



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

October 20, 2016

Mr. C. R. Pierce  
Regulatory Affairs Director  
Southern Nuclear Operating Co., Inc.  
P.O. Box 1295 /BIN B038  
Birmingham, AL 35201-1295

**SUBJECT: EDWIN I. HATCH NUCLEAR PLANT, UNITS 1 AND 2 - STAFF REVIEW OF  
LOW FREQUENCY LIMITED-SCOPE EVALUATION ASSOCIATED WITH  
REEVALUATED SEISMIC HAZARD IMPLEMENTING NEAR-TERM TASK  
FORCE RECOMMENDATION 2.1 (CAC NOS. MF3772 AND MF3773)**

Dear Mr. Pierce:

The purpose of this letter is to inform Southern Nuclear Operating Co., Inc. (the licensee) of the results of the U.S. Nuclear Regulatory Commission (NRC) staff's review of the low frequency (LF) limited scope evaluation for Edwin I. Hatch Nuclear Plant, Units 1 and 2 (HNP, Hatch), which was submitted in response to NRC's March 12, 2012, request for information (Agencywide Documents Access and Management System (ADAMS) Accession No. ML12053A340), issued under Title 10 of the *Code of Federal Regulations* Part 50, Section 50.54(f) (hereafter referred to as the 50.54(f) letter). Electric Power Research Institute (EPRI) Report 1025287, "Seismic Evaluation Guidance: Screening, Prioritization and Implementation Details (SPID)" (ADAMS Accession No. ML12333A170) provides guidance for licensees to evaluate LF exceedances. The NRC staff concludes that the licensee's assessment was performed consistent with the NRC-endorsed SPID Guidance and that the licensee has provided sufficient information to complete the response to Item 4 of the 50.54(f) request for information.

**BACKGROUND**

By letter dated March 12, 2012, the NRC issued a request for information. The request was issued as part of implementing lessons learned from the accident at the Fukushima Dai-ichi nuclear power plant. Enclosure 1 to the 50.54(f) letter requested that licensees reevaluate seismic hazards at their sites using present-day methodologies and guidance. Enclosure 1, Item 4, of the 50.54(f) letter requested that licensees perform a comparison of the ground motion response spectrum (GMRS) and safe shutdown earthquake (SSE); if the GMRS exceeds the SSE at higher frequencies, information related to the functionality of high-frequency sensitive structures, systems, and components (SSCs) is requested. This request also applies to cases in which the GMRS exceeds the SSE in the LF range (i.e., below 2.5 Hertz (Hz)). The licensee's HF evaluation is expected by August 31, 2017. The staff's assessment of the information provided in response to Items 1-3 and 5-7 of the 50.54(f) is provided by letter dated April 27, 2015 (ADAMS Accession No. ML15097A424).

By letter dated October 27, 2015 (ADAMS Accession No. ML15194A015), the NRC staff stated that a limited-scope LF evaluation for HNP was expected by December 31, 2016. The licensee's HF evaluation is expected by August 31, 2017.

## REVIEW OF LICENSEE LIMITED-SCOPE LOW FREQUENCY EVALUATION

By letter dated August 10, 2016 (ADAMS Accession No. ML16223A544), SNP submitted its limited-scope LF evaluation for Hatch for NRC review.

## TECHNICAL EVALUATION

Section 3.2.1.1 of the SPID provides guidance to licensees when performing evaluations for LF exceedances at low seismic hazard sites. This section states that for these sites, licensees should identify and evaluate the seismic capacity of all safety-significant SSCs that are potentially susceptible to damage from spectral accelerations at frequencies below 2.5 Hz. Section 3.2.1.1 of the SPID provides examples of SSCs and failure modes that are considered to be potentially susceptible to damage from spectral accelerations at LF and provides criteria to evaluate the capacity of such SSCs. The staff's review consists of reviewing the licensee's approach to ensure that potentially LF susceptible SSCs are properly identified and evaluated as described in the SPID.

### 1.1 HNP Limited-Scope LF Evaluation

The licensee followed the guidance in SPID Section 3.2.1.1 when performing LF evaluations for HNP. The licensee stated that it used available information from previous and ongoing seismic evaluations to assess the seismic capacities of SSCs that were considered to be potentially susceptible to LF considerations and identify any potential safety significant vulnerabilities due to the LF exceedances. The licensee performed seismic capacity vs. demand comparisons of those SSCs listed in the SPID and for other SSCs that were identified as potentially susceptible to LF based on previous or ongoing seismic evaluations. The licensee concluded that no LF vulnerabilities exist and that those potentially LF vulnerable SSCs were found to have seismic capacities greater than the GMRS.

### 1.2 NRC Staff Technical Assessment

The NRC staff reviewed HNP's evaluation used to address SSCs that could be susceptible to damage from spectral accelerations at LFs. The NRC staff reviewed the applicability of the licensee's approach in using previous and ongoing seismic evaluations to perform their assessment. The staff notes that these evaluations, which used ground motions greater than the GMRS, were appropriately used to identify and evaluate the respective seismic capacities of those SSCs. The staff also notes that the licensee's approach followed the guidance in the SPID.

## CONCLUSION

The NRC staff reviewed SNP's limited-scope low frequency evaluation. Based on its review, the NRC staff concludes that the licensee acceptably evaluated those SSCs that could be susceptible to damage from spectral accelerations at LFs.

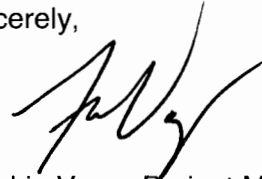
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In addition, the NRC staff concludes that the licensee's implementation of the LF evaluation met the SPID Guidance for HNP and therefore, the licensee responded appropriately to Item 4 in Enclosure 1 of the NRC's 50.54(f) letter.

If you have any questions, please contact me at (301) 415-1617 or via e-mail at Frankie.Vega@nrc.gov.

Sincerely,

A handwritten signature in black ink, appearing to read 'F. Vega', with a stylized flourish at the end.

Frankie Vega, Project Manager  
Hazards Management Branch  
Japan Lessons-Learned Division  
Office of Nuclear Reactor Regulation

Docket Nos. 50-321 and 50-366

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- 3 -

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Sincerely,

**/RA/**

Frankie Vega, Project Manager  
Hazards Management Branch  
Japan Lessons-Learned Division  
Office of Nuclear Reactor Regulation

Docket Nos. 50-321 and 50-366

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**ADAMS Accession No.: ML16285A421**

**\* via e-mail**

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