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

February 18, 2019

Mr. C. R. Pierce
Regulatory Affairs Director
Southern Nuclear Operating Company, Inc.
P. O. Box 1295/Bin - 038
Birmingham, AL 35201-1295

SUBJECT: EDWIN I. HATCH NUCLEAR PLANT, UNITS 1 AND 2 – REQUEST FOR ADDITIONAL INFORMATION (CAC NOS. MF6985 AND MF6986)

Dear Mr. Pierce:

By letter dated October 15, 2015 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML15288A528), Southern Nuclear Operating Company submitted a license amendment request for Edwin I. Hatch Nuclear Plant (HNP), Units 1 and 2. The proposed license amendment request would revise HNP Technical Specifications Surveillance Requirements 3.6.4.1.3 to increase the allowable time for the Standby Gas Treatment System to draw down the secondary containment to negative pressure from 2 minutes to 10 minutes.

The U.S. Nuclear Regulatory Commission staff has found that further information is needed to complete its review. The information request is included in the attached document. Please provide your response to Request for Additional Information (RAI) 1 within 90 days of the date of this letter. For RAIs 2 through 9, please provide your response within 30 days of the date of this letter.

Sincerely,

Michael D. Orenak, Project Manager
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos.: 50-321 and 50-366

cc: Distribution via Listserv

REQUEST FOR ADDITIONAL INFORMATION

REGARDING CHANGES TO SURVEILLANCE REQUIREMENT 3.6.4.1.3

EDWIN I. HATCH NUCLEAR PLANT, UNITS 1 AND 2

SOUTHERN NUCLEAR OPERATING COMPANY, INC.

DOCKET NOS. 50-321 AND 50-366

By letter dated October 15, 2015 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML15288A528), Southern Nuclear Operating Company (SNC, or the licensee) submitted a license amendment request for Edwin I. Hatch Nuclear Plant (HNP), Units 1 and 2. The proposed license amendment request would revise HNP Technical Specifications Surveillance Requirement (SR) 3.6.4.1.3 to increase the allowable time for the standby gas treatment system (SGTS) to draw down the secondary containment to negative pressure from 2 minutes to 10 minutes.

The U.S. Nuclear Regulatory Commission (NRC) staff has found that further information is needed to complete its review. If the request for additional information (RAI) is already contained in the radiological accident analysis calculations performed by SNC, please indicate where the information is located.

RAI-1

The NRC approved use of a full-scope Alternate Source Term pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) 50.67 at HNP on August 28, 2008, (ADAMS Accession No. ML081770075). Section 50.67(b)(2)(iii) of 10 CFR states that the NRC may issue the amendment only if the applicant's analysis demonstrates with reasonable assurance that:

> Adequate radiation protection is provided to permit access to and occupancy of the control room under accident conditions without personnel receiving radiation exposures in excess of 0.05 Sv (5 rem) total effective dose equivalent (TEDE) for the duration of the accident.

To meet 10 CFR 50.67, the radiation dose for accessing the control room must be evaluated from the site boundary to the control room for both ingress and egress for the duration of the accident. The submittal is missing a discussion and/or calculation that accounts for the control room personnel radiation exposure received upon ingress/egress from the site boundary to the turbine building for the duration of the accident. Please provide an analysis of the radiation dose received from accessing the control room in sufficient detail that will enable the NRC staff to be able to perform an independent calculation.

RAI-2

The submittal provides some of the assumptions and results of the radiological consequence analysis of increasing the loss-of-coolant accident (LOCA) secondary containment draw down

time. In addition to the increased secondary containment draw down time, there are changes in the main control room unfiltered in-leakage rate, main condenser volume, and technical support center in-leakage to support the submittal. However, the submittal does not appear to provide (1) a technical basis that addresses why these changes are acceptable, (2) explain the details of the main condenser volume error, or (3) provide the LOCA radiological consequences analysis in enough detail that will enable the NRC staff to be able to perform an independent calculation to confirm the results.

a) Please provide a technical basis that addresses why the changes to the main control room unfiltered in-leakage rate and technical support center in-leakage are acceptable.

b) Please provide the details of the main condenser volume error.

c) Please provide any changes to the input parameters, assumptions, or methodologies used in the LOCA radiological consequences analysis in enough detail that will enable the NRC staff to be able to perform an independent calculation to confirm the results.

RAI-3

The submittal states that the first of the two analyzed fuel handling accident (FHA) cases assumes that the secondary containment is drawn down within the current technical specification time of 120 seconds. The submittal concludes that both FHA cases are within the dose criteria and that there is no need to evaluate the FHA cases.

Please provide the technical basis that supports the conclusion that the FHA case with secondary containment drawn down does not need to be re-evaluated, even though the secondary containment draw down time is changing from two minutes to 10 minutes.

The NRC staff notes that the dose release point (ground level or elevated) depends on whether or not a negative pressure has been established in the secondary containment, and that the atmospheric dispersion values vary with the release point and are an input into the radiation dose calculation.

RAI-4

The submittal states that two main steam line break cases are evaluated, (1) a rupture inside the secondary containment and (2) a rupture outside secondary containment. The submittal concludes that the radiological consequences of a break outside the containment are more severe than those from a break inside containment, and that it is not necessary to consider the draw down time with respect to the main steam line break.

Please provide the technical basis that supports the conclusion that the radiological consequences of break outside the containment remains more severe than those from a break inside secondary containment with the proposed 10 minute draw down time.

RAI-5

The submittal proposed to increase the SR 3.6.4.1.3 allowable time for the SGTS to draw down the secondary containment to 10 minutes, from the currently required 120 seconds. Please provide the technical basis for the requested change. Please discuss if:

(1) the trending of SR 3.6.4.1.3 tested draw down times approaches to the allowable time limit, then provide the draw down time trending of the last few tests for each SGTS;

(2) the performance of the equipment and instrument involved with the SR test is degrading over time, then provide the details (e.g. summary of the corrective action for degradation report) for the involved equipment and instrument;

(3) the draw down time analysis was revised, then provide the changes between "before" and "after" change and the revised analysis for review;

(4) none of the above, then provide the technical basis and expected operational flexibility gained by the proposed change.

RAI-6

Please provide additional information on how the SR 3.6.4.1.3 test is performed. Specifically, please provide the locations of pressure measurement in secondary containment. Also, please justify that pressure measurements taken at those locations will ensure a vacuum of ≥ 0.20 inch of water throughout the secondary containment.

RAI-7

NUREG-800, Section 6.2.3, Acceptance Criterion 3.B, states,

> The negative pressure differential to be maintained in the secondary containment and other contiguous plant areas should be no less than 0.063 kPa (0.25 inches water gauge) compared to adjacent regions under all wind conditions up to the wind speed at which diffusion becomes sufficient to assure site boundary exposures less than those calculated for the design basis accident even if exfiltration occurs. If the leakage rate exceeds 100 percent of the volume per day, there should be a special exfiltration analysis.

Please clarify whether the draw down analysis has accounted for all wind conditions. If not, please provide justification for not accounting for all wind conditions.

RAI-8

Please provide the method and justification for how the SGTS effectiveness is accounted for in both the draw down time and radiological consequences analyses when wet steam is present in the secondary containment following a postulated LOCA.

RAI-9

The submittal proposed to increase the SR 3.6.4.1.3 allowable time for the SGTS to draw down the secondary containment to 10 minutes, from the currently required 120 seconds. Please provide the differences in the secondary containment configuration for these two tests.

February 18, 2016

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/RA/

Michael D. Orenak, Project Manager
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ADAMS Accession No.: ML16005A334 *via memo

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