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10 CFR 52, Appendix D, X.B

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
AP1000 COMBINED LICENSE APPLICATION DEPARTURE REPORT UPDATE**

Ladies and Gentlemen:

Duke Energy Florida, Inc. (DEF) submitted an application, dated July 28, 2008, for a combined license for two AP1000 passive pressurized water reactors to be located at a site in Levy County, Florida. Part 7 of the application is the "Departures and Exemption Requests."

The purpose of this letter is to provide a report describing plant-specific departures from the AP1000 Design Control Document (i.e., Departures Report), as required by 10 CFR 52, Appendix D, paragraph X.B.1 and X.B.3.b.

There has been one new departure contained in the Levy Nuclear Plant, Units 1 and 2 "Departures and Exemption Requests" identified in the most recent six-month reporting period, July 1 to December 31, 2015. See Enclosure 1 for the evaluation.

If you have any further questions, or need additional information, please contact me at (704) 382-4046.

Sincerely,

Robert Kitchen
Director
Nuclear Development Licensing

Enclosure: 1) LNP Six Months Departure Report

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cc (w/o enclosure): U.S. NRC Region II, Regional Administrator
cc (w/ enclosure): Mr. Donald Habib, U.S. NRC Project Manager

LNP Six Months Departure Report

**Semi-Annual Departure Report
for the Period of**

July 1, 2015 Ending December 31, 2015

(3 Pages including cover page)

Departure Number: 7.3-1

Title: Source Range Neutron Flux Doubling Block Permissive

Activity Description:

IEEE 603 is a standard for safety systems imposed directly by 10 CFR part 50.55a(h). Clause 6.6 of this standard establishes three requirements for "Operating Bypasses". This logic is included for many PMS functions to permit them to be blocked, so normal plant operations can occur without the unnecessary and onerous actuation of safety systems. Portions of the block/reset associated with the flux doubling logic does not comply with IEEE 603 Section 6.6. A permissive is required for bypasses in safety systems. The flux doubling actuation bypass does not have a permissive to prevent operating the bypass for the function.

With regard to IEEE 603-1991, the Source Range nuclear Instrumentation includes a flux doubling function, the P-6 permissive instates this actuation. This actuation, when blocked, automatically reinstates the function when reset by P-6, which satisfies a part of IEEE 603 for automatic removal of the block. However this function does not employ an operating bypass permissive to prevent blocking the function; or actuating the function when the conditions are not met.

This activity proposes a change to the PMS design, and the Technical Specifications to ensure compliance with IEEE 603 and support normal plant operation needs as follows:

- 1) Add a new permissive, P-8, to permit blocking the flux logic during reactor startup. (Prevents blocking of flux doubling below 551°F RCS temperature for reactor startup, 510°F is the minimum temperature for criticality)
- 2) Add logic that will cause the PMS to force CVS valves 136A and 136B closed if the flux doubling logic is blocked during shutdown conditions (< 551°F). (Actuation if flux doubling is bypassed below 551°F RCS temperature, which is one option from IEEE 603, the other is to prevent the blocking, and this design change actuates the function).
- 3) Include new permissive and actuation in Tech Specs, and describe the changes in Tier 2 information.

Summary of Evaluation:

The proposed changes do not adversely affect any safety-related equipment or function, design function, radioactive material barrier or safety analysis. This change satisfies IEEE 603-1991, Clause 6.6, and is consistent with the accident analyses concerning inadvertent RCS dilution, as described in Chapter 15 and maintains reactor protection as required. This change provides protection from inadvertent RCS dilution, by isolating the demineralized dilution water flow path, if the source range flux doubling function is blocked when required for plant operation (< 551°F RCS temperature). Therefore, there are not any adverse effects on the design function of preventing criticality from inadvertent RCS dilution. Procedures currently provide guidance for operation of the flux doubling feature during plant operations. This change does not impact any accident analysis and is consistent with the results. There is not an adverse impact to the DCD described design function, method of evaluation or fission product barriers. Therefore this departure is not adverse.

In conclusion, based on the considerations discussed above, (1) there is reasonable assurance the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and

(3) approval of the change will not be inimical to the common defense and security or to the health and safety of the public. This departure requires an exemption from the requirements of 10 CFR Part 52, Appendix D, Section III.B, which requires compliance with Tier 1 requirements of the AP1000 DCD and the generic Technical Specifications. Therefore, an exemption is requested. This evaluation was performed to support the exemption.