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Sent: Tuesday, October 26, 2010 10:24 AM
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Subject: EPA's comments on DEIS for Levy Nuclear Plant Units 1 and 2
Attachments: NRC-DEIS Comment Letter.pdf; pic19300.gif

Mr. Douglas Bruner, Project Manager
Environmental Projects Branch
Mail Stop T7-E18
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Dear Mr. Bruner,

Forwarded herewith are U.S. Environmental Protection Agency (EPA) Region 4's comments on the Draft Environmental Impact Statement (DEIS) for Levy Nuclear Plant Units 1 and 2, Application for Combined Licenses (COLs) for Construction Permits and Operating Licenses (NUREG-1941). We are also mailing hard copies to you, the Chief of the NRC Rulemaking and Directives Branch, and Mr. Don Hambrick of the USACE Jacksonville District . These comments are complied from several programs here at EPA. Thank you for assistance on this matter; if you should have any questions, please do not hesitate to call.

(See attached file: NRC-DEIS Comment Letter.pdf)

best regards,

Paul Gagliano

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10/26/2010

Chief, Rulemaking and Directives Branch
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Washington, DC 20555-0001

Subject: **Comments on Draft Environmental Impact Statement (DEIS) for Levy Nuclear Plant Units 1 and 2, Application for Combined Licenses (COLs) for Construction Permits and Operating Licenses (NUREG-1941), Levy County, FL; EIS Filed: 08/06/10; CEQ Federal Register: 08/13/10 CEQ Number: 20100311; ERP Number: NRC-E06029-FL**

Dear Sir:

Pursuant to Section 309 of the Clean Air Act (CAA) and Section 102(2)(C) of the National Environmental Policy Act (NEPA), the U.S. Environmental Protection Agency (EPA) Region 4 has reviewed the "Draft Environmental Impact Statement (DEIS) for Combined Licenses (COLs) for Levy Nuclear Plant Units 1 and 2" dated August 2010. This DEIS was jointly developed by the U.S. Nuclear Regulatory Commission's (NRC) with the assistance of the Regulatory Branch of the Jacksonville District, U.S. Army Corps of Engineers (USACE). EPA understands that this DEIS has been prepared in response to an application submitted to the NRC by Progress Energy Florida, Inc. (PEF) for combined construction permits and operating licenses (combined licenses or COLs).

The proposed Federal actions related to the PEF application are: (1) NRC issuance of COLs for two Westinghouse Electric Company, LLC (Westinghouse) AP1000 pressurized water reactors at the Levy Nuclear Plant (LNP) site in Levy County, Florida, and (2) issuance of a USACE permit to perform certain construction activities on the site. EPA understands that after considering the environmental aspects of the proposed action, the NRC staff's preliminary recommendation to the Commission will be that the COLs be issued as proposed. This tentative recommendation is reportedly based upon: (1) a review of the completed application, including the Environmental Report (ER), submitted by PEF; (2) consultation with Federal, State, Tribal, and local agencies; (3) a review by the project team; (4) the consideration of public scoping comments; and (5) the assessments summarized in this DEIS, including the potential mitigation measures identified in the ER and the DEIS. EPA notes that while COLs are necessary to construct and operate the new nuclear units, PEF may still have to obtain permits and approvals from other Federal, State, Tribal, and local agencies.

The USACE has participated in preparing this DEIS as a "cooperating agency" to the NRC, as well as serving as part of the project review team, comprised of NRC staff, EPA staff, contractor staff, and USACE staff.

In addition to a license from the NRC, proposed nuclear power plants typically require a permit from USACE when impacts on waters of the United States are proposed. Therefore, the NRC and the USACE decided that the most effective and efficient use of Federal resources in the review of nuclear power projects would be achieved by a cooperative agreement. NRC and USACE signed a Memorandum of Understanding (MOU) on 9/12/2008 regarding the review of nuclear power plant license applications. Therefore, the Jacksonville District of USACE is participating as a cooperating agency as defined in 10 CFR 51.14.

The DEIS appropriately notes that the Federal Water Pollution Control Act (Clean Water Act) requires that the USACE apply the criteria set forth in the 404(b)(1) Guidelines in evaluating projects that propose to discharge dredged or fill material into waters of the United States. The USACE must also determine through its Public Interest Review (PIR) whether the proposed project is contrary to the public interest. EPA understands that the USACE permit decision, including its evaluation under the 404 Guidelines and the PIR, will be documented in a Record of Decision (ROD) to be issued following the issuance of the Final EIS. As part of the USACE public comment process, USACE released a public notice on 3/16/2009 to solicit comments from the public about PEF's proposed preconstruction activities at the LNP site. USACE held a joint 404 permit public hearing in conjunction with the NRC public meeting on the DEIS on 9/23/2010 in Crystal River, FL, which EPA Region 4 staff attended.

The location for proposed LNP Units 1 and 2 is a "greenfield" site in Levy County, Florida, about 7.9 miles east of the Gulf of Mexico and 30.1 miles west of Ocala, Florida. The proposed Units 1 and 2 would be completely built within the confines of PEF's LNP site. EPA Region 4 participated in a number of meetings including the Site Audit, Government-to-Government meetings, Open Houses, Public Scoping Meetings, technical teleconferences, Least Environmentally Damaging Practicable Alternative (LEDPA) meetings, and Public Hearings on the 404 permit.

Under Section 309 of the CAA, EPA is responsible for reviewing and commenting on major federal actions significantly affecting the quality of the human environment. EPA concurs with NRC's use of the following goals for developing an effective and meaningful EIS:

- Defining the proposed action that is to be the subject of the EIS;
- Determining the scope of the EIS and identifying the significant issues to be analyzed in-depth;
- Identifying as part of the detailed study those issues that are significant and those that are peripheral or that may not be as significant;
- Identifying any environmental assessments and other EISs that are being or will be prepared that are related to but are not part of the scope of the EIS being considered;
- Identifying other environmental review and consultation requirements related to the proposed action;
- Identifying parties consulting with the NRC under the NHPA, as set forth in 36 CFR 800.8(c)(1)(i);

- Indicating the relationship between the timing of the preparation of the environmental analyses and the Commission's tentative planning and decision-making schedule;
- Identifying any cooperating agencies and, as appropriate, allocating assignments for preparation of components of the EIS;

NRC's environmental review of the PEF application has been focused on determining if the two nuclear units of the proposed design can be constructed and operated at the LNP site without unacceptable adverse impacts on the human environment. The purpose of PEF's requested USACE action is to obtain a permit to perform regulated activities that would affect waters of the United States. The DEIS therefore appropriately includes 4 major areas: (1) the results of the NRC staff's analyses, which consider and weigh the environmental effects of the proposed action; (2) potential mitigation measures for avoiding or reducing adverse effects; (3) the environmental impacts of alternatives to the proposed action; and (4) the NRC staff's preliminary recommendation regarding the proposed action. As part of the NEPA process, the NRC appropriately reviewed the PEF application and the Environmental Report (ER), as well as consulting with Federal, State, Tribal, and local agencies. The NRC's process was based upon the guidance set forth in NRC's NUREG-1555, *Environmental Standard Review Plan – Standard Review Plans for Environmental Reviews for Nuclear Power Plants*. In addition, the NRC staff considered the public comments related to the environmental review received during the scoping process, which are included in Appendix D of the DEIS.

The NEPA process commenced with the NRC's issuance of the "notice of acceptance" for docketing of the application for the COL and published it in the Federal Register on 10/14/2008 (73 FR 60726). A public notice was then issued that stated that the NRC intended "to gather the information necessary" to prepare an EIS and concurrently pursue a Limited Work Authorization (LWA) for the LNP site under 10 CFR 50.10(d). The public notice appropriately noted that the EIS would include "alternatives to the proposed action (issuance of the LWA and COL)," such as "no action, reasonable alternative energy sources, and alternate sites." As a result of this notice, EPA provided EIS scoping comments to NRC (dated 12/19/2008), as well as commenting on the proposed construction activities mentioned in LNP's "Limited Work Authorization (LWA) and Site Redress Plan." PEF later concluded (5/1/2009) that the LWA would not accomplish its objectives and decided to no longer pursue an LWA. PEF notified NRC that it was withdrawing its request for an LWA and requested that the NRC not continue to perform any review activities associated with an LWA.

To guide its assessment of the environmental impacts of a proposed action or alternative actions, EPA concurs with the NRC's decision to follow an established standard for disclosing the significance for impacts based upon Council on Environmental Quality (CEQ) guidance found in 40 CFR 1508.27. Table B-1 of 10 CFR Part 51, Subpart A, Appendix B, provides the following definitions of the three significance levels:

- SMALL – Environmental effects are not detectable or are so minor that they will neither destabilize nor noticeably alter any important attribute of the resource.

- MODERATE – Environmental effects are sufficient to alter noticeably, but not to destabilize, important attributes of the resource.
- LARGE – Environmental effects are clearly noticeable and are sufficient to destabilize important attributes of the resource.

EPA rates this DEIS as "EC-2" (Environmental Concerns - Category 2) meaning (see Detailed Comments) that EPA's review has identified environmental impacts that should be avoided, minimized, or mitigated in order to fully protect the environment, and additional information is requested in the FEIS. Impact to wetlands is a primary concern that needs to be further addressed in the ongoing process. Corrective measures may require changes to the current site layout or application of mitigation measures that could reduce the environmental impacts. EPA would like to work with the NRC and COE to reduce these wetland impacts. While the DEIS contained significant information that allowed EPA to assess most environmental impacts as part of our mission to fully protect the environment, EPA is requesting additional information on a number of issues including the on-going structural safety analysis of the AP1000 shield building and the potential for long-term storage of spent fuel at LNP in light of the new "Waste Confidence" regulation.

The identified additional information, data, analyses, and discussions should be included in the FEIS. In addition to EPA's review of the DEIS, EPA has an interest in ensuring plant/site safety and comprehensive emergency preparedness for the proposed action, and we look forward to reviewing the NRC's Safety Evaluation Report anticipated to be published in 2011.

We appreciate the opportunity to comment on this action. Please include us in any notifications of future interagency meetings. If you wish to discuss EPA's comments, please contact me at 404/562-9611 (mueller.heinz@epa.gov) or Paul Gagliano, P.E. of my staff at 404/562-9373 (gagliano.paul@epa.gov) and for wetlands issues contact Ron Miedema from EPA's Wetlands and Marine Regulatory Section at 404/ 561-616-8741 (miedema.ron@epa.gov).

Sincerely,

Heinz J. Mueller, Chief
NEPA Program Office
Office of Policy and Management

Attachment: Detailed Comments
Cc:
Mr. Douglas Bruner, Project Manager, NRC
Mr. Gordon A. Hambrick, III, Senior Project Manager, COE, Jacksonville District

Detailed Comments on the DEIS

General Comment on Wetlands In order to avoid and minimize impacts in high quality wetland systems associated with the pipeline installation, EPA recommends the FEIS provide an analysis of other alternatives such as tunneling or horizontal directional drilling. The FEIS should also provide more specific information on the wetland functions and values that would be impacted at the non-preferred alternative site locations. It is difficult to determine the quality of wetland impacts associated with the alternative sites when a reasonable wetland functional analysis has not occurred.

2.4.2.4 Aquatic Monitoring EPA commends PEF for the extensive pre-applicant monitoring programs at the proposed LNP discharge location, where a current NPDES permit (FL0000159) for Crystal River Energy Complex (CREC) Units 1, 2, and 3 requires seasonal flow restrictions and stock enhancement of a number of important aquatic species (red drum, spotted seatrout, pink shrimp, striped mullet, pigfish, silver perch, blue crab, and stone crab) in order to comply with Clean Water Act Section 316(b). While there are currently no requirements in the NRC operating license for CREC Unit 3 to monitor aquatic resources (including specific aquatic ecological monitoring of the algal community, benthic invertebrates, or fish), PEF has nevertheless reportedly conducted a year of sampling events for the Cross Florida Barge Canal (CFBC) and CREC discharge area to characterize the aquatic communities in both of these areas. This work has reportedly included the following:

- Four (4) stations in the CFBC were sampled, extending from the Inglis Lock downstream to the mouth of the CFBC at the Gulf of Mexico and offshore of the mouth of the CFBC. Two (2) other stations associated with the CREC discharge were also sampled to establish background data on aquatic communities at the point of discharge into Crystal Bay and offshore of the point of discharge. These six (6) stations were all sampled for motile macroinvertebrates, plankton, invertebrates, and fish.
- Water quality in the CFBC was assessed during multiple sampling events, including mineral concentrations, dissolved oxygen, carbon, temperature, salinity, pH, dissolved solids, and suspended solids were measured. Water quality in the CREC was measured at stations 3 and 4, and at two additional stations within the CREC discharge canal structure. Mineral concentrations, carbon, dissolved oxygen, temperature, pH, salinity, dissolved solids and suspended solids were measured.
- The Old Withlacoochee River (OWR) stations were established to provide additional information about aquatic communities occurring between the Inglis Dam and the CFBC in the OWR. Water-quality samples were collected while biological sampling was conducted over a 3-month period.

EPA understands that pre-operational surveys and monitoring are planned to be conducted for a period of time, and that statistical analysis will be used to establish seasonal and climatological baseline, biological and water quality conditions. EPA requests that PEF submit a CFBC and Withlacoochee River Survey and Monitoring Plan to EPA for review prior to initiation of formal monitoring. EPA may have specific monitoring recommendations and/or requirements after the permit application has been submitted.

2.4.1.2 Existing Cover Types and Wetlands (pg 2-54) The DEIS states "PEF expects to acquire rights-of-way as necessary to provide a typical width of 220 ft for the proposed 500-kV transmission lines and a typical width of 100 ft for the proposed 230-kV transmission lines." In order to protect high quality wetland systems, EPA recommends that the all rights-of-way be reduced to the minimum dimensions practicable.

2.6.2.2 "Minoriy" Population (Volume 2, Contents) correct typo

3.2 Proposed Plant Structures, Systems, and Components (pg 3-3) As part of the EIS process, the review team evaluated the environmental effects of constructing and operating two AP1000 reactors at the LNP site, each with a core power rating of 3415 MW(t). The reactor specified in the application is Revision 17 to the Westinghouse Electric Company, LCC AP1000 certified design, and the new units are proposed to use a closed-cycle, wet-cooling system that features mechanical draft cooling towers for heat dissipation. Westinghouse reportedly submitted Revision 17 to the AP1000 Design Certification Amendment on 9/22/2008, and it is currently undergoing NRC review.

Within the past year, EPA understands that concerns have been raised by the NRC that certain structural components of the revised AP1000 shield building may not be able to withstand design loads. The shield building is designed to protect the reactor's primary containment from severe weather and other events, as well as serving as a radiation barrier and also supporting an emergency cooling water tank. It is EPA's understanding that the NRC is currently reviewing the remainder of the next-generation reactor's design certification amendment application, but has informed Westinghouse that it expects the company to make design modifications and conduct safety testing to ensure the shield building design can meet its safety functions.

The FEIS should address the status of the Westinghouse AP1000 certification review and related issues, particularly the analysis of the structural integrity of the AP1000. We understand that the Safety Evaluation Report will address these issues in even more detail, and that the certification review may be completed as soon as December 2010. EPA understands that Revision 15 of the AP1000 design is codified in 10 CFR Part 52, Appendix D, and that because the NRC staff is currently reviewing Revision 17, the EIS incorporates results of the review of Revision 15 and insights from the ongoing review of Revision 17. EPA concurs with NRC's plan to conduct an additional environmental review if changes result in the final design being significantly different from the design considered in the DEIS.

3.2 Figure 3-4; LNP Units 1 and 2 Detailed Layout (pg 3-7) The FEIS should clarify the reasons why PEF selected the detailed site layout as it is presently configured. It appears that by shifting the project further south, overall wetland impacts would be lessened. Moving the site layout southward appears to reduce the length of the transmission line corridor and reduce impacts to other onsite wetlands.

3.4.2.6 Diesel Generators (pg 3-29) The DEIS states "Diesel generators would be used on the site to provide a backup source of power to selected nonsafety electrical loads." The FEIS should provide a comparison of other feasible alternative sources of electrical power (ie.,other alternative fuel sources) that may have less impact on the environment.

4.1.1 The Site, Vicinity, Region, and Offsite Areas (pg 4-4) The DEIS states "Approximately 150 ac on the site would be disturbed for temporary facilities, such as material storage areas, laydown areas, parking areas, and a temporary buffer surrounding the construction zone. Areas temporarily disturbed while creating these facilities would revert to open grassy areas after use of such facilities are completed, which would be a permanent conversion from pine plantations, forested wetlands, and mixed forested." EPA requests these areas be restored back to forested and mixed forested wetland systems if there are no safety or other serious operational reasons that would require these areas to be open grassy areas.

Table 4 -1; LNP Onsite Land Use Impacts by Major Component (pg 4-5) Please provide clarifying information for the impacts associated with the items listed under the "Facility" heading. It is unclear what specific wetlands are associated with Miscellaneous Fill, Miscellaneous Pipeline, and Miscellaneous structures.

4.1.1 The Site, Vicinity, Region, and Offsite Areas (pg 4-10) The DEIS states "Initially proposed routing of the blowdown pipeline south of the CFBC crosses several tidal creeks and would adversely impact approximately 4.5 acres of salt marsh habitat. The staff is aware that PEF has proposed to the FDEP an alternative route to avoid this important habitat." EPA concurs that an alternate route should be established to avoid these 4.5 acres of salt marsh wetland.

4.3.1.1 Terrestrial Resources – Cover Types (pg 4-29) The DEIS states that impacts will temporarily occur to 149.6 acres of wetlands that will later be allowed to regenerate naturally from the existing wetland seed bank. EPA believes theses wetland impacts will become permanent if the forested systems are not replanted and restored to their original condition. Therefore, EPA recommends forested wetland systems be replanted in order to insure impacts are temporary only.

4.3.1.1 Terrestrial Resources – Wetlands (pg 4-34, 35) The DEIS states temporary dewatering of wetlands may occur in order to install the blowdown pipelines and other structures. The document also states that this may occur for 2 to 4 year period and no long-term effects on adjacent wetlands are anticipated. EPA recommends that a "wetland functional analysis" be conducted on the adjacent wetlands and any adverse wetland impacts that are identified due to dewatering be mitigated.

4.3.1.7 Wetland Mitigation Plan (pg 4-67) The DEIS states the LNP project would result in the loss of 289 UMAM functional units and the mitigation plan would generate 490 UMAM Units. The FEIS should provide a detailed mitigation plan and the UMAM scores for the impact and mitigation sites.

5.3.1.1 Terrestrial Resources – Site and Vicinity: Impacts of Cooling-Tower Operations (pg 5-20) As part of the DEIS process, isopleth maps showing modeled salt deposition in different meteorological data years were appropriately created. The DEIS mentions that the maximum predicted offsite deposition rate would be 6.83 kg/ha/mo of total solids at the property boundary west of the cooling towers, as determined from the 2002 meteorological data year. Offsite deposition rates would decrease significantly with

increasing distance from the proposed plant site, reportedly approaching one-third of the maximum offsite rate at 3280 ft from the site boundary. The FEIS should provide the predicted maximum rate at the nearest residence (which EPA understands may be less than 6000 ft from the cooling towers) and the closest public park and recreational area.

5.3.1.1 Terrestrial Resources – Impacts on Wetlands from Stormwater Runoff and Groundwater Withdrawal (pg 5-24) The DEIS states that up to 2092.9 acres of wetlands could be adversely affected over the course of the 60 years that ground water is pumped to support the LNP project. The FEIS should provide an analysis of other alternative sources of water to support the LNP project.

6.1.6 Radiological Wastes (pg 6-13) The DEIS appropriately notes the quantities of buried radioactive waste material (low-level, high-level, and transuranic wastes) in Table S–3 (Table 6-1). For low-level waste (LLW) disposal at land burial facilities, the Commission notes in Table S–3 that there should be no significant radioactive releases to the environment. By the time LNP Units 1 and 2 would begin operation, the DEIS reports that PEF expects to have entered into an agreement with an NRC-licensed facility that would accept LLW from LNP. If PEF has not entered into an agreement with an NRC-licensed facility that would accept LLW from LNP, PEF apparently proposes to implement measures to reduce or eliminate the generation of Class B and C wastes, extending the capacity of the onsite waste storage to more than 2 years. If needed, PEF has committed to construct additional storage facilities onsite and has indicated that such facilities would be designed and operated to meet the guidance in Appendix 11.4-A of the Standard Review Plan, NUREG-0800. Finally, PEF may enter into an agreement with a third party contractor to process, store, own, and ultimately dispose of LLW from LNP. Because PEF will have to choose one or a combination of these three options, the DEIS appropriately considers the environmental impacts of each of these three options.

Sine the publication of the DEIS, the NRC has determined (on 9/15/2010) that radioactive wastes from nuclear power plants can be safely stored for at least 60 years beyond the licensed life of any reactor. The final revisions to its "Waste Confidence" regulation revised the number of storage years upward by 30 years, and asserted that "sufficient repository capacity will be available when necessary." The FEIS should clarify the impact of this revision on the proposed LNP project, as this new determination finds that spent nuclear fuel can be stored safely and securely without significant environmental impacts for at least 60 years after operation at any nuclear power plant. EPA recommends that the FEIS cite any new analyses for longer-term storage regarding scientific knowledge relating to spent fuel storage and disposal. The FEIS should also mention any developments with the Presidential Blue Ribbon Commission on alternatives for dealing with high-level radioactive waste if there are such developments before FEIS publication.

6.2.2.1 Normal Conditions (pg 6-28) Shipping casks have reportedly not been designed for the spent fuel from advanced reactor designs such as the Westinghouse AP1000. Information in the Early Site Permit Environmental Report Sections and Supporting Documentation (INEEL 2003) indicated that advanced LWR fuel designs would not be significantly different from existing LWR designs; therefore, current shipping cask designs were used for the analysis of Westinghouse AP1000 reactor spent fuel shipments.

EPA recommends that when shipping casks are designed for the spent fuel for the Westinghouse AP1000, the analysis should be repeated. We understand that the NRC staff assumed that the capacity of a truck shipment of Westinghouse AP1000 reactor spent fuel was 0.5 MTU/shipment.

6.2.4 Conclusions for Transportation (pg 6-41) The NRC staff notes that on 3/3/2010, DOE submitted a motion to the Atomic Safety and Licensing Board to withdraw its application for a permanent geologic repository at Yucca Mountain, Nevada. EPA understands that Yucca Mountain was once considered the final destination for spent nuclear fuel, but this plan was withdrawn as an option by the U.S. Department of Energy by the motion of 3/3/2010. The abandonment of the plan to create a Yucca Mountain permanent geologic repository has apparently been recently countered by NRC's Atomic Safety and Licensing Board. Regardless of the outcome of this, the NRC staff reportedly concludes that transportation impacts are roughly proportional to the distance from the reactor site to the repository site, in this case Florida to Nevada. If another repository in the contiguous United States (other than Yucca Mountain) is ever selected, the environmental impact estimates from the transportation of spent reactor fuel should be re-calculated as required under 42 USC 4321 Fuel Cycle, Transportation, and Decommissioning.

9.3.1.6 Selection of the Proposed Site (pg 9-37) The DEIS states "Strategic considerations indicated the LNP site would be preferable to collocating at the Crystal River site because it is located farther from the Gulf Coast and at a higher elevation." The FEIS should provide a stronger narrative (with more details) regarding the "strategic considerations" for why the LNP site is preferable to collocating at the Crystal River Energy Complex location. This should include expanding the narrative in the DEIS about the need for system reliability (e.g., not including all power generation at one site in the event of a hurricane or natural disaster), potential security issues derived from having all power generation at one site, the importance of selecting a site that would address the projected effects of future: sea-level rise, increased hurricane intensity, increased storm surge heights, increased wave action, etc. Per the DEIS in Section 2.3.1.1 sea-level rise is projected to exceed 3 ft by the end of the century due to climate change, according to the U.S. Global Change Research Program's report *Global Climate Change Impacts in the United States,* published in 2009.

9.3.2.1 Land-Use Impacts (pg 9-47) The DEIS assumes that 10 acres per mile would be impacted by each of the proposed alternative. The FEIS should provide some supporting scientific data to support this assumption.

9.3.6.2 Crystal River Site (pg 9-242) The DEIS states "Based on the results and comparison of the resource areas and associate impact characterizations, the review team concludes that the Crystal River site would not be environmentally preferable to the LNP site for the construction of the two nuclear generating units." As stated above, the FEIS should provide additional technical rationale to support this determination.

CDR Paul S. Gagliano, P.E.

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