



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

January 25, 2018

Mr. Mano Nazar
President and Chief Nuclear Officer
Nuclear Division
Florida Power & Light Company
Mail Stop: EX/JB
700 Universe Blvd.
Juno Beach, FL 33408

SUBJECT: ST. LUCIE PLANT, UNIT NOS. 1 AND 2 AND TURKEY POINT NUCLEAR
GENERATING UNIT, NOS. 3 AND 4 – WITHDRAWAL OF REQUESTED
LICENSING ACTION RE: ADOPTION OF 10 CFR 50.69 SUBMITTED TO NRC
FOR ACCEPTANCE REVIEW (EPID L-2017-LLA-0424 AND L-2017-LLA-0439)

Dear Mr. Nazar:

By letter dated December 19, 2017 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML17353A929), for St. Lucie Plant, Unit Nos. 1 and 2 (St. Lucie), and by letter dated December 22, 2017 (ADAMS Accession No. ML17363A216), for Turkey Point Nuclear Generating Unit Nos. 3 and 4 (Turkey Point), Florida Power & Light Company (FPL or the licensee) submitted license amendment requests (LARs) for St. Lucie and Turkey Point. The proposed amendments would adopt Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.69, "Risk-informed characterization and treatment of structures, systems, and components for nuclear reactors." The purpose of this letter is to provide the results to date of the U.S. Nuclear Regulatory Commission (NRC) staff's acceptance reviews of these LARs. The acceptance reviews were performed to determine if there is sufficient technical information in scope and depth to allow the NRC staff to complete its detailed technical review. The acceptance review is also intended to identify whether the applications have any readily apparent information insufficiencies in its characterization of the regulatory requirements or the licensing basis of the plants.

Consistent with 10 CFR 50.90, an application for an amendment to the license (including the Technical Specifications) must fully describe the changes requested, and following as far as applicable, the form prescribed for original applications. Section 50.34 of 10 CFR addresses the content of technical information required. This section stipulates that the submittal address the design and operating characteristics, unusual or novel design features, and principal safety considerations.

By letter dated January 19, 2018 (ADAMS Accession No. ML18024A444), FPL requested to withdraw the applications from NRC review. The NRC acknowledges this request to withdraw the applications. NRC staff activities on these reviews has ceased and the associated Enterprise Project Identifier numbers have been closed.

The NRC staff notes that its St. Lucie review has identified that the St. Lucie LAR did not provide technical information in sufficient detail in the following two areas to enable the staff to

complete its detailed review. The NRC staff further notes that, although the staff did not complete its acceptance review for the Turkey Point LAR, similar deficiencies exist in that request. Therefore, should FPL decide to re-submit the St. Lucie and Turkey Point LARs, each must address at least the following two areas:

- **Seismic Risks**

As required in 10 CFR 50.69(c)(1)(ii), initiating events from sources both internal and external to the plant must be considered when performing the categorization of structures, systems, and components. The regulation in 10 CFR 50.69(b)(2)(iv) requires the amendment request to include a description of, and basis for acceptability of, the 10 CFR 50.69 evaluations, which must address internally and externally initiated events.

The guidance in Nuclear Energy Institute (NEI) 00-04, Revision 0, "10 CFR 50.69 SSC Categorization Guideline," July 2005, states, "A seismic risk analysis, either a plant-specific seismic PRA [probabilistic risk analysis] or a seismic margin analysis (SMA) that reflects the current as-built, as-operated plant is used to identify structures, systems, and components (SSCs) that are safety-significant due to seismic risks." Regulatory Guide 1.201, Revision 1, "Guidelines for Categorizing Structures, Systems, and Components in Nuclear Power Plants According to Their Safety Significance," Section 8, states that "all aspects of NEI 00-04 must be followed to achieve reasonable confidence in the evaluations required by § 50.69(c)(1)(iv)."

The FPL LARs explain that FPL has no seismic PRA or SMA, but state that the site-specific seismic programs use plant-specific walkdowns described in previous Unresolved Safety Issue A-46 and Generic Letter (GL) 88-20, "Initiation of the Individual Plant Examination for Severe Accident Vulnerabilities – 10 CFR 50.54(f)," evaluations instead of an SMA. "The Technical Evaluation Report (TER) on the 'Submittal-Only' Review of the Individual Plant Examination of External Events at St. Lucie Nuclear Plant, Units 1 and 2" (on the GL 88-20 evaluations), January 1998 (ADAMS Accession No. ML17229B001), states that the walkdowns focused on component anchorage capability for a success path that assumes loss of offsite power. The TER also compared the FPL approach to that recommended in NUREG-1407, "Procedural and Submittal Guidance for the Individual Plant Examination of External Events (IPEEE) for Severe Accident Vulnerabilities" (the SMA approach), and judged the most significant differences in the two evaluation approaches to be (1) a lesser scope of components in the FPL approach, (2) a limited treatment of human actions in the plant studies, and (3) no treatment of containment systems in the FPL program. The impact of these differences between the accepted and the proposed approach should be discussed in the LARs.

The FPL LARs further state that following a review of the reevaluated seismic hazard performed in response to Near Term Task Force Recommendation 2.1, the new ground mean response spectrums are bounded by the safe shutdown earthquake in the low frequency range. The LARs conclude that "seismic considerations would not uniquely contribute significant insights to the 10 CFR 50.69 categorization process. Therefore, the consideration of seismic risk will not be utilized for safety categorization under 50.69." The guidance in NEI 00-04 specifically states that the categorization is intended to "identify SSCs that are safety-significant due to seismic risks." The LARs state that the risk of core damage or large early release from seismic events at the two plants is acceptably low, and a search for weaknesses or improvements is not needed. However, the external event categorization process illustrated in Figure 5-6 of NEI 00-04 does not end with a low risk

estimate but includes an additional step in the categorization to assess whether “failure to credit the component results in unscreened scenario.” This step is not included in the LARs seismic evaluations.

According to 50.69 (b)(2)(ii), categorization techniques may include “other systematic evaluation techniques used to evaluate severe accident vulnerabilities.” The LARs do not use a systematic alternative evaluation technique to seismic PRA or SMA for categorization of SSCs based on the seismic risk. Further, a low total seismic risk estimate may be sufficient for other types of quantitative risk applications where a bounding risk estimate may be used, but the 10 CFR 50.69 categorization process searches for SSCs that cause the risk to be low and, therefore, a low risk estimate alone is not sufficient.

Based on the lack of an evaluation about the impact of failures of SSCs due to seismic events on the unscreened and screened scenarios, and the lack of an evaluation supporting the use of a systematic approach that differs from the approach accepted by the guidance, the NRC staff has determined that the LARs do not provide sufficient justification for excluding seismic initiating events from the categorization process.

The NRC staff notes that a public pre-application meeting was held with the licensee on this topic on October 11, 2017. In this meeting, NextEra Energy indicated its intent to use the approach described above. In response, the NRC staff provided feedback to NextEra Energy that the approach deviated from currently available industry guidance and that any alternate approach would need a robust discussion of why the screening of all seismic impacts would not impact the categorization process, including sufficient descriptions of previous evaluations of seismic risk at the site. The summary of this meeting is available in ADAMS Accession No. ML17291A045.

- **Fact and Observation (F&O) Disposition**

Totals of 29 and 43 open F&Os were provided in the St. Lucie and Turkey Point LARs, respectively, related to internal events, internal flood, and fire PRA models. The licensee’s disposition for many of the F&Os states, “Prior to implementation, either this finding will be closed or a sensitivity study case will be performed to determine the impact on the CDF [core damage frequency] and LERF [large early release frequency] results for those categorizations that could be adversely affected by this finding.” Regulatory Guide 1.200 states that the LAR should include, “[a] discussion of the resolution of the peer review (...) findings and observations that are applicable to the parts of the PRA required for the application [including] a discussion of how the PRA model has been changed [or] a justification ... that demonstrates the accident sequences or contributors significant to the application decision were not adversely impacted (...) by the particular issue.” Therefore, the statement in the LARs does not provide sufficient information for the NRC staff to conclude that the disposition of each open F&O will be adequate to support the categorization process.

In addition, the NRC staff notes that its St. Lucie review has identified that technical information in the following three areas was incomplete and would likely have been the subject of requests for additional information if its detailed technical review continued. The Turkey Point acceptance review was terminated before possible findings additional to the above two areas were made.

- **Reporting of Peer Review**

The fire PRA peer reviews and F&Os were reported by the licensee in both the March 22, 2013, National Fire Protection Association (NFPA) 805 LAR and the December 19, 2017, 10 CFR 50.69 LAR. Section V.1 of the NFPA 805 LAR referred to a full scope fire PRA review in January 2010. Section 3.3 of the 10 CFR 50.69 LAR refers to a full scope fire PRA peer review in June 2011.

- **Apparent Discrepancies in Reported Resolutions of F&Os**

An additional apparent discrepancy is illustrated by differences in the licensee's reported resolution of F&O FSS-H1-01. Both the NFPA 805 and the 10 CFR 50.69 LARs describe the same F&O. F&O FSS-H1-01 identified several methods that were "beyond industry accepted guidance." In response to NFPA 805 Request for Additional Information (RAI) PRA 01m, dated April 25, 2014, the licensee explained one of its new methods identified in F&O FSS-H1-01. In its response to NFPA 805 RAI PRA 01p, dated April 25, 2014, on F&O FSS-H1-01, the licensee identified other methods that were changed to accepted methods and stated, "No other methods ... are considered deviation from accepted methods."

In the March 31, 2016, safety evaluation granting the license amendment to use NFPA 805, the NRC staff concluded that the explanation of the new method in the response to PRA RAI 01m was acceptable because the method addressed important issues, consistent with the guidance in NUREG/CR-6850, "EPRI [Electric Power Research Institute]/NRC-RES Fire PRA Methodology for Nuclear Power Facilities." The NRC staff accepted that the remaining issues in the F&O were resolved because "the licensee clarified that these methods were eliminated or revised" and, therefore, "the [fire PRA] does not use deviations from accepted methods." Therefore, the NRC staff concluded that the F&O had been resolved.

In Attachment 3 of the 50.69 LAR, the licensee included F&O FSS-H1-01 with the disposition that "Prior to implementation, either this finding will be closed or a sensitivity study case will be performed to determine the impact on the CDF and LERF results for those categorizations that could be adversely affected by this finding." This reported resolution in the 10 CFR 50.69 LAR appears inconsistent with the conclusion in the NFPA 805 safety evaluation that all of the issues in the F&O had been resolved.

- **Sources of Uncertainty**

The guidance in Section 5 of NEI 00-04, as endorsed by Regulatory Guide 1.201, Revision 1, stipulates identification of any applicable sensitivity studies to be used during the categorization process that are associated with the licensee's choice of specific models and assumptions, as discussed in Regulatory Guide 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis." The LAR states that PRA model-specific assumptions and sources of uncertainty for this application have been identified and dispositioned but did not provide any summary of the evaluated uncertainties and their disposition for the internal events and internal flooding PRA.

M. Nazar

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If you have any questions, please contact me at (301) 415-1383 or Perry.Buckberg@nrc.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Perry H. Buckberg". The signature is written in a cursive style with a large, looping "P" and "B". To the right of the signature, the word "for" is written in a smaller, simpler font.

Perry H. Buckberg, Senior Project Manager
Plant Licensing Branch II-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-335, 50-389,
50-250 and 50-251

cc: Listserv

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*by e-mail

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