



Progress Energy

Serial: NPD-NRC-2011-042
May 12, 2011

10CFR52.79

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

**LEVY NUCLEAR PLANT, UNITS 1 AND 2
DOCKET NOS. 52-029 AND 52-030
SUPPLEMENT 3 TO RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION LETTER
NO. 086 RELATED TO FOUNDATIONS**

- References:
1. Letter from Terri Spicher (NRC) to Garry Miller (PEF), dated March 16, 2010, "Request for Additional Information Letter No. 086 Related to SRP Section 3.8.5 for the Levy County Nuclear Plant, Units 1 and 2 Combined License Application"
 2. Letter from John Elnitsky (PEF) to U. S. Nuclear Regulatory Commission (NRC), dated August 18, 2010, "Response to Request for Additional Information Letter No. 086 Related to Foundations," Serial: NPD-NRC-2010-068
 3. Letter from John Elnitsky (PEF) to U.S. NRC, dated November 2, 2010, "Supplement 1 to Response to Request for Additional Information Letter No. 086 Related to Foundations", Serial: NPD-NRC-2010-080
 4. Letter from John Elnitsky (PEF) to U.S. NRC, dated January 25, 2011, "Supplement 2 to Response to Request for Additional Information Letter No. 086 Related to Foundations", Serial: NPD-NRC-2011-001

Ladies and Gentlemen:

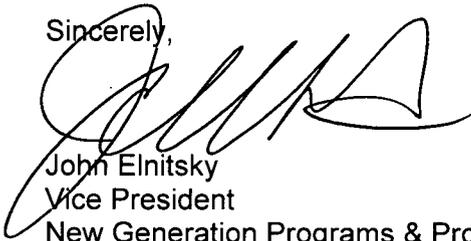
Progress Energy Florida, Inc. (PEF) hereby submits a supplemental response to the Nuclear Regulatory Commission's (NRC) request for additional information provided in the referenced letter. A supplemental response to NRC question 03.08.05-4 is provided in the enclosure.

If you have any further questions, or need additional information, please contact Bob Kitchen at (919) 546-6992, or me at (727) 820-4481.

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

Executed on May 12, 2011.

Sincerely,



John Elnitsky
Vice President
New Generation Programs & Projects

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

D094
NRC

United States Nuclear Regulatory Commission
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Enclosure/Attachment

cc : U.S. NRC Region II, Regional Administrator
Mr. Brian C. Anderson, U.S. NRC Project Manager
Ms. Terri Spicher, U.S. NRC Project Manager

**Levy Nuclear Plant Units 1 and 2
Supplement 3 to Response to NRC Request for Additional Information Letter No. 086
Related to SRP Section 3.8.5 for the Combined License Application,
Dated March 16, 2010**

<u>NRC RAI #</u>	<u>Progress Energy RAI #</u>	<u>Progress Energy Response</u>
03.08.05-4	L-0728, L-0860 & L-0861	NPD-NRC-2010-068; August 18, 2010 & NPD-NRC-2010-080; November 2, 2010 & Supplemental response enclosed – see following pages
03.08.05-5	L-0729	NPD-NRC-2010-068; August 18, 2010
03.08.05-6	L-0730	NPD-NRC-2010-068; August 18, 2010
03.08.05-7	L-0864	NPD-NRC-2011-001; January 25, 2011

NRC Letter No.: LNP-RAI-LTR-086

NRC Letter Date: March 16, 2010

NRC Review of Final Safety Analysis Report

NRC RAI NUMBER: 03.08.05-4

Text of NRC RAI:

In the applicant response to Question 3.8.5-02, Part 2, of RAI 2925 (NRC Letter No. 055) the applicant provided a description of two testing programs associated with the RCC bridging mat. One program is associated with production testing and a second testing program associated with an RCC Test Program conducted prior to construction. The applicant provided a description of the tests that will be performed to assess shear strength both for the base material and for the lift joints including identification of the testing methods to be used. However, the response does not clearly address the number of tests to be performed and how the variability of RCC properties will be assessed. Thus, the staff is requesting that the applicant provide the following:

1. A detailed description as to how the proposed RCC construction for the Levy plant is similar to the construction for which the shear strength to compressive strength correlations provided by the USACE is appropriate.
2. Furthermore, direct shear tests are described which are to be used for the test program. It is not clear whether sampling of the production mat will be sampled to provide direct shear tests on "as-placed" material. Additionally, once the three direct shear tests are performed, how will the results of those tests be used to predict "design" strength?
3. If the mat is to be designed following typical concrete codes used for structures, then the concrete codes are targeting about a 1% probability of failure of the material, given the design load. It is not clear from the discussion how nominal capacities will be established from just three samples. Furthermore, it is not clear from the discussion provided whether factored loads, consistent with ACI structural codes are to be used for the design assessment.
4. The applicant has indicated in discussions with the NRC staff that an expanded test program is under development. A written description of this expanded program is required in order for the NRC staff to complete an evaluation of the acceptability of the final test program. This expanded program should include discussion that identifies the expected variability of material properties, methods used to quantify the variability, how this variability is incorporated into developing an appropriate factor of safety for design, as well as how the tests that will be performed during production will assure that the design strengths will be achieved.

PGN RAI ID #: L-0861

PGN Response to NRC RAI:

This RAI response provides supplemental information to the NRC Letter 086 RAI 03.08.05-4 response (PGN RAI ID # L-0728) transmitted via Progress Energy Letter NPD-NRC-2010-068 dated August 18, 2010.

In December 2010, a suite of RCC and bedding mixes were developed and batched using materials that are expected to be readily available at the time of construction. Strength testing for these 16 RCC and 5 bedding mixes has continued through 56-day and 28-day testing, respectively, and demonstrate that the mixes will meet our design requirements. The attached report "56-Day Report, Phase II Mix Design Program, Levy Nuclear Plant," Revision 1, April 2011 provides a description of the RCC Mix Design Program and strength test results for the mixes. The attached report supersedes Section 2 of the "Pre-COL Roller Compacted Concrete Testing Plan", Levy Nuclear Plant, Revision 0 submitted as an attachment to NRC Letter 086 RAI 03.08.05-4 response (PGN RAI ID # L-0728) transmitted via Progress Energy Letter NPD-NRC-2010-068 dated August 18, 2010.

Associated LNP COL Application Revisions:

No COLA changes have been identified associated with this response.

Attachments/Enclosures:

Paul C. Rizzo Associates, "56-Day Report, Phase II Mix Design Program, Levy Nuclear Plant," Revision 1, April 2011. [63 pages]