LevyCountyRAIsPEm Resource

From: Anderson, Brian
Sent: Friday, October 30, 2009 1:42 PM
To: LevyCountyRAIsPEm Resource
Subject: REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 070 RELATED TO SRP SECTION 2.5.1 FOR THE LEVY COUNTY UNITS 1 AND 2 COMBINED LICENSE APPLICATION
Attachments: LNP-RAI-LTR-070.doc

Importance: High

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Email Number: 70

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Subject: REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 070 RELATED TO SRP SECTION 2.5.1 FOR THE LEVY COUNTY UNITS 1 AND 2 COMBINED LICENSE APPLICATION
Sent Date: 10/30/2009 1:41:31 PM
Received Date: 10/30/2009 1:41:35 PM
From: Anderson, Brian

Created By: Brian.Anderson@nrc.gov

Recipients:
"LevyCountyRAIsPEm Resource" <LevyCountyRAIsPEm.Resource@nrc.gov>
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MESSAGE	3	10/30/2009 1:41:35 PM
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Return Notification: No
Reply Requested: No
Sensitivity: Normal
Expiration Date:
Recipients Received:

November 2, 2009

Mr. Garry Miller
General Manager, Nuclear Plant Development
Progress Energy Florida, Inc.
PO Box 1551
411 Fayetteville Street Mall
Raleigh, NC 27602

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 070 RELATED TO SRP SECTION 2.5.1 FOR THE LEVY COUNTY NUCLEAR PLANT, UNITS 1 and 2 COMBINED LICENSE APPLICATION

Dear Mr. Miller:

By letter dated July 28, 2008, as supplemented by a letter dated September 12, 2008, Progress Energy Florida, Inc. submitted its application to the U. S. Nuclear Regulatory Commission (NRC) for a combined license (COL) for two AP1000 advanced passive pressurized water reactors pursuant to 10 CFR Part 52. The NRC staff is performing a detailed review of this application to enable the staff to reach a conclusion on the safety of the proposed application.

The NRC staff has identified that additional information is needed to continue portions of the review. The staff's request for additional information (RAI) is contained in the enclosure to this letter.

To support the review schedule, you are requested to respond within 30 days of the date of this letter. If changes are needed to the final safety analysis report, the staff requests that the RAI response include the proposed wording changes.

If you have any questions or comments concerning this matter, you may contact me at 301-415-9967.

Sincerely,

/**RA**/

Brian C. Anderson, Lead Project Manager
AP1000 Projects Branch 1
Division of New Reactor Licensing
Office of New Reactors

Docket Nos. 52-029
52-030

eRAI Tracking No. 3818

Enclosure:
Request for Additional Information

If you have any questions or comments concerning this matter, you may contact me at 301-415-9967.

Sincerely,

/**RA**/

Brian C. Anderson, Lead Project Manager
AP1000 Projects Branch 1
Division of New Reactor Licensing
Office of New Reactors

Docket Nos. 52-029
52-030

eRAI Tracking No. 3818

Enclosure:
Request for Additional Information

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NRO-002

OFFICE	RGS1/BC	NWE1/PM	OGC	NWE1/L-PM
NAME	CMunson *	BAnderson *	JMartin*	BAnderson*
DATE	09/28/09	10/27/09	10/27/09	11/02/09

*Approval captured electronically in the electronic RAI system.

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Request for Additional Information
Levy County, Units 1 and 2
Progress Energy Florida, Inc.
Docket No. 52-029 and 52-030
SRP Section: 02.05.01 - Basic Geologic and Seismic Information
Application Section: 2.5.1

QUESTIONS for Geosciences and Geotechnical Engineering Branch 1 (RGS1)

02.05.01-46

The response to RAI 2.5.1-12 discusses information related to whether large dissolution voids occur in the subsurface. The response states that the diameter of shallow dissolution features observed at the surface is not indicative of the size of subsurface karst cavities and cites a reference (Sinclair and Stewart, 1985) to support this conclusion. However, a summary of the basis for this conclusion as derived from the cited reference is not provided in the response.

In order for the staff to assess the basis for the statement that the diameter of shallow dissolution features observed at the surface is not indicative of the size of subsurface karst cavities, please summarize the logic for this conclusion as derived from Sinclair and Stewart (1985).

02.05.01-47

The response to RAI 2.5.1-31 discusses available information related to whether underground conduits capable of accommodating rapid groundwater flow occur at or near the Levy site, and provides a figure modified from Maddox (1993) which clearly indicates there are no caves reported near the site. The response states that no caves exist which could act as conduits capable of accommodating rapid groundwater flow within the Avon Park Formation in the outcrop area of Levy County and Citrus County. The response also states that Dr. S. Upchurch concluded there are no springs of any noticeable magnitude with the LNP site vicinity, but no reference is cited to document his conclusion.

In order for the staff to assess the basis for the conclusion drawn by Upchurch which is stated in the response to RAI 2.5.1-31 regarding the point that no springs of any noticeable magnitude occur with the LNP site vicinity, please cite an appropriate reference documenting his conclusion that no springs exist.

02.05.01-48

The response to RAI 2.5.1-35 presents information used by Rupert (1988) to formulate his lithologic descriptions and estimates of unit thicknesses. The response provides lithologic and drillers logs and resistivity and velocity borehole logs from wells which Rupert (1988) examined, and states that neither lithologic or drillers logs recorded voids in the upper 305 m (1000 ft) of the boreholes. However, examination of these logs reveals zones of “no returns” in some holes (e.g., W-3342 at 130-283 ft, 380-648 ft, and 775-907 ft). It is not clear whether these “no-return” zones may represent actual voids rather than washouts of soft carbonate units, since the criteria applied to draw the conclusion that no voids are recorded in the upper 305 m (1000 ft) of the logs are not stated.

In addition, the response to RAI 2.5.1-44 discusses how the presence of deep voids was investigated and states that low-recovery zones reported in the boreholes generally reflected soft carbonate layers

interbedded with more competent units in the Avon Park Formation, rather than significant voids or filled voids. The response also indicates that quick drilling, loss of drilling fluid, minimal to no recovery, and rod drop events as recorded in FSAR Tables 2.5.4.2-205A and 2.5.4.2-205B are common due to the presence of poorly-indurated, soft carbonate beds in the materials being drilled which wash out during drilling, resulting in misinterpretation of such descriptions in the drilling logs as voids or filled voids. It is not clear how materials encountered in boreholes could be precisely classified as soft carbonate layers when there is no recovery based on information shown in Tables 2.5.4.2-205A and 2.5.4.2-205B.

In order for the staff to understand characteristics and properties of subsurface zones described in the drilling logs as exhibiting “no recovery” and “no returns”, please discuss the criteria applied to determine that washout of soft carbonate layers produced these zones rather than dissolution voids or filled voids.

02.05.01-49

The response to RAI 2.5.1-38 discusses information used to conclude that no faults occur within the site vicinity and cites map sources from 1978, 1979, 1992, 2001, and 2008, none of which indicate that faults exist in the site vicinity. The response states that structure contour maps drawn by Arthur and others (2008) on the tops of the Oligocene Suwannee Limestone, the Upper Eocene Ocala Limestone, and the Middle Eocene Avon Park, presented in the response to this RAI, show that no faults affect the Ocala and Avon Park horizons. However, the response does indicate that Arthur and others (2008) postulated two potential faults to account for abrupt thickness changes in the Suwannee Limestone as located on their structural contour map drawn on the top of the Suwannee. It is not clear why abrupt thickness changes in the Oligocene Suwannee Limestone are postulated as being due to potential faults when older rock layers underlying that unit (i.e., the Upper Eocene Ocala Limestone and Middle Eocene Avon Park Formation) are reported to show no faulting based on similar maps.

In order for the staff to understand why proposed faults which cut younger (i.e., overlying) Suwannee Limestone do not affect the older underlying Ocala Limestone and Avon Park Formation, please explain the basis for the interpretation that faults occur in the Suwannee Limestone but not in the older units that underlie the Suwannee.

02.05.01-50

The response to RAI 2.5.1-38, seemingly in response to the part of this RAI asking for the criteria used to distinguish faults in the site vicinity, cites Hanson and others (1999) and lists criteria used to recognize individual paleoseismic events. It is not clear whether these criteria, some of which may not be applicable to specifically distinguishing faults since paleoseismic features do not always delineate specific structures, were applied to delineate faults in the site vicinity as initially asked in RAI 2.5.1-38.

In order for the staff to understand the criteria applied to distinguish faults in the site vicinity, please clarify which of those listed for recognizing individual paleoseismic events were used to distinguish faults in the site vicinity.