PMLevyCOLPEm Resource

From: Snead, Paul [paul.snead@pgnmail.com]
Sent: Monday, October 12, 2009 10:44 AM
To: Moser, Michelle
Cc: Bruner, Douglas
Subject: FW: Supplemental Levy RAI Response -- Hydrology 4.1.1-1
Attachments: NPD-NRC-2009-213 - Final Response to NRC.pdf

Michelle:

FYI, items 5 and 6 on the attached RAI supplemental response address the request you shared with me last week from Bill Baber for citable reference items.

Paul Snead
Lead Environmental Specialist
Nuclear Plant Development
Progress Energy
paul.snead@pgnmail.com
(919) 546-2836

From: Wilkins, Tillie
Sent: Monday, October 12, 2009 10:27 AM
To: 'Anderson, Brian'; 'douglas.bruner@nrc.gov'
Cc: Snead, Paul
Subject: Supplemental Levy RAI Response -- Hydrology 4.1.1-1

A supplemental response to Levy environmental RAI Hydrology 4.1.1-1 is attached. Please note that the attachment to the letter is not provided with this message due to its large file size.

Tillie Wilkins
Nuclear Plant Development Licensing
Progress Energy
VNet: 770-6754
Bell: 919-546-6754

Hearing Identifier: Levy_County_COL_Public
Email Number: 491

Mail Envelope Properties (2F550AA5C53B794C8D80578767411C03060F83EA)

Subject: FW: Supplemental Levy RAI Response -- Hydrology 4.1.1-1
Sent Date: 10/12/2009 10:43:40 AM
Received Date: 10/12/2009 10:43:47 AM
From: Snead, Paul

Created By: paul.snead@pgnmail.com

Recipients:
"Bruner, Douglas" <Douglas.Bruner@nrc.gov>
Tracking Status: None
"Moser, Michelle" <Michelle.Moser@nrc.gov>
Tracking Status: None

Post Office: NT000833.oak.zone1.progress-energy.com

Files	**Size**	**Date & Time**
MESSAGE	887	10/12/2009 10:43:47 AM
NPD-NRC-2009-213 - Final Response to NRC.pdf	378405	

Options
Priority: Standard
Return Notification: No
Reply Requested: No
Sensitivity: Normal
Expiration Date:
Recipients Received:

Progress Energy

Serial: NPD-NRC-2009-213
October 9, 2009

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

LEVY NUCLEAR 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

References:

1. 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"

2. Letter from Garry D. Miller (PEF) to U. S. Nuclear Regulatory Commission dated August 12, 2009, "Response to Supplemental Request for Additional Information Regarding the Environmental Review – Hydrology 4.1.1-1", Serial NPD-NRC-2009-182

Ladies and Gentlemen:

Progress Energy Florida, Inc. (PEF) hereby submits a supplemental 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 Reference 1. A supplemental 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 October 9, 2009.

Sincerely,

Garry D. Miller
General Manager
Nuclear Plant Development

Enclosure/Attachment

Progress Energy Florida, Inc.
P.O. Box 14042
St. Petersburg, FL 33733

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)

Levy Nuclear 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 & L-0559	August 12, 2009; Serial NPD-NRC-2009-182 & Supplemental 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:

In the September 17, 2009 Conference Call, clarifications were requested to previously submitted RAI 4.1.1-1: The supplemental information should provide the following:

1) A synopsis of the regulatory process related to floodplain compensation.
2) A listing of the FLUCSS cover types (in acres and percent) for the compensation identification areas noted in Table 6 of TMEM-106.
3) A description regarding if floodplain compensation is needed, its being a potential source of wetland mitigation.
4) A description of the hydrologic and hydraulic analysis currently underway for floodplain compensation.

In the September 24, 2009 Conference Call, Progress Energy provided further terrestrial ecology clarifications and supplemental information was requested to provide the following:

5) Confirm whether or not it is possible to determine if Treeless Hydric Savanna has been disturbed by forest management activities or is a natural Florida cover type.
6) Clarify the difference between the “Area” impact and the “Estimated Clearing” impact in Table 2.4.1-3-005.

PGN RAI ID #: L-0559

PGN Response to NRC RAI:

Refer to the response provided for NRC RAI #04.01.01-1 (PGN RAI ID#: L-0504) submitted via Progress Energy letter serial #: NPD-NRC-2009-182, dated August 12, 2009. In addition, the following information regarding the four items noted above is provided.

Item 1)

As discussed in the previous RAI response, the on-site floodplains are designated on the Flood Insurance Rate Map (FIRM) 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 predicted by computer modeling. Additional information regarding floodplain related regulatory requirements and compliance criteria 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.

- FDEP will use the SWFWMD Environmental Resource Permit (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.

Governor Crist signed the Final Order Approving Certification on August 26, 2009, "pursuant to a vote of the Governor and Cabinet, sitting as the Siting Board, at a duly noticed and constituted Cabinet meeting held on August 11, 2009". Exhibit B of the Certification provides the Conditions of Certification, Certified August 11, 2009, which provides the following requirements to meet the regulatory floodplain requirements for the site and transmission lines:

- SECTION B. PLANT SPECIFIC CONDITIONS
  - "XXVII. DEPARTMENT OF ENVIRONMENTAL PROTECTION, A. Flood Control Protection. Any construction of new facilities for the certified plant and associated facilities shall be protected from flood damage by construction in such a manner as to comply with the appropriate Levy County flood protection requirements or by flood proofing or by raising the elevation of the facilities above the 100-year flood level, whichever is more stringent. However, existing facilities and in-water structures are not required to comply with such flood control protection standards." (Page 22)
  - "XXVII. DEPARTMENT OF ENVIRONMENTAL PROTECTION, H. Stormwater/Wastewater Discharges. 1. At least 90 days prior to construction of the facility or a portion of the project that may affect stormwater, the licensee shall submit final plans for the surface water management system for that portion of the facility to the Siting and DEP Northeast District Offices for review and approval. The submittal shall include calculations, drawings, reports and permit applications with information for the site, associated access roads and structure pads, drainage analysis, stormwater management system, wastewater treatment and disposal, etc. Floodplain analysis shall address flow rates on the site using a minimum of three cross-sections and provide a tabular summary. The data summary should include stage or water elevation, basin areas and volumes of cut and fill and calculations of the compensating storage for pre and post conditions. Site plans shall show the stage as the difference between the 100 year storm event and the elevation of the seasonal high water level in NGVD 29 basis." (Page 26)

- SECTION C. TRANSMISSION LINE SPECIFIC CONDITIONS
  - "XXXVIII. DEPARTMENT OF ENVIRONMENTAL PROTECTION 4. The Licensee shall provide to the Department's District Office and Water Management District, as appropriate, information necessary to demonstrate that compensation will be provided for all proposed fill impacts to the regulated floodplain in accordance with Rules 40D-4.381(1)(h), and 62-343.900, F.A.C. The Licensee shall also demonstrate that the project, as proposed, will not cause a reduction in flood conveyance." (Page 68)
  - XL. SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT A. PEF shall provide reasonable assurance that the construction, operation and maintenance of non-exempt surface water management system structures and access roads in support of the proposed transmission line facilities will satisfy the criteria set forth in Rules 40D-4.301 and 40D-4.302, F.A.C., and applicable provisions of Part B, Basis of Review of SWFWMD's Environmental Resource Permitting Information Manual. PEF shall provide sufficient information on a post-certification basis to demonstrate that there is reasonable assurance of compliance with SWFWMD substantive permitting requirements, including avoidance of secondary wetland dredging and/or filling impacts and avoidance of floodplain impacts. Where necessary, equivalent floodplain compensation to achieve no net loss in floodplain storage will be provided." (Page 73)

In addition to the floodplain requirements in which compensation must be above the seasonal high groundwater, the SWFWMD BOR, requires historic basin storage, generally below the seasonal high groundwater and measured to the pre-developed ground level. The replacement volume for historic basin storage, if required, is at the same elevation as the historic basin storage fill; therefore, is separate from the floodplain storage compensation above seasonal high groundwater requirement quoted above.

Tables 4 and 5 of Attachment 4.1.1-1A, have been revised as follows:

- Bottom of floodplain fill revised to be the larger of the average ground elevation or seasonal high groundwater – in most cases the seasonal high groundwater elevation was used previously.
- For seasonal high groundwater above the average ground elevation, the difference was calculated as historic basin storage fill depth.
- A six-inch minimum fill was applied to the historic basin storage fill, with zero minimum applied to the floodplain storage above seasonal high groundwater.

The results are an estimated 257.9 ac-ft of floodplain fill above seasonal high groundwater and 62.2 ac-ft of historic basin storage fill below seasonal high groundwater.

Item 2)

As requested, below are the published upland FLUCCS designations, acreages, and percentages by compensation ID. Table 6 of Attachment 4.1.1-1A demonstrates on-site compensation storage locations are available to meet the 1:1 replacement of floodplain fill.

Compensation Identification	Area (ac)	FLUCCS Code (ft)	FLUCCS Description	Area by FLUCCS Type (ac)	Percentage of Total
C-74	20.11	440	TREE PLANTATIONS	20.11	100.00%
C-76A	84.88	2600	OTHER OPEN LANDS <RURAL>	14.38	16.95%
		4100	UPLAND CONIFEROUS FOREST	3.50	4.12%
		4400	TREE PLANTATIONS	67.00	78.93%
C-76B	78.48	2600	OTHER OPEN LANDS <RURAL>	50.82	64.76%
		4340	HARDWOOD CONIFER MIXED	3.82	4.87%
		4400	TREE PLANTATIONS	23.83	30.37%
C-76C	102.94	2600	OTHER OPEN LANDS <RURAL>	20.40	19.82%
		4400	TREE PLANTATIONS	82.54	80.18%
C-96A	9.34	2600	OTHER OPEN LANDS <RURAL>	1.90	20.33%
		4400	TREE PLANTATIONS	7.44	79.67%
C-100	10.74	4400	TREE PLANTATIONS		100.00%
C-101	15.57	4400	TREE PLANTATIONS		100.00%
Total Area (ac)	322.07				

Item 3)

Floodplain compensation, if determined to be required in the future after additional detailed evaluations are completed, will be provided on-site within the general areas identified. The compensation areas will be a potential source of additional wetland mitigation and detailed further in updates to the wetland mitigation plan. The compensation areas are all uplands that have been drained and highly impacted by silviculture activities over the years.

Item 4)

Currently hydrologic and hydraulic floodplain analyses are being conducted for the LNP site, which is to be completed in early 2010, using the United States Environmental Protection Agency (EPA) Storm Water Management Model (SWMM) Version 5 software. SWMM is a widely used software that is approved by FEMA and publically available. It should be noted that the existing ground elevations with no reduction in storage for seasonal high groundwater is being used so that the model addresses both the floodplain above seasonal high groundwater, historic basin storage below seasonal high groundwater, and compensation, if required. The following information and procedures are incorporated into this modeling effort:

- The overall project site was reported in the COLA to have three major drainage sub-basins as delineated by FDEP in 1998: 1) Spring Run, 2) Runoff to Gulf, and 3) Withlacoochee

River. The floodplain model is further subdivided into sub-basins representing both on-site and off-site flood routing and storage (i.e., ponding) units.

- Hydrology: Runoff is estimated using the SCS Curve Number and Unit Hydrograph Methods. The 100-year 24-hour design storm event of 11.3 inches is applied in the model. A 24-hour rainfall distribution is used per the Southwest Florida Water Management District Water Use Design Aids (SCS Type II storm, Florida-Modified). Excess precipitation is computed based on the sub-basin curve number derived from land use and soil types (land use by visual inspection and soils reported by NRCS). The SWMM model is setup to estimate runoff with no infiltration and no evaporation, to remain conservative and consistent with standard practices.
- Hydraulics: The hydraulics of the site is modeled as a network of storage units (including the wetland depressions) with conduits (channels, pipes, etc.) to mimic the natural conditions and interconnection of the flatwoods landscape. Using GIS, the elevation and associated area for each sub-basin has been developed using the 1-foot LiDAR data. Similarly, input for off-site sub-basins has been determined in GIS using the 1-ft LiDAR, where available, and the USGS 5-foot contour data. The boundary conditions are the US 19 and CR 40 culverts that generally serve as drainage outlets.

Item 5)

While treeless hydric savannahs may occur naturally - for example, as a successional stage following a burn - the treeless hydric savannahs on the LNP site are the result of silviculture activities. This cover type describes wet flats where the trees were harvested and not replanted.

Item 6)

Table 2.4.1-3-005 contains the FLUCCS codes impacted within the preliminary transmission lines. The areas identified in the "Area" column are impacts associated with the foundations for the transmission lines. The preliminary route of the transmission lines includes existing ROWs in many instances. Since transmission lines occur overhead and impacts are due to the initial clearing and maintenance of ROWS, the area to be cleared was also identified. The column “Estimated Clearing (Ac.)" identifies those areas not in existing ROWs and would need to be cleared. Segments 5, 6, and 7 are completely within existing ROWs and therefore the impacts due to clearing are zero.

Associated LNP COL Application Revisions:

No COLA revisions have been identified associated with this response.

Attachments/Enclosures:

Attachment 4.1.1-1A: CH2M HILL Technical Memo 338884-TMEM-106, Floodplain Evaluation Bounding Analysis, Revision 1