

## **PMLevyCOLPEm Resource**

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**From:** Brian Anderson  
**Sent:** Wednesday, May 20, 2009 4:02 PM  
**To:** robert.kitchen@pgnmail.com; david.waters@pgnmail.com; tillie.wilkins@pgnmail.com; PMLevyCOLPEm Resource  
**Cc:** Brian Anderson  
**Subject:** REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 047 RELATED TO SRP SECTION 2.4.6 FOR THE LEVY COUNTY UNITS 1 AND 2 COMBINED LICENSE APPLICATION  
**Attachments:** LNP RAI 047 - ML091400616.pdf  
**Importance:** High

Attached is RAI Letter No. 047 related to SRP Section 2.4.6 for the Levy County Units 1 and 2 combined license application. The ADAMS Accession number is ML091400616.

Brian Anderson  
301-415-9967  
Lead Project Manager, AP1000 Projects Branch 1  
Office of New Reactors  
U.S. Nuclear Regulatory Commission

**Hearing Identifier:** Levy\_County\_COL\_Public  
**Email Number:** 150

**Mail Envelope Properties** (CB87FC66F95637428C5E0D066E756B6FC00021903C)

**Subject:** REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 047 RELATED TO SRP SECTION 2.4.6 FOR THE LEVY COUNTY UNITS 1 AND 2 COMBINED LICENSE APPLICATION  
**Sent Date:** 5/20/2009 4:01:59 PM  
**Received Date:** 5/20/2009 4:02:02 PM  
**From:** Brian Anderson

**Created By:** Brian.Anderson@nrc.gov

**Recipients:**

"Brian Anderson" <Brian.Anderson@nrc.gov>  
Tracking Status: None  
"robert.kitchen@pgnmail.com" <robert.kitchen@pgnmail.com>  
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Tracking Status: None  
"PMLevyCOLPEm Resource" <PMLevyCOLPEm.Resource@nrc.gov>  
Tracking Status: None

**Post Office:** HQCLSTR01.nrc.gov

<b>Files</b>	<b>Size</b>	<b>Date &amp; Time</b>
MESSAGE	326	5/20/2009 4:02:02 PM
LNP RAI 047 - ML091400616.pdf		172928

**Options**

**Priority:** High  
**Return Notification:** No  
**Reply Requested:** No  
**Sensitivity:** Normal  
**Expiration Date:**  
**Recipients Received:**

## LevyCountyRAIsPEm Resource

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**From:** Brian Anderson  
**Sent:** Wednesday, May 20, 2009 3:45 PM  
**To:** LevyCountyRAIsPEm Resource  
**Subject:** REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 047 RELATED TO SRP SECTION 2.4.6 FOR THE LEVY COUNTY UNITS 1 AND 2 COMBINED LICENSE APPLICATION  
**Attachments:** LNP-RAI-LTR-047.doc  
**Importance:** High

**Hearing Identifier:** Levy\_County\_COL\_eRAIs  
**Email Number:** 47

**Mail Envelope Properties** (CB87FC66F95637428C5E0D066E756B6FC000219018)

**Subject:** REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 047 RELATED TO SRP SECTION 2.4.6 FOR THE LEVY COUNTY UNITS 1 AND 2 COMBINED LICENSE APPLICATION  
**Sent Date:** 5/20/2009 3:45:00 PM  
**Received Date:** 5/20/2009 3:45:02 PM  
**From:** Brian Anderson

**Created By:** Brian.Anderson@nrc.gov

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

**Post Office:** HQCLSTR01.nrc.gov

<b>Files</b>	<b>Size</b>	<b>Date &amp; Time</b>
MESSAGE	3	5/20/2009 3:45:02 PM
LNP-RAI-LTR-047.doc	71674	

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

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. 047 RELATED TO  
SRP SECTION 2.4.6 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. 2162

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. 2162

Enclosure:  
Request for Additional Information

Distribution:

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NRO-002

OFFICE	RHEB/BC	NWE1/PM	OGC	NWE1/L-PM
NAME	RRaione *	BAnderson *	JMartin*	BAnderson*
DATE	02/12/09	02/13/09	04/28/09	05/19/09

\*Approval captured electronically in the electronic RAI system.

**OFFICIAL RECORD COPY**

**Request for Additional Information**  
**Levy County, Units 1 and 2**  
**Progress Energy Florida, Inc.**  
**Docket No. 52-029 and 52-030**  
**SRP Section: 02.04.06 - Probable Maximum Tsunami Flooding**  
**Application Section: FSAR Section 2.4**

**QUESTIONS for Hydrologic Engineering Branch (RHEB)**

02.04.06-1

To meet the requirements of GDC 2, 10 CFR 52.17, and 10 CFR Part 100, the applicant should provide an assessment of the Probable Maximum Tsunami (PMT) for the proposed site. Section C.I.2.4.6.1 of Regulatory Guide 1.206 (RG 1.206) provides specific guidance with respect to determination of the PMT. This includes a discussion of the most reasonably severe geo-seismic activity possible and corresponding tsunami analysis. Please provide a discussion in the updated FSAR of the PMT assessment for the Levy County site, including the controlling source for the PMT and corresponding tsunami water level determination, or explain why such a discussion is not necessary.

02.04.06-2

To meet the requirements of GDC 2, 10 CFR 52.17, and 10 CFR Part 100, the applicant should provide an assessment of the Probable Maximum Tsunami (PMT) for the proposed site. Section C.I.2.4.6.1 of Regulatory Guide 1.206 (RG 1.206) provides specific guidance with respect to determination of the PMT. This includes a discussion of the generation of tsunami-like waves from hill-slope failures and the stability of the coastal area. Please discuss the hill-slope failures near the Levy County site with reference to the findings in Section 2.5 of the FSAR, or explain why such a discussion is not necessary.

02.04.06-3

To meet the requirements of GDC 2, 10 CFR 52.17, and 10 CFR Part 100, the applicant should provide an assessment of the Probable Maximum Tsunami (PMT) for the proposed site. Section C.I.2.4.6.2 of Regulatory Guide 1.206 (RG 1.206) provides specific guidance with respect to the historical tsunami record, including paleo-tsunami evidence. Please provide a clarification of the meaning of the descriptor "impact" as used on pg. 2.4-45 of the FSAR: "...historically no Caribbean tsunami has *impacted* the United States Gulf Coast."

02.04.06-4

To meet the requirements of GDC 2, 10 CFR 52.17, and 10 CFR Part 100, the applicant should provide an assessment of the Probable Maximum Tsunami (PMT) for the proposed site. Section C.I.2.4.6.2 of Regulatory Guide 1.206 (RG 1.206) provides specific guidance with respect to the historical tsunami record, including paleo-tsunami evidence. In the updated FSAR, please provide a clarification as to whether any of the Maximum Water Height measurements listed in Table 2.4.6-202 are located in the Gulf of Mexico, or explain why such a discussion is not necessary.



#### 02.04.06-5

To meet the requirements of GDC 2, 10 CFR 52.17, and 10 CFR Part 100, the applicant should provide an assessment of the Probable Maximum Tsunami (PMT) for the proposed site. Section C.I.2.4.6.2 of Regulatory Guide 1.206 (RG 1.206) provides specific guidance with respect to the historical tsunami record, including paleo-tsunami evidence. Please provide a clarification on whether there is any geologic evidence of tsunami deposits at the Levy County site or along the northern Gulf Coast of Florida. Additionally, indicate whether there are geologically conducive locations for the deposition and preservation of tsunami deposits in the vicinity of the Levy County site. If such paleo-tsunami evidence exists, please indicate how they are distinguished from storm wash-over deposits.

#### 02.04.06-6

To meet the requirements of GDC 2, 10 CFR 52.17, and 10 CFR Part 100, the applicant should provide an assessment of the Probable Maximum Tsunami (PMT) for the proposed site. Section C.I.2.4.6.3 of Regulatory Guide 1.206 (RG 1.206) provides specific guidance with respect to the source characteristics needed to determine the PMT. These characteristics include detailed geo-seismic descriptions of the controlling local tsunami generators, including location, source dimensions, and maximum displacement. Provide a discussion in the updated FSAR of submarine landslides in the Gulf of Mexico, other than East Breaks, as potential tsunami generators, including the Mississippi Canyon landslide, and landslides along the Florida Escarpment and along the slope above the Florida Escarpment, or discuss why this information is not needed in the FASR. In the updated FSAR, please clarify whether the East Breaks landslide is considered as the PMT source, in relation to discussion of the north Venezuela seismogenic tsunami as having “the most severe impacts for the Gulf Coast” (pg. 2.4-58), or explain why such a discussion is not necessary.

#### 02.04.06-7

To meet the requirements of GDC 2, 10 CFR 52.17, and 10 CFR Part 100, the applicant should provide an assessment of the Probable Maximum Tsunami (PMT) for the proposed site. Section C.I.2.4.6.3 of Regulatory Guide 1.206 (RG 1.206) provides specific guidance with respect to the source characteristics needed to determine the PMT. These characteristics include detailed geo-seismic descriptions of the controlling distant tsunami generators, including location, source dimensions, fault orientation, and maximum displacement. In the updated FSAR, please provide clarification regarding seismologic characterization (i.e. location, source dimensions, fault orientation, and maximum displacement) of the region offshore of Veracruz, Mexico, relative to the generation of tsunamis, or explain why such a discussion is not necessary.

#### 02.04.06-8

To meet the requirements of GDC 2, 10 CFR 52.17, and 10 CFR Part 100, the applicant should provide an assessment of the Probable Maximum Tsunami (PMT) for the proposed site. Section C.I.2.4.6.4 of Regulatory Guide 1.206 (RG 1.206) provides specific guidance with respect to tsunami analysis. This includes providing a complete description of the analysis procedure used to calculate tsunami wave height and period at the site, including the theoretical bases of the models, their verification and the conservatism of all input parameters. Please provide theoretical basis, assumptions (e.g., source parameterization), and applicability to the Levy County site for the tsunami attenuation function discussed on pg. 2.4-53 (Equation 2.4.6-1) and make available the details of the Monte Carlo analysis

used to estimate the maximum wave height and where the maximum wave height estimate is geographically located. For this and other methods of tsunami analysis indicated in the FSAR, please provide the procedure used to calculate tsunami propagation, runup, and inundation (i.e., tsunami water levels) at the Levy County site from offshore tsunami amplitude.

02.04.06-9

To meet the requirements of GDC 2, 10 CFR 52.17, and 10 CFR Part 100, the applicant should provide an assessment of the Probable Maximum Tsunami (PMT) for the proposed site. Section C.I.2.4.6.4 of Regulatory Guide 1.206 (RG 1.206) provides specific guidance with respect to tsunami analysis. This includes providing a complete description of the analysis procedure used to calculate tsunami wave height and period at the site. In the updated FSAR, please resolve the apparent inconsistency of the statement that the Gulf of Mexico contains no sources of reverse faults (1st sentence, section 2.4.6.4.1.2, pg. 2.4-52) given the mechanism of the September 10, 2006 Mw=5.8 in the NE Gulf of Mexico (third sentence), or explain why such a discussion is not necessary.

02.04.06-10

To meet the requirements of GDC 2, 10 CFR 52.17, and 10 CFR Part 100, the applicant should provide an assessment of the Probable Maximum Tsunami (PMT) for the proposed site. Section C.I.2.4.6.5 of Regulatory Guide 1.206 (RG 1.206) provides specific guidance with respect to tsunami water levels. This includes describing the ambient water levels, including tides, sea level anomalies, and wind waves assumed to be coincident with the tsunami. Please clarify the use of the value for 10% exceedance high-tide and long-term sea-level rise coincident with maximum tsunami water levels at the Levy County site.