



Serial: NPD-NRC-2008-174
July 29, 2009

10CFR52.79

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

**LEVY NUCLEAR POWER PLANT, UNITS 1 AND 2
DOCKET NOS. 52-029 AND 52-030
SUPPLEMENT 1 TO RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION LETTER
NO. 013 RELATED TO ENVIRONMENTAL RADIATION STANDARDS**

- References:
1. Letter from Brian C. Anderson (NRC) to Garry Miller (PEF), dated March 3, 2009, "Request for Additional Information Letter No. 013 Related to SRP Section 11.2 for the Levy County Nuclear Plant, Units 1 and 2 Combined License Application"
 2. Letter from Garry D. Miller (PEF) to U. S. Nuclear Regulatory Commission, dated April 1, 2009, "Response to Request for Additional Information Letter No. 013 Related to Environmental Radiation Standards", Serial: NPD-NRC-2009-053

Ladies and Gentlemen:

Progress Energy Florida, Inc. (PEF) hereby submits a revised response to the Nuclear Regulatory Commission's (NRC) request for additional information provided in the referenced letter.

A revised response to the NRC request is addressed in the enclosure. The enclosure also identifies changes that will be made in a future revision of the Levy Nuclear Power Plant Units 1 and 2 application.

If you have any further 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 July 29, 2009.

Sincerely,

Garry D. Miller
General Manager
Nuclear Plant Development

Enclosure

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

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NR0

**Levy Nuclear Power Plant Units 1 and 2
Response to NRC Request for Additional Information Letter No. 013 Related to
SRP Section 11.2 for the Combined License Application, dated March 3, 2009**

<u>NRC RAI #</u>	<u>Progress Energy RAI #</u>	<u>Progress Energy Response</u>
11.02-2	L-0518	Revised response enclosed – see following pages

NRC Letter No.: LNP-RAI-LTR-013

NRC Letter Date: March 3, 2009

NRC Review of Final Safety Analysis Report

NRC RAI NUMBER: 11.02-2

Text of NRC RAI:

Please explain how the application demonstrates that the site can meet the general environmental radiation standard in 40 CFR Part 190 (per 10 CFR 20.1301(e)), and provide sufficient information for the staff to evaluate the bases and assumptions used in the applicant's analysis. Please incorporate this analysis into the FSAR or justify its exclusion.

PGN RAI ID #: L-0518

PGN Response to NRC RAI:

This supplemental response is provided to update the calculated doses based on the accumulation of two years of meteorological data for the Levy site.

Plant and site-specific offsite dose analyses have been developed for normal release of both liquid and gaseous effluents that demonstrate compliance with applicable federal regulations, including 40 CFR Part 190. 40 CFR Part 190 requires that the annual dose equivalent to any member of the public does not exceed 25 mrem to the whole body, 75 mrem to the thyroid, and 25 mrem to any other organ of any member of the public as the result of exposures to planned discharges of radioactive materials to the general environment or operation of uranium fuel cycle facilities. There are no other uranium fuel cycle facilities in the vicinity of the site, other than Crystal River Unit 3, which would contribute to the dose received by the maximally exposed individual.

Offsite doses resulting from normal releases through the liquid pathway were calculated as described in FSAR Section 11.2.3.5 and are presented in FSAR Table 11.2-203. Offsite doses resulting from the normal releases through the gaseous pathway were calculated as described in FSAR Section 11.3.3.4 and are presented in FSAR Table 11.3-206. The total effective dose equivalent (TEDE) for the whole body due to both liquid and gaseous releases was determined using the adult dose values given in the tables and the applicable organ dose weighting factor. The calculated liquid effluent doses per unit were added to the gaseous effluent doses per unit and the resulting maximum doses to whole body, thyroid, and organ multiplied by two (2) to account for the operation of Levy Units 1 & 2 at the site.

In addition to the exposures from Levy Units 1 & 2, the liquid doses due to the operation of Crystal River Unit 3 contributes to the total public dose. Crystal River Unit 3 doses, based on actual plant effluent radioactive releases for the calendar years 2003 to 2006, are: 0.00008 mrem/yr (whole body), 0.002 mrem/yr (thyroid) and 0.002 mrem/yr (maximum organ). Direct radiation exposure from containment and other plant buildings is negligible based on information presented in the AP1000 DCD, Tier 2, Chapter 12 Section 12.4.2.1.

The sum of these annual doses discussed above are below the 40 CFR Part 190 limits for whole body dose equivalent, thyroid, and maximum organ and are presented in a new FSAR Table 11.2-205.

Associated LNP COL Application Revisions:

1. Revise FSAR Section 11.2.3.5.1 to add the following paragraphs after the last sentence.

In order to demonstrate compliance with the requirements of 40 CFR 190 (per 10 CFR 20.1301(e)), the liquid and gaseous effluent doses presented in Tables 11.2-203 and 11.3-206 were adjusted to reflect the whole body dose equivalent. The total effective dose equivalent (TEDE) for the whole body was determined using the adult dose values given in the tables and the applicable organ dose weighting factor. The liquid effluent doses per unit were added to the gaseous effluent doses per unit and the resulting maximum doses to whole body, thyroid, and organ multiplied by two (2) to account for the operation of the Levy Units 1 & 2 at the site.

In addition to the exposures from Levy, the liquid doses from Crystal River Unit 3 contribute to the total public dose due to the common location of the liquid effluent releases from Levy and Crystal River via the Crystal River discharge canal. Crystal River Unit 3 doses, based on actual plant effluent radioactive releases for the calendar years 2003 to 2006, are: 0.00008 mrem/yr (whole body), 0.002 mrem/yr (thyroid) and 0.002 mrem/yr (maximum organ). Direct radiation exposure from containment and other plant buildings is negligible based on information documented in AP1000 DCD, Tier 2, Chapter 12, Section 12.4.2.1.

The sum of the annual doses due to the releases of liquid and gaseous radioactive materials from all sources at the Levy site are presented in Table 11.2-205 and are below the 40 CFR Part 190 limits for whole body dose equivalent, thyroid, and maximum organ.

2. Revise FSAR Section 11.2 to add new FSAR Table 11.2-205 "Comparison of Maximum Exposed Individual Doses from the LNP Site with the 40 CFR Part 190 Criteria" with the table shown below.

**Table 11.2-205
Comparison of Maximum Exposed Individual Doses
from the LNP Site with the 40 CFR 190 Criteria (mrem/yr)**

Type of Dose	Design Objective (40 CFR 190)	Crystal River Unit 3 Liquid Dose based on Operating Data	LNP Calculated Liquid Dose (two units)	LNP Calculated Gaseous Dose (two units)	Total Site Dose
Whole Body Dose Equivalent	25	0.00008	0.021	5.5	5.52
Dose to Thyroid	75	0,002	0.025	12.84	12.87
Dose to another organ	25	0.002	0.14	19.4	19.54

Attachments/Enclosures:

None.