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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  
REVISED 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 have been four changes to the departures contained in the Levy Nuclear Plant, Units 1 and 2 "Departures and Exemption Requests" identified in the most recent six-month reporting period, January 1 to June 30. One revised departure to a previous reported departure and three additional departures. See Enclosure 1 for the Report.

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

DO94  
MRO

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  
January 2015 Ending June 30, 2015

(5 Pages including cover page)

Departure Number: LNP DEP 3.2-1 - Revision 6

Title: Addition of downspouts to the condensate return portion of the Polar Crane Girders and flow holes between the boxes

Activity Description:

As a result of the condensate return testing conducted at the WEC Waltz Mill Test Facility, modifications to the designs of the PCG, Internal Stiffener, and PXS gutter were made. The fabrication holes in the PCG and in the stiffener are blocked. A downspout piping network was added to collect and transport condensation from the PCG and stiffener to PXS Collection Boxes. Eight new PXS downspout screens were added at the entrance of each of the downspouts at the PCG and stiffener to prevent any larger debris from blocking the downspout piping. Requirements to visually inspect the downspouts and downspout screens every 24 months are added to the surveillance requirement for the IRWST gutter in the Technical Specifications and the Technical Specification Bases in order to verify that return flow to the IRWST will not be restricted by debris. In addition to the condensate return changes, clarification of long-term safe shutdown conditions is provided. This clarification identifies the time frames in which the PRHR HX, ADS and passive injection/recirculation can be relied upon to ensure long-term safe shutdown requirements are met. The proposed change does not involve a significant reduction in the margin of safety. The proposed change does not reduce the redundancy or diversity of any safety-related SSCs. The proposed changes increase the amount of condensate available in the IRWST after the initiation of a design basis event compared to the design described in the AP1000 DCD Revision 19. Though the fraction of condensate returned is smaller than originally assumed, the proposed changes provide sufficient condensate return flow to maintain adequate IRWST water level for those events using the PRHR HX cooling function. While lower condensate return rates result in an earlier transition to PRHR HX uncover, the long-term shutdown temperature evaluation results show that the PRHR HX would continue to meet its acceptance criteria.

Summary of Evaluation:

In conclusion, based on the considerations discussed above, (1) there is reasonable assurance that 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 Tier 1 exemption.

Departure Number: LNP DEP 6.2-1

Title: Containment Hydrogen Analysis

Activity Description:

The proposed changes correct information in the DCD regarding the plant layout of the primary openings in Containment Rooms 11206 and 11207 that will be used to vent Hydrogen; specifically changes involve the distance between the openings and the containment shell and clarifies what is designated as a primary opening for these rooms. Additional information will be incorporated in the DCD to reflect that the primary openings shall have an analysis that demonstrates the openings are acceptable for venting a postulated hydrogen burn scenario; i.e., there will not be a failure of the containment shell. The ITAAC Acceptance Criteria for the in-containment PXS compartment vents are revised to reflect the current plant configuration. An analysis will be used to demonstrate a postulated hydrogen diffusion flame would not result in a failure of the containment shell. The change involves a departure from DCD Tier 1 Inspections, Tests, Analyses and Acceptance Criteria (ITAAC) Table 2.3.9-3, as well as an associated DCD Tier 2 Subsection 6.2.4.5.1 departure, but does not involve a change to the design.

Summary of Evaluation:

The proposed changes will not increase the frequency of occurrence of an accident, nor result in a malfunction of an SSC. The proposed changes regarding the primary openings location and clarification of the primary openings will not result in an accident or malfunction of an SSC. A postulated hydrogen plume vented through the primary openings will not impact a design basis limit for a fission product barrier as demonstrated by the hydrogen burn analysis. The method to evaluate hydrogen venting during a severe accident is not a different method used in the DCD. The updating of the DCD language for primary openings used for venting hydrogen which is supported by design analysis does not affect resolution of an ex-vessel severe accident design feature.

Departure Number: LNP DEP 6.4-1

Title: Main Control Room Occupant Accident Dose

Activity Description:

The departure is made from the AP1000 Design Control Document, Rev. 19 due to the MCR not being in compliance with the General Design Criterion 19. The departure changes the MCR operator dose calculation to include a) contributions from VES filter unit, and b) consider a more limiting initial full power condition for MSLB along with other changes resulting from the design finalization process. Significant changes include 1) the addition of an integral shield plate within the VES filter design unit in the Main Control Room, 2) increase VES filter efficiency for organic iodines from 30% to 90%, 3) changes to numerical values of setpoints used to actuate the VBS SFM and VES, and 4) refinement of the iodine evolution/re-evolution process in the IRWST and within containment.

Summary of Evaluation:

New MCR doses to the operator are determined for the following design basis accidents: 1) Large Break LOCA, 2) Fuel Handling Accident, 3) Steam Generator Tube Rupture, 4) Main Steam Line Break, 5) Rod Ejection Accident, 6) Locked Rotor Accident, and 7) Small Line Break Outside Containment. The new dose analyses accounted for the new VES filter shield along with other design and analysis enhancements. The dose analyses for all DBAs determined that the AP1000 design including this departure meet the GDC 19 requirements that operator dose in the MCR shall not exceed 5 rem. However, the evaluation concludes that there is an increase in consequences for the Rod Ejection Accident, and there is a departure from methods of evaluation described in the plant-specific DCD. Therefore, prior NRC approval is required.

Departure Number: LNP DEP 6.4-2

Title: Main Control Room Heat Up

Activity Description:

This departure makes several changes to ensure that the MCR VES system can perform its design functions including maintaining an environment suitable for MCRE habitability and equipment qualification. Westinghouse developed DCP APP-GW-GEE-4733 to resolve several associated issues, including:

- increased heat loads in the MCRE resulting from design evolution and finalization
- identification of a more limiting scenario than was previously evaluated
- resolution of licensing vs. design discrepancies regarding MCRE insulation
- changing classification of valves to facilitate offsite support of VES as described in the DCD

The design change proposes changes including the addition of a safety-related load shedding system, revision of Technical Specifications, revision of EQ temperature requirements for safety-related equipment located in the MCRE, and reclassification of two VES valves.

Summary of Evaluation:

In general, increasing EQ temperature requirements and the addition of a safety related system to shed non-essential, non-safety related loads makes the system more robust. All of the screen and evaluation questions are answered no, but this departure will require approval by the NRC because it impacts Tier 1 information and Technical Specifications.