



UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

October 17, 2016

Mr. Charles 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, UNIT NOS. 1 AND 2 – REQUEST FOR
ADDITIONAL INFORMATION (CAC NOS. MF6611 AND MF6612)

Dear Mr. Pierce:

By letter dated August 11, 2015, as supplemented by letters dated March 16, April 4, June 17, August 12, and September 20, 2016, Southern Nuclear Operating Company, Inc. (the licensee) requested an amendment to the Technical Specifications (TSs) for the Edwin I. Hatch Nuclear Plant, Unit Nos. 1 and 2. The license amendment request proposed to revise the TSs to adopt the U.S. Nuclear Regulatory Commission (NRC)-approved Technical Specifications Task Force (TSTF) Traveler TSTF-500, Revision 2, "DC Electrical Rewrite – Update to TSTF 360." Specifically, the licensee proposed changes to TS requirements related to direct current (DC) electrical systems in TS 3.8.4, "DC Sources – Operating"; TS 3.8.5, "DC Sources – Shutdown"; and TS 3.8.6, "Battery Cell Parameters." Additionally, the licensee proposed to add a new Battery Monitoring and Maintenance Program to TS Section 5.5, "Programs and Manuals."

The NRC staff has found that further information is needed to complete its review. Please provide your response to the enclosed request for additional information within 30 days of the date of this letter.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael D. Orenak", is written below the word "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

Enclosure
Request for Additional Information

cc w/enclosure: Distribution via Listserv

REQUEST FOR ADDITIONAL INFORMATION
REGARDING THE IMPLEMENTATION OF TSTF-500, REVISION 2
EDWIN I. HATCH NUCLEAR PLANT, UNIT NOS. 1 AND 2
SOUTHERN NUCLEAR OPERATING COMPANY, INC.
EDWIN I. HATCH NUCLEAR PLANT, UNIT NOS. 1 AND 2
DOCKET NOS. 50-321 AND 50-366

By letter dated August 11, 2015 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML15226A276), as supplemented by letters dated March 16, April 4, June 17, August 12, and September 20, 2016 (ADAMS Accession Nos. ML16076A453, ML16095A373, ML16169A239, ML16225A687, and ML16264A488, respectively), Southern Nuclear Operating Company, Inc. (the licensee) requested an amendment to the Technical Specifications (TSs) for the Edwin I. Hatch Nuclear Plant, Unit Nos. 1 and 2. The license amendment request (LAR) proposed to revise the TSs to adopt the U.S. Nuclear Regulatory Commission (NRC)-approved Technical Specifications Task Force (TSTF) Traveler TSTF-500, Revision 2, "DC Electrical Rewrite – Update to TSTF-360." Specifically, the licensee proposed changes to the TS requirements related to direct current (DC) electrical systems in TS 3.8.4, "DC Sources – Operating"; TS 3.8.5, "DC Sources – Shutdown"; and TS 3.8.6, "Battery Cell Parameter." Additionally, the licensee proposed to add a new Battery Monitoring and Maintenance Program to TS Section 5.5, "Programs and Manuals."

The NRC staff has reviewed the licensee's August 12, 2016, supplemental letter and has determined that additional information is needed to complete its review:

1. On page E-2 of the August 12, 2016, supplemental letter, the licensee provided calculations for the return-to-service (RTS) current (or float current) values for the station service and diesel generator (DG) DC batteries. The RTS (float) currents (20 amps for the station service batteries and 5 amps for the DG batteries) were calculated using the maximum current limit of the battery chargers as the net charging amps. The NRC staff notes that the licensee did not consider the battery chargers' connected DC loads (steady loads) in the calculation of the RTS current.

In the LAR, the licensee stated that the battery chargers are normally in the float-charge mode. Float charge is the condition in which the chargers are supplying their connected loads while providing adequate current (float current) to maintain their associated batteries to fully charged state.

Since the 20-amp and 5-amp battery float currents were calculated without taking into consideration the loads connected to the battery chargers, please provide data (actual or calculated) that show that the station service batteries and DG batteries are 95 percent charged with their respective float currents at 20-amp and 5-amp

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while being supplied by their associated battery chargers operating in the float-charge mode.

2. On page E-6 of the August 12, 2016, supplemental letter, the licensee states, in part:

...pilot cells will be selected using voltage and specific gravity to determine those cells that best approximate the condition of the entire battery.

- a) Please explain, with an example, how the voltage and specific gravity of cells will be used to determine those cells that best approximate the condition (and specify the condition) of the entire battery.
- b) In the LAR, the licensee proposed a new TS 5.5.15, "Battery Monitoring and Maintenance Program." The proposed TS 5.5.15.a.3 states:

In lieu of RG [Regulatory Guide] 1.129, Regulatory Position 2, Subsection 5.2 "Inspections," the following shall be used: "Where reference is made to the pilot cell, pilot cell selection shall be based on the lowest voltage cell in the battery.

The licensee's proposed method of selection of battery pilot cell proposed on page E-6 of the August 12, 2016, supplemental letter (i.e., by using voltage and specific gravity), is not in alignment with the method of selection of pilot cell required by the proposed TS 5.5.15.a.3 (i.e., by using the lowest voltage cell).

Please clarify the above and provide a corrected proposed TS 5.5.15.a.3, if necessary.

3. NRC Question # 6 on page E-9 of the August 12, 2016, supplemental letter requested the licensee to justify the deviation from TSTF-500, Revision 2, in regard to the required action and completion time for proposed TS 3.8.4 Condition F (initially Condition G in the August 11, 2015, submittal). The proposed TS 3.8.4 Condition F relates to an inoperable DG DC battery charger. However, the licensee's response to NRC Question # 6 focuses primarily on inoperable DG DC batteries.

Please provide a response that addresses an inoperable DG DC battery charger explicitly.

4. In the LAR, the licensee proposed TS 3.8.4 Condition D and TS 3.8.5 Condition B that apply when one or more (two) required battery charger(s) in one station service DC subsystem become inoperable. The required actions D.1 and B.1 associated with TS 3.8.4 Condition D and TS 3.8.5 Condition B, respectively, require restoring battery terminal voltage to greater than or equal to the minimum established float voltage within 2 hours. According to TSTF-500, required actions D.1 and B.1 imply that either an alternate means (spare battery charger(s)) is used to restore battery

terminal voltage or the inoperable charger (s) is (are) restored to operable status within the 2-hour time frame.

The licensee stated the station service direct current (DC) system for each HNP unit is made up of two separate subsystems. Each station service DC subsystem includes two 125-volt (V) batteries connected in series and three battery chargers. Two of the three battery chargers are normally in service and one is in standby (spare). A station service subsystem is considered Operable per TS Limiting Conditions for Operation (LCO) 3.8.4 and LCO 3.8.5 when the two 125-V batteries and two of the three battery chargers are Operable.

- a) Since a HNP station service DC subsystem includes only one spare battery charger, please explain how HNP will restore the terminal voltages of both 125-V batteries to greater than or equal to the minimum established float voltage (required actions D.1 and B.1) when two battery chargers are inoperable.

Inoperable station service/diesel generator battery chargers are required to be restored to operable status within 72 hours. The 72-hour completion time is a bracketed value in TSTF-500.

- b) Please provide the HNP basis for the 72-hour completion time.

- 5. In the LAR, the licensee proposed relocating the requirements of existing TS Table 3.8.6-1, "Battery Cell Parameter Requirements," to the new Battery Monitoring and Maintenance Program in TS 5.5.15. Existing Table 3.8.6-1 includes Category A, B, and C limits for the battery cell parameters (i.e., electrolyte level, float voltage, specific gravity).

Please confirm that the above-mentioned battery cell parameters will continue to be controlled at their current Category A, B, and C levels in the new Battery Monitoring and Maintenance Program and that action to restore deficient values will be implemented in accordance with the licensee's corrective action program.

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Sincerely,
/RA/

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

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