LevyCountyRAIsPEm Resource

From: Chandu Patel
Sent: Wednesday, May 20, 2009 3:55 PM
To: LevyCountyRAIsPEm Resource
Subject: REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 046 RELATED TO SRP SECTION 3.7.1 FOR THE LEVY COUNTY NUCLEAR PLANT, UNITS 1 and 2 COMBINED LICENSE APPLICATION
Attachments: LNP-RAI-LTR-046.doc

Chandu Patel

Hearing Identifier: Levy_County_COL_eRAIs
Email Number: 48

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Subject: REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 046 RELATED TO SRP SECTION 3.7.1 FOR THE LEVY COUNTY NUCLEAR PLANT, UNITS 1 and 2 COMBINED LICENSE APPLICATION
Sent Date: 5/20/2009 3:55:13 PM
Received Date: 5/20/2009 3:55:14 PM
From: Chandu Patel

Created By: Chandu.Patel@nrc.gov

Recipients:
"LevyCountyRAIsPEm Resource" <LevyCountyRAIsPEm.Resource@nrc.gov>
Tracking Status: None

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MESSAGE	29	5/20/2009 3:55:14 PM
LNP-RAI-LTR-046.doc	63482	

Options
Priority: Standard
Return Notification: No
Reply Requested: No
Sensitivity: Normal
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May 20, 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. 046 RELATED TO SRP SECTION 3.7.1 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 301-415-3025.

Sincerely,

/**RA**/

Chandu P. Patel, Project Manager
AP1000 Projects Branch 1
Division of New Reactor Licensing
Office of New Reactors

Docket Nos. 52-029
52-030

eRAI Tracking No. 2318

Enclosure:
Request for Additional Information

If you have any questions or comments concerning this matter, you may contact me at 301-415-3025.

Sincerely,

/**RA**/

Chandu P. Patel, Project Manager
AP1000 Projects Branch 1
Division of New Reactor Licensing
Office of New Reactors

Docket Nos. 52-029
52-030

eRAI Tracking No. 2318

Enclosure:
Request for Additional Information

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NAME	BThomas *	BHughes *	JMartin*	BAnderson*
DATE	03/13/09	03/13/09	04/09/09	05/19/09

*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: 03.07.01 - Seismic Design Parameters
Application Section: 3.7.1.1

QUESTIONS for Structural Engineering Branch 1 (AP1000/EPR Projects) (SEB1)

03.07.01-1

Levy FSAR Section 3.7.1.1.2 states that the foundation input response spectra (FIRS) which are based on the site-specific ground motion response spectra (GMRS), are considered in site-specific response analysis. It is further stated that the resulting Levy FIRS are exceeded by the AP1000 CSDRS spectra by a factor greater than 3 in both the horizontal and vertical directions over the entire frequency range of interest. It is concluded in this Section that this large margin of exceedance is sufficient to preclude any uncertainties associated with the effects of adjacent structures supported on drilled shafts.

It is important to point out that the FIRS and the CSDRS are defined at different elevations and, therefore, cannot be compared directly. The process requires that deterministic site-specific calculations be performed to generate the ground motions (both horizontal and vertical) at plant grade for each of the three soil columns used in the SSI calculation (BE, UB and LB site profiles in accordance with SRP Section 3.7.2 –II, Acceptance Criteria). The comparison that needs to be made is then the CSDRS for AP1000 with the envelope of the spectra generated at the ground surface for each of the three SSI profiles. The use of the FIRS in this comparison is inappropriate.

Figures 2.5.2-247 & -248 show that discreet shear wave velocities as measured by the P-S logger are quite variable, ranging by wide margins from the average value within the zone of influence. This puts into question the degree of variability assumed in the SSI calculations, the assumption of uniformity of properties within a given layer if voids filled with soft soil are present within the same rock stratum, and the impact of potential variability in layer properties across the footprint of the NI on SSI response.

Finally, the design of the NI structures are based on the intrinsic assumption that the properties of the soils to the side of the structure are the same as under the foundation and that the seismic gap between the NI and adjacent facilities is adequate to account for the relative displacements anticipated for the plant. The behavior of the adjacent structures under seismic loading is directly related to the design of the drilled shafts supporting these structures as well as the support these soils can provide to the drilled shafts.

Please provide justification for the assumed uniformity of layer structure for SSI response evaluations and potential impact of loss of support of side soils on drilled shaft design in case of Levy site.