses a utility function and analysis for threatened and endangered species that is based on the number of Federally listed aquatic and

RAI Number	Question Summary (RAI)	Full Text (supporting information)
9.3 – 12 (Cont.)		terrestrial species that may occur within the host county (Steps 3 and 4). Staff have several questions related to these analyses. The first question is presented in this RAI and the others are presented in RAIs 9.3 – 13 to 9.3 – 14. Clarify why state listed species were not included in the analysis. NUREG-1555 states that the definition for important species includes both federal and state listed species, as well as other species that have economic value, are relied on by a valuable species, play an ecological role, or are ecologically sensitive.
9.3 – 13 10 CFR 51.71(d) ESRP 9.3	Clarify why FNAI occurrence data for Federal and state listed species were not used in the analysis of candidate and alternative sites.	Clarify why Florida Natural Areas Inventory (FNAI) occurrence data for Federal and state listed species were not used for the threatened and endangered species utility function and analysis of the candidate sites and alternative sites. Revise the ER and EFS with this information, if appropriate.
9.3 – 14 10 CFR 51.71(d) ESRP 9.3	Describe how the overall site rating for important terrestrial species/habitats was reached for the "Disruption of Important Species/Habitats and Wetlands" criterion.	The important terrestrial species/habitats component for the "Disruption of Important Species/Habitats and Wetlands" criterion (see EFS pages 182-187) includes two elements: habitat quantity/quality and flexibility to avoid protected species during construction. Define each element, explain the basis for the scoring, and identify the rating scale used (Note – the rating scale appears to be based on a 6000-ac baseline site; see 9.3 – 4 and 9.3 – 8 above for questions regarding the use of 6000 ac as a baseline). Describe how the overall site rating for the important terrestrial species/habitats component was reached (EFS page 186).
9.3 – 15 10 CFR 51.71(d) ESRP 9.3	Explain why FEMA floodplain maps were not used as the technical basis for the flooding screening criterion for all 20 potential sites. Explain why the Levy 2 site was not evaluated for its location in a 100-year floodplain. Revise the ER and EFS as appropriate.	The initial Flooding screening criterion for potential sites (P2 in ER Table 9.3-2, page 9-88; and EFS Table 5-1 of Attachment IV, page 59) used a utility function and analysis based on the difference between mean site elevation and mean water elevation from the U.S. Geological Survey (USGS) topographic maps and gauging station measurements. Optimal sites are described as relatively flat and above the 100-year floodplain, adjacent to streams showing topographic relief (ER page 9-50, ESF page 56). Candidate and alternative sites were screened further by examining the FEMA 100-year floodplain maps and using a refined rating scale (see EFS page 141). The Levy 2 site is described as not being located in the 100-year floodplain (EFS page 142, unredacted version; and page 217) and assigned a score of 5. However, FEMA floodplain maps show portions of the LNP site as lying within the 100-year floodplain. Confirm the flooding scores for all candidate/alternative sites. Explain why FEMA floodplain maps

RAI Number	Question Summary (RAI)	Full Text (supporting information)
9.3 – 15 (Cont.)		were not used as the flooding screening criterion for all 20 potential sites. Revise the ER and EFS as appropriate.
9.3 – 16 10 CFR 51.71(d) ESRP 9.3	Clarify why there is a similar level of detail and information in the Technical Evaluation for the candidate and alternative site analyses.	As part of the Technical Evaluation for the candidate sites and the alternative sites, each site was rated and scored for a set of 34 general criteria that included 40 parameters that spanned health and safety, environmental, socioeconomic and engineering factors (see ER Section 9.3.2.1.4 beginning on page 9-50 and ER Section 9.3.2.1.5 beginning on page 9-53). Clarify why the level of detail and information in the Technical Evaluations for ER Table 9.3-7 for candidate sites (page 9-98) and ER Table 9.3-8 for alternative sites (page 9-101) are so similar (i.e, why is there so little refinement between these steps?).
9.3 – 17 10 CFR 51.71(d) ESRP 9.3	Clarify how the on-ground inspections of the alternative sites were used to refine analyses for important terrestrial species/habitats.	On-ground inspections (e.g., foot, vehicle drive-overs) of the 5 alternative sites were conducted to further evaluate ecological resources (see ER page 9-56, EFS page 75). Clarify how these inspections were used to refine the ecological criteria from the Technical Evaluation, such as the "Disruption of important species/habitats and wetlands" criterion (see EFS pages 182-187) or the "Dewatering Effects on Adjacent Wetlands" criterion (see EFS pages 187-188).
9.3 – 18 10 CFR 51.71(d) ESRP 9.3	Explain why transmission line impacts on ecological resources were rated MODERATE for Crystal River and SMALL for the LNP.	Explain why transmission line impacts on ecological resources were rated MODERATE for Crystal River (ER page 9-67) and SMALL for the LNP (ER page 9-81) when land commitments, construction impacts and operational impacts are generally expected to be similar.
9.3 – 19 10 CFR 51.71(d) ESRP 9.3	Explain why the Dixie site was carried forward for more detailed analysis as a candidate site when land acquisition was not feasible within a timeline that would meet PEF's business objectives.	Explain why the Dixie site was carried forward as a candidate site for more detailed analysis when land acquisition was not feasible within a timeline that would meet PEF's business objectives (see ER page 9-58). Clarify why the Dixie site was not initially screened out using a bounding assumption in the initial evaluation process (see ER page 9-45, EFS page 7).

RAI Number	Question Summary (RAI)	Full Text (supporting information)
9.3 – 20 10 CFR 51.71(d) ESRP 9.3	Explain why the Crystal River site was carried forward for more detailed analysis as a candidate site when there were over-riding concerns about the strategic reliability of concentrating new PEF generating capacity at an existing site susceptible to a severe weather event.	Explain why the Crystal River site was carried forward as a candidate site for more detailed analysis when there were over-riding concerns about the strategic reliability of concentrating new PEF generating capacity at an existing site susceptible to a severe weather event (e.g., hurricane), and where generation loss from such an event could result in a large scale impact to the PEF system (see ER page 9-59, EFS page 32 & 36). Clarify why the Crystal River site was not initially screened out using a bounding assumption in the initial evaluation process (see ER page 9-45, EFS page 7).

Enclosure 2
U.S. Army Corps of Engineers' Requests for Additional Information
Levy Nuclear Plant Units 1 and 2
Combined License Application

RAI Number	Question Summary (RAI)	Full Text (supporting information)
USACE – 14 33 CFR 320.4 40 CFR 230.10	Submit an alternative sites analysis, which meets USACE requirements under the 404(b)(1) guidelines.	On August 28, 2009, USACE provided to PEF via email (and copied to NRC) a list of various concerns and comments in regard to the site selection process and the Least Environmentally Damaging Practicable Alternative (LEDPA) analysis (ADAMS Accession No. ML092680817). This RAI incorporates that list by reference. The USACE strongly recommends that in consideration of the RAIs identified by the NRC and the USACE for the site selection process; and since additional information, details, and clarifications are required for PEF to demonstrate that the LEDPA has been identified; that a revised alternative sites analysis be submitted as a complete and stand alone document. The document should include all maps, tables and other information which describe and document the site selection process that was used to evaluate and determine the suite of alternative sites, and that the document reasonably evaluate, differentiate and compare the practicable alternatives on the overall environment, and the aquatic environment in particular. (Note: The USACE considers wetlands and their various ecological functions and values to be components of the aquatic environment.) Submit a single, complete document that addresses the USACE's comments in the mailed list dated August 28 to aid the review and evaluation of the alternative sites analysis.