Progress Energy

Serial: NPD-NRC-2009-182
August 12, 2009

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555-0001

LEVY NUCLEAR POWER PLANT UNITS 1 AND 2
NRC DOCKET NOS. 52-029 AND 52-030
RESPONSE TO SUPPLEMENTAL REQUEST FOR ADDITIONAL INFORMATION REGARDING THE ENVIRONMENTAL REVIEW – HYDROLOGY 4.1.1-1

Reference: Letter from Douglas Bruner (NRC) to James Scarola (Progress Energy), dated June 23, 2009, "Supplemental Request for Additional Information Regarding the Environmental Review of the Combined License Application for the Levy Nuclear Power Plant, Units 1 and 2"

Ladies and Gentlemen:

Progress Energy Florida, Inc. (PEF) hereby submits our response to the Nuclear Regulatory Commission's (NRC) supplemental request for additional information pertaining to Hydrology Request for Additional Information (RAI) 4.1.1-1 per the referenced letter. A response to the NRC request is addressed in the enclosure.

If you have any questions, or need additional information, please contact Bob Kitchen at (919) 546-6992 or me at (919) 546-6107.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on August 12, 2009.

Sincerely,

Garry D. Miller
General Manager
Nuclear Plant Development

Enclosure/Attachment

cc: Mr. Douglas Bruner, U.S. NRC Environmental Project Manager (w/3 copies of attachment)
Mr. Brian Anderson, U.S. NRC Project Manager (w/o attachment)
U.S. NRC Region II, Regional Administrator (w/o attachment)
Mr. Gordon A. Hambrick III, US Army Corps of Engineers (w/1 copy of attachment)

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NRO

Levy Nuclear Power Plant Units 1 and 2
Response to NRC Supplemental Request for Additional Information Letter
Regarding the Environmental Review, dated June 23, 2009

NRC RAI #	Progress Energy RAI #	Progress Energy Response
General-1	L-0507	July 17, 2009; Serial: NPD-NRC-2009-150
5.3.2.1-2	L-0503	July 29, 2009; Serial: NPD-NRC-2009-167
4.1.1-1	L-0504	Response enclosed – see following pages
USACE-12	L-0506	July 22, 2009; NPD-NRC-2009-146
USACE-13	L-0505	July 22, 2009; NPD-NRC-2009-146

Attachment	Associated NRC RAI #	Pages Included
Technical Memo TMEM-106	4.1.1-1	153

NRC Letter No.: ER-NRC

NRC Letter Date: June 23, 2009

NRC Review of Environmental Report

NRC RAI #: 4.1.1-1

Text of NRC RAI:

Provide details of how the floodplain storage loss was determined at the LNP site, provide a description of how the floodplain storage loss would be compensated, and provide an assessment of impacts on land use, hydrology, and terrestrial ecology related to the loss and its compensation.

Provide the following items:

1. A revised map or maps, similar to drawing LNG-G100-X3-017, that clearly identify the locations and extent of all proposed LNP facilities, both onsite and offsite (i.e., transmission lines and blowdown lines), and the extent of grading and any other land disturbance. The map or maps should include a clear and unambiguous legend. All proposed LNP facilities should be clearly labeled.
2. A description of how the 100-year floodplain was determined for the areas that may be impacted. Describe how the estimated 100-year floodplain is appropriate for the LNP site and for offsite areas where LNP-related disturbance may occur.
3. A detailed description of how the volume of floodplain storage loss was determined for all impacted areas.
4. A description of the applicable rules and regulations from all agencies, including but not limited to SWFWMD and Levy County, that would require compensation for the floodplain storage loss due to construction of the LNP facilities.
5. A map or maps accurately showing the potential areas where the floodplain storage loss would be compensated.
6. An assessment of the impacts on land use, hydrology, and terrestrial ecology related to floodplain loss and its compensation.

PGN RAI ID #: L-0504

PGN Response to NRC RAI:

A significant net storage loss is not expected at the Levy site as previously addressed in the NRC's RAI Response No. 02.03.01-1 (L-0398) as submitted in Letter NPD-NRC-2009-107 dated June 12, 2009.

The NRC and the U.S. Army Corps of Engineers (USACE) requested additional information on the June 4, 2009 conference call. The request was to provide a "bounding analysis" that would show a planning-level, desktop analysis of the maximum possible floodplain storage loss estimated from best available information to demonstrate there was on-site capacity available for compensation, if needed. To address this request, a technical memorandum titled *Floodplain Evaluation Bounding Analysis* (Attachment

04.1.1-1A), was developed. This technical memorandum summarizes the results of the planning-level bounding analysis of the potential project fill at the LNP site in the floodplain as mapped by the Federal Emergency Management Agency (FEMA). The bounding analysis addresses NRC comments as follows:

Item 1: A revised map identifying the locations of all proposed LNP facilities is included in Attachment 04.1.1-1A. Refer to Figure 2 and Tables 1 through 3 of the technical memorandum for further detail.

Item 2: The 100-year floodplain was determined based on the FEMA Flood Insurance Rate Maps (FIRMs) for Levy County - Community Panel Numbers 120145 0640 D, 120145 0625 D, and 120145 0650 D published in 1984, and the Geographic Information System (GIS) digital representation of the published 1984 FIRMs, which FEMA distributed in 1996. The impact areas were determined by overlaying the GIS floodplain and the proposed limits of construction for the LNP site. The FEMA-mapped floodplain was determined to be appropriate because FEMA has the authorization to identify flood prone zones pursuant to Title 42 Section 4104 CFR as authorized by the National Flood Insurance Act of 1968 as amended, and the Flood Disaster Protection Act of 1973 as amended. Additional information regarding the data sources and methodology are presented in Attachment 04.1.1-1A, Section 3.

Item 3: The results of the conservative estimate of potential floodplain storage loss within the FEMA-mapped floodplain are presented in Attachment 04.1.1-1A, Section 4.0.

Item 4: Additional compensation from the net storage loss is not expected to be required for the site because the impacts are SMALL* given the design of stormwater ponds and roadway cross drainage features for the 100-year, 24-hour event and the large amount of LNP property. The "bounding analysis" was prepared as a planning-level, desktop analysis of the potential floodplain fill based on the FEMA-designated floodplain with identification of on-site storage possible for compensation storage, if needed. The "bounding analysis" has been prepared as a possible outcome with respect to the Federal, State, and Local requirements as summarized in ER Table 1.2-1. In addition, State and local requirements are required to be addressed as part of the Conditions of Certification for the Florida Site Certification for the project.

The on-site floodplains are designated by the FEMA FIRMs as Zone A, which is defined as "no base flood elevations determined". The Zone A FIRM mappings are based on wetland and soil features visible on aerial photographs, but do not have a base flood elevation modeled. Additional information regarding floodplain related requirements and compliance are as follows:

- Levy County Code of Ordinances Chapter 50 Article VI Flood Damage Protection specifies requirements for development within the floodplain, which includes approval from the Zoning Manager and a certificate of compliance with floodplain requirements of Southwest Florida Water Management District (SWFWMD). The County Code states approvals will not allow "fills, structures, or other features that will individually or collectively increase the flood elevations beyond the upstream property limits of the developer's property line." To meet the Levy County Code, the project must be consistent with SWFWMD Environmental Resource Permit (ERP) requirements discussed below to demonstrate no adverse off-site impact.

*SMALL level of significance is based on the definition from the Council on Environmental Quality guidelines set forth in the footnotes to Table B-1 of 10 CFR 51, Subpart A, Appendix B

- FDEP will use the SWFWMD ERP Basis of Review (BOR) to evaluate work within the floodplain. The BOR requires no net encroachment into the 100-year floodplain that will adversely affect conveyance, storage, water quality, or adjacent lands. To meet the FDEP/SWFWMD criteria, one of the following will be required:
  - Provide 1:1 compensation storage for floodplain impact volumes;
  - Prepare pre/post-project computations without compensatory storage to define the existing floodplain base flood elevations and to demonstrate no adverse off-site rise from the project; or
  - Determine partial compensatory storage to ensure that the computations demonstrate no adverse off-site rise
- Title 10 Section 1022 CFR is to "identify, evaluate, and as appropriate, implement alternative actions that may avoid or mitigate adverse floodplain and wetland impacts." This is consistent with the ERP requirements discussed above; therefore, this federal requirement will be addressed as part of the ERP.

The following items are important considerations relative to the floodplain evaluation that will meet local, state, and federal requirements:

- There are no creeks, streams, or other similar channels on the property. The native landscape has been severely altered by ridges and furrows used during past silviculture activities so overland flows are disrupted and slowed significantly.
- Cross drains will allow conveyance under new roadways. No new channels or ditches will be constructed to convey stormwater off-site. Flow will be maintained as overland flow as much as possible at the project site boundaries and stormwater in the vicinity of the power plant will be collected in dedicated stormwater ponds
- Storage capacity will be maintained in the on-site wetland sloughs to the greatest extent possible. Additional storage for the new facilities will be provided in the proposed wet detention ponds on-site and swales adjacent to roads. The need for compensatory storage as mitigation for floodplain fill will be assessed further during the ERP process, as described above.
- Water quality is addressed in the on-site stormwater systems designed for compliance with Chapter 5 of the SWFWMD BOR.

Item 5: A map of the potential on-site compensation storage locations, based on the FEMA-mapped floodplain, is included in Attachment 04.1.1-1A, Figure 7.

Item 6: A discussion of the impacts on land use, hydrology, and terrestrial ecology related to storage loss and compensation areas, based on the FEMA-mapped floodplain, is included in Attachment 04.1.1-1A, Section 4.

Associated LNP COL Application Revisions:

No COLA revisions have been identified associated with this response.

Attachments/Enclosures:

Attachment 04.1.1-1A: CH2M HILL Technical Memo 338884-TMEM-106, Floodplain Evaluation Bounding Analysis