



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

September 15, 2017

Mr. James J. Hutto
Regulatory Affairs Director
Southern Nuclear Operating Company, Inc.
P.O. Box 1295 / Bin – 038
Birmingham, AL 35201-1295

SUBJECT: JOSEPH M. FARLEY NUCLEAR PLANT, UNITS 1 AND 2 – ISSUANCE OF
AMENDMENTS TO REVISE ACTIONS OF TS 3.8.9, “DISTRIBUTION
SYSTEMS – OPERATING” (CAC NOS. MF8458 AND MF8459)

Dear Mr. Hutto:

The U.S. Nuclear Regulatory Commission (the Commission) has issued the enclosed Amendment No. 213 to Renewed Facility Operating License No. NPF-2 and Amendment No. 210 to Renewed Facility Operating License No. NPF-8 for the Joseph M. Farley Nuclear Plant, Units 1 and 2, respectively. The amendments consist of changes to the technical specifications (TSs) in response to your application dated October 11, 2016, as supplemented by letters dated May 15, 2017, and June 30, 2017.

The amendments add new Action Conditions (A, B, and C) to TS 3.8.9 that address an inoperable 600 Volt AC load center (LC) 1-2R. The amendments include Required Actions and associated Completion Times for an inoperable LC 1-2R. Corresponding changes were also made to the remaining Conditions to reflect these new Conditions.

A copy of the related Safety Evaluation is also enclosed. A Notice of Issuance will be included in the Commission’s biweekly *Federal Register* notice.

Sincerely,

A handwritten signature in cursive script that reads "Shawn Williams".

Shawn A. Williams, Senior Project Manager
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-348 and 50-364

Enclosures:

1. Amendment No. 213 to NPF-2
2. Amendment No. 210 to NPF-8
3. Safety Evaluation

cc w/enclosures: Distribution via Listserv



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

SOUTHERN NUCLEAR OPERATING COMPANY

ALABAMA POWER COMPANY

DOCKET NO. 50-348

JOSEPH M. FARLEY NUCLEAR PLANT, UNIT 1

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 213
Renewed License No. NPF-2

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment to the Joseph M. Farley Nuclear Plant, Unit 1 (the facility), Renewed Facility Operating License No. NPF-2, filed by Southern Nuclear Operating Company (the licensee), dated October 11, 2016, as supplemented by letters dated May 15, 2017, and June 30, 2017, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this license amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

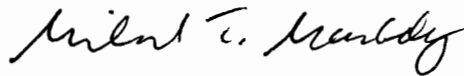
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Renewed Facility Operating License No. NPF-2 is hereby amended to read as follows:

- (2) Technical Specifications

- The Technical Specifications contained in Appendix A, as revised through Amendment No. 213, are hereby incorporated in the renewed license. Southern Nuclear shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance and shall be implemented within 90 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Michael T. Markley, Chief
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Renewed Facility
Operating License and
Technical Specifications

Date of Issuance: September 15, 2017



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

SOUTHERN NUCLEAR OPERATING COMPANY

ALABAMA POWER COMPANY

DOCKET NO. 50-364

JOSEPH M. FARLEY NUCLEAR PLANT, UNIT 2

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 210
Renewed License No. NPF-8

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment to the Joseph M. Farley Nuclear Plant, Unit 2 (the facility), Renewed Facility Operating License No. NPF-8, filed by Southern Nuclear Operating Company (the licensee), dated October 11, 2016, as supplemented by letters dated May 15, 2017, and June 30, 2017, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this license amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

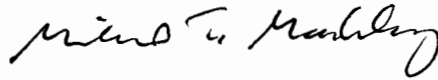
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Renewed Facility Operating License No. NPF-8 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 210, are hereby incorporated in the renewed license. Southern Nuclear shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance and shall be implemented within 90 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Michael T. Markley, Chief
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Renewed Facility
Operating License
and Technical Specifications

Date of Issuance: September 15, 2017

ATTACHMENT TO JOSEPH M. FARLEY NUCLEAR PLANT

UNITS 1 AND 2

LICENSE AMENDMENT NO. 213

TO RENEWED FACILITY OPERATING LICENSE NO. NPF-2

DOCKET NO. 50-348

AND LICENSE AMENDMENT NO. 210

TO RENEWED FACILITY OPERATING LICENSE NO. NPF-8

DOCKET NO. 50-364

Replace the following pages of the Renewed Facility Operating Licenses and the Appendix "A" Technical Specifications (TSs) with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Remove

License

NPF-2, page 4

NPF-8, page 3

TSs

3.8.9-1

3.8.9-2

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Insert

License

NPF-2, page 4

NPF-8, page 3

TSs

3.8.9-1

3.8.9-2

3.8.9-3

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 213, are hereby incorporated in the renewed license. Southern Nuclear shall operate the facility in accordance with the Technical Specifications.

(3) Additional Conditions

The matters specified in the following conditions shall be completed to the satisfaction of the Commission within the stated time periods following the issuance of the renewed license or within the operational restrictions indicated. The removal of these conditions shall be made by an amendment to the renewed license supported by a favorable evaluation by the Commission.

- a. Southern Nuclear shall not operate the reactor in Operational Modes 1 and 2 with less than three reactor coolant pumps in operation.
- b. Deleted per Amendment 13
- c. Deleted per Amendment 2
- d. Deleted per Amendment 2
- e. Deleted per Amendment 152
Deleted per Amendment 2
- f. Deleted per Amendment 158
- g. Southern Nuclear shall maintain a secondary water chemistry monitoring program to inhibit steam generator tube degradation. This program shall include:
 - 1) Identification of a sampling schedule for the critical parameters and control points for these parameters;
 - 2) Identification of the procedures used to quantify parameters that are critical to control points;
 - 3) Identification of process sampling points;
 - 4) A procedure for the recording and management of data;
 - 5) Procedures defining corrective actions for off control point chemistry conditions; and

- (2) Alabama Power Company, pursuant to Section 103 of the Act and 10 CFR Part 50, "Licensing of Production and Utilization Facilities," to possess but not operate the facility at the designated location in Houston County, Alabama in accordance with the procedures and limitations set forth in this renewed license.
- (3) Southern Nuclear, pursuant to the Act and 10 CFR Part 70, to receive, possess and use at any time special nuclear material as reactor fuel, in accordance with the limitations for storage and amounts required for reactor operation, as described in the Final Safety Analysis Report, as supplemented and amended;
- (4) Southern Nuclear, pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess, and use at any time any byproduct, source and special nuclear material as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;
- (5) Southern Nuclear, pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess, and use in amounts as required any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and
- (6) Southern Nuclear, pursuant to the Act and 10 CFR Parts 30, 40 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.

C. This renewed license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth in 10 CFR Chapter I and is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

(1) Maximum Power Level

Southern Nuclear is authorized to operate the facility at reactor core power levels not in excess of 2775 megawatts thermal.

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 210 are hereby incorporated in the renewed license. Southern Nuclear shall operate the facility in accordance with the Technical Specifications.

(3) Deleted per Amendment 144

(4) Deleted per Amendment 149

(5) Deleted per Amendment 144

3.8 ELECTRICAL POWER SYSTEMS

3.8.9 Distribution Systems — Operating

LCO 3.8.9 Train A and Train B AC, DC, and AC vital bus electrical power distribution subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Load Center 1-2R inoperable due to power supply being unavailable from Unit 1 or Unit 2.	A.1 Align 1C DG Unit Selector Switch to non-affected unit.	Immediately
	<u>AND</u> A.2 Declare the 1C Diesel Generator inoperable for affected Unit.	Immediately
B. Required Action and associated Completion Time of Condition A not met.	B.1 Declare the associated Unit 1 Service Water automatic turbine building isolation valves inoperable.	Immediately
C. Load Center 1-2R inoperable for reasons other than Condition A or B.	C.1 Declare the associated Unit 1 Service Water automatic turbine building isolation valves inoperable.	Immediately
	<u>AND</u> C.2 Declare the 1C Diesel Generator inoperable.	Immediately

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. One or more AC electrical power distribution subsystems inoperable for reasons other than Condition A, B, or C.	D.1 Restore AC electrical power distribution subsystem(s) to OPERABLE status.	8 hours
E. One or more AC vital buses inoperable.	E.1 Restore AC vital bus subsystem(s) to OPERABLE status.	8 hours
F. One Auxiliary Building DC electrical power distribution subsystem inoperable.	F.1 Restore Auxiliary Building DC electrical power distribution subsystem to OPERABLE status.	2 hours
G. Required Action and associated Completion Time of Condition D, E, or F not met.	G.1 Be in MODE 3.	6 hours
	<p><u>AND</u></p> <p>G.2 <u>NOTE</u> LCO 3.0.4.a is not applicable when entering MODE 4.</p> <p>Be in MODE 4.</p>	12 hours
H. One Service Water Intake Structure (SWIS) DC electrical power distribution subsystem inoperable.	H.1 Declare the associated Service Water train inoperable.	Immediately
I. Two trains with inoperable distribution subsystems that result in a loss of safety function.	I.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.9.1	Verify correct breaker alignments and voltage to required AC, DC, and AC vital bus electrical power distribution subsystems.	In accordance with the Surveillance Frequency Control Program



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO

AMENDMENT NO. 213 TO RENEWED FACILITY OPERATING LICENSE NO. NPF-2

AND

AMENDMENT NO. 210 TO RENEWED FACILITY OPERATING LICENSE NO. NPF-8

SOUTHERN NUCLEAR OPERATING COMPANY

JOSEPH M. FARLEY NUCLEAR PLANT, UNITS 1 AND 2

DOCKET NOS. 50-348 AND 50-364

1.0 INTRODUCTION

By application dated October 11, 2016 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML16285A354), as supplemented by letters dated May 15, 2017 (ADAMS Accession No. ML17135A387) and June 30, 2017 (ADAMS Accession No. ML17181A496), Southern Nuclear Operating Company (SNC, the licensee) submitted a request to change the Joseph M. Farley Nuclear Plant (FNP, Farley), Units 1 and 2, Technical Specifications (TSs).

The licensee stated that the purpose of the license amendment request (LAR) is to revise Technical Specification (TS) 3.8.9, "Distribution Systems – Operating," to address an overly conservative Completion Time (CT) of 8 hours for an inoperable AC bus. Based on the 600 Volt (V) AC load center (LC) 1-2R supported loads, the licensee stated that this CT to restore LC 1-2R to an OPERABLE status or to shut down the units is not commensurate with the risk of LC 1-2R being out of service. Therefore, the amendments would add new Action Conditions (A, B, and C) to TS 3.8.9 that address an inoperable LC 1-2R. The amendments would include Required Actions (RAs) and associated CTs for an inoperable LC 1-2R. Corresponding changes would also be made to the remaining Conditions to reflect these proposed new Conditions.

The supplemental letters dated May 15, 2017, and June 30, 2017, provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the U.S. Nuclear Regulatory Commission (NRC or Commission) staff's original proposed no significant hazards consideration determination as published in the *Federal Register* on December 20, 2016 (81 FR 92872).

2.0 REGULATORY EVALUATION

2.1 System Description

LC 1-2R

The LC 1-2R supplies power to the 1C diesel generator (DG) support systems, the service water system (SWS) supply and discharge motor operator valves (MOVs) to the 1C DG, the 1C DG room heating and ventilating equipment, the Diesel Building Switchgear Room A heating, ventilating, and Cardox system, and the 1B DG storage tank manual oil transfer pump.

1C Diesel Generator Support Systems

The following Diesel Generator Support System components for the 1C DG are powered by LC 1-2R:

- DG Auxiliary Jacket Water Pump
- Air compressors for diesel start
- DG Jacket Coolant Heater
- DG Jacket Coolant Pump
- DG Lube Oil Heater
- DG Lube Oil Pump
- DG Pre Lube Oil Pump
- DG Generator Space Heater
- DG Storage Oil Transfer Pump
- DG Stator Temperature Indicator
- DG Local Control Panel and Local Annunciator Power Supply
- DG Lube Oil Temperature Transmitter
- SWS motor operated valves (MOVs) for SWS supply and return

Diesel Generator Starting System

The DG starting system is described in the updated final safety analysis report (UFSAR) Section 9.5.6 (ADAMS Package Accession No. ML17117A380). The DG starting system is designed to supply sufficient compressed air at sufficient pressure in two redundant air starting trains to ensure that failure of any one component will not affect the starting of the engine. LC 1-2R supplies 600 V power to air compressors A and B for DG 1C. The DG starting system provides two redundant air starting trains for each DG so that no single active failure renders the DG starting system inoperable.

DG Generator Rooms Heating and Ventilation Systems

The DG room heating and ventilation system is described in UFSAR Section 9.4.7.1.1. The DG generator rooms heating and ventilation systems are designed to perform the following functions:

- A. Maintain a maximum temperature of 104°F during the generator shutdown cycle and 122°F during the generator operation cycle within the generator rooms.
- B. Maintain a minimum temperature of 40°F within the generator room.
- C. Prevent escape of carbon dioxide from the generator rooms in the event of the activation of the carbon dioxide flooding system in the generator rooms.

The following 1C DG room heating and ventilation system component are powered by LC 1-2R:

- 1C Generator Room Fans A, B, C
- 1C Generator Room Heaters A, B, C
- 1C Fuel Room Fans A, B

Switchgear Rooms Heating and Ventilation Systems

The switchgear rooms heating and ventilation systems are described in UFSAR Section 9.4.7.1.2, and are designed to perform the following functions:

- A. Maintain a maximum temperature of 104°F within the switchgear rooms.
- B. Maintain a minimum temperature of 40°F within the switchgear rooms.
- C. Exhaust heat and smoke from the switchgear rooms in the event of a fire.

The following Diesel Building Switchgear Room Train A Heating and Ventilation System components are powered by LC1-2R:

- DG Building Switchgear Room A Heaters A, B, C
- DG Building Switchgear Room A Fans A, B

- DG Building Switchgear Room A HVAC Louver Damper Motors 1A, 1B, 1C, 1D
- DG Building Switchgear Room A Cardox Ventilator Over-ride

Description of the Diesel Generator Cooling Water System

The diesel generator cooling water system is described in UFSAR Section 9.5.5. The DG cooling water system is a Safety Class 2B system designed to supply a continuous flow of cooling water to the heat exchangers on all diesel generators. The DG cooling water system provides a completely redundant supply of cooling water to each diesel. Since the diesels themselves are redundant, this provides a complete backup. System valves are arranged so that no single failure renders the system incapable of performing its safety function. The system meets the requirements of the single failure criteria and is Seismic Category I.

Per the load center list in the licensee's Enclosure 4 to the LAR, the following SWS MOVs receive 600 V power from LC 1-2R:

SERVICE WATER MOV V515.	Isolates Train A SW supply to turbine building. Per this amendment request, TS 3.7.8 Condition B is entered when the 1/2 R LC is out-of-service.
SERVICE WATER MOV V517.	Isolates Train B SW supply to turbine building. Per this amendment request, TS 3.7.8 Condition B is entered when the 1/2 R LC is out-of-service.
SERVICE WATER MOV V558.	Train A SW dilution bypass line isolation valve. This valve remains open to provide service water flow path to the service water pond via the dilution bypass line during normal operation and is maintained open except during maintenance. The valve fails as-is. There are no isolation signals, and no TS Required Action statements to enter if this valve is inoperable.

SERVICE WATER MOV V542.	Train A turbine building service water return isolation valve. These valves are normally open and fail as-is. There are no isolation signals for these valves, and no TS Required Action statements to enter if these valves are inoperable.
SERVICE WATER MOV V524.	1C DG Unit 1 service water supply isolation valve. During normal operation, these valves are open and fail as-is on loss of power.
SERVICE WATER MOV V525.	1C DG Unit 2 service water supply isolation valve. During normal operation, these valves are open and fail as-is on loss of power.
SERVICE WATER MOV V532.	1C DG Unit 1 service water return isolation valve.
SERVICE WATER MOV V533.	1C DG Unit 2 service water return isolation valve.
SERVICE WATER MOV V539	Unit 1 Train A service water header to recirculation line isolation valves. During normal operation, these valves are closed so that all service water return flow is discharged to the river. When the river water system is not available, these valves are opened to recirculate the service water return flow to the storage pond to maintain required storage pond volume. When the SW dilution line is not available, these valves are opened to recirculate the service water return flow to the storage pond. These valves fail as-is on loss of power, but can be manually stroked by use of locally mounted handwheels. There are no TS Required Actions to enter if these valves are inoperable.
SERVICE WATER MOV V519.	Unit 2 Train A diesel generator service water supply isolation valve. These valves are required to isolate the Diesel Generator Units served in the event of excess service water flow within the Diesel Generator Building. The excess flow may be the result of a line break or component failure. These valves are normally open and fail as-is. There are no isolation signals for these valves, and no TS Required Action statements to enter if these valves are inoperable.
SERVICE WATER MOV V537.	Unit 2 Train A diesel generator service water return isolation valve. These valves are required to isolate the Diesel Generator Units served in the event of excess service water flow within the Diesel Generator Building. The excess flow may be the result of a line break or component failure. These valves are normally open and fail as-is. There are no isolation signals for these valves, and no TS Required Action statements to enter if these valves are inoperable.

The UFSAR Section 8.2.1.3 describes that each unit is provided with one unit auxiliary transformer (UAT) and two startup auxiliary transformers (SATs). These SATs provide power for startup, shutdown, and after-shutdown requirements for both units. Under normal operating

conditions, these SATs supply power to 4.16 kilovolts (kV) Emergency Buses F, G, H, J, K, and L. The 4.16 kV Emergency Buses F, H, and K of each unit, and their associated emergency loads, are designated as load group Train A. The 4.16 kV Emergency Buses G, J, and L of each unit, and their associated emergency loads, are designated as load group Train B.

Section 8.3.1.1.7.1 of the UFSAR states that the onsite emergency AC power supply for Units 1 and 2 consists of five DGs which supply standby power for 4.16 kV emergency buses F, G, H, J, K, and L of each unit when offsite power is unavailable. The design of the onsite emergency power system is such that the plant meets its licensing basis for all design basis events using only four of the DGs, namely 1-2A, 1C, 1B, and 2B. The DGs 1-2A and 1C are assigned to the redundant load group train A, while DGs 1B and 2B are assigned to the redundant load group train B and 2C DG is dedicated to station blackout (SBO) events. There are three DGs 1-2A, 1B, and 2B rated at 4075 kilowatts (kW) and two DGs 1C and 2C rated at 2850 kW.

Section 8.3.1.1.7.2 of the UFSAR states that an undervoltage (LOSP [loss of off-site power]) signal on the 4-kV AC train A buses of either unit will start the associated shared diesel generator (diesel generator 1-2A associated with buses 1F and 2F, diesel generator 1C associated with buses 1H and 2H). Diesel generators 1B and 2B will also start upon receipt of an undervoltage (LOSP) signal from their assigned 4-kV AC train B buses (diesel generator 1B assigned to bus 1G and diesel generator 2B assigned to bus 2G).

Section 8.3.1.1.7.2 of the UFSAR also states that of the two train A DGs 1-2A and 1C, 1C DG has sufficient capacity to only provide power to a complete train of shutdown loads of a non-accident unit (LOSP only). Since a loss-of-coolant accident (LOCA) is assumed to occur on only one unit, the alignment logic of these two train A diesel generators is designed to ensure that in events involving a LOCA, 1-2A DG aligns to the accident unit and 1C DG aligns to the non-accident unit. The 1-2A DG has sufficient capacity to ensure adequate power for one complete train of normal shutdown loads (LOSP) or accident shutdown loads (LOCA) in one unit. The alignment logic of 1C DG and 1-2A DG is designed to ensure that during a LOCA, 1-2A DG aligns to the accident unit and 1C DG aligns to the non-accident unit. The alignment logic during a dual unit LOSP is 1-2A DG aligns to Unit 1 and 1C aligns to Unit 2.

Section 8.3.1.1.2 of the UFSAR provides that the LC 1-2R supplies power for engineered safety features equipment. The LC 1-2R is shared between the two units. All components are designed to conform to Class 1E electrical system design criteria as defined in Institute of Electrical and Electronics Engineers (IEEE) Standard 308. The LC 1-2R can be powered from 4.16 kV emergency buses 1H (Unit 1) or 2H (Unit 2). The power supply to LC 1-2R from 1H or 2H buses is independent and feeds the LC 1-2R via the Station Service Transformers (SSTs) 1R and 2R. The normal power supply from SST 2R feeds the LC 1-2R via breaker ER05 and the alternate power supply from SST 1R feeds the LC 1-2R via breaker ER02. The normal and alternate power supply breakers ER05 and ER02 are interlocked by an auto transfer device (ATD). The ATD upon detection of undervoltage transfers from 1H to 2H bus or vice-versa. The LC 1-2R provides power to fans, heaters, and louvers for the diesel building. Switchgear Room A contains the 4.16 kV busses and the LC 1-2R. The 1H and 2H busses are required to support the operation of 1C DG to supply the emergency buses F and K, which in turn supply design basis required loads.

2.2 Description of the Proposed Change

Current TS 3.8.9, "Distribution Systems – Operating"

The current TS states the following.

LCO 3.8.9 Train A and Train B AC, DC, and AC vital bus electrical power distribution subsystems shall be OPERABLE

APPLICABILITY: Modes 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more AC electrical power distribution subsystems inoperable.	A1. Restore AC electrical power distribution subsystem(s) to OPERABLE status.	8 hours
B. One or more AC vital buses inoperable	B.1 Restore AC vital bus subsystem(s) to OPERABLE status.	8 hours
C. One Auxiliary Building DC electrical power distribution subsystem inoperable.	C.1 Restore Auxiliary Building DC electrical power distribution subsystem to OPERABLE status.	2 hours
D. Required Action and associated Completion Time of Condition A, B, or C not met.	D1. Be in Mode 3. <u>AND</u> D2. -----NOTE----- LCO 3.0.4.a is not applicable when entering MODE 4. -----	6 hours
	Be in Mode 4.	12 hours
E. One Service Water Intake Structure (SWIS) DC electrical power distribution subsystem inoperable	E.1 Declare the associated Service Water train inoperable.	Immediately
F. Two trains with inoperable distribution subsystems that result in a loss of safety function.	F.1 Enter LCO 3.0.3.	Immediately

Proposed TS 3.8.9, "Distribution Systems – Operating"

The proposed change would add to TS 3.8.9 new Action Conditions A, B, and C that address inoperable LC 1-2R. The remaining Conditions would remain the same as the current TS 3.8.9 Conditions except that they would be renumbered due to the addition of the proposed Conditions.

LCO 3.8.9 Train A and Train B AC, DC, and AC vital bus electrical power distribution subsystems shall be OPERABLE.

APPLICABILITY: Modes 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Load Center 1-2R inoperable due to power supply being unavailable from Unit 1 or Unit 2.	A.1 Align 1C DG Unit Selector Switch to non-affected unit. <u>AND</u> A.2 Declare the 1C Diesel Generator inoperable for affected Unit.	Immediately Immediately
B. Required Action and associated Completion Time of Condition A not met.	B.1 Declare the associated Unit 1 Service Water automatic turbine building isolation valves inoperable.	Immediately
C. Load Center 1-2R inoperable for reasons other than Condition A or B.	C.1 Declare the associated Unit 1 Service Water automatic turbine building isolation valves inoperable. <u>AND</u> C.2 Declare the 1C Diesel Generator inoperable.	Immediately Immediately
D. One or more AC electrical power distribution subsystems inoperable for reasons other than Condition A, B, or C.	D.1 Restore AC electrical power distribution subsystem(s) to OPERABLE status.	8 hours
E. One or more AC vital buses inoperable.	E.1 Restore AC vital bus subsystem(s) to OPERABLE status.	8 hours
F. One Auxiliary Building DC electrical power distribution subsystem inoperable.	F.1 Restore Auxiliary Building DC electrical power distribution subsystem to OPERABLE status.	2 hours

<p>G. Required Action and associated Completion Time of Condition D, E, or F not met.</p>	<p>G.1 Be in MODE 3. <u>And</u> G.2 -----NOTE----- LCO 3.0.4.a is not applicable when entering MODE 4. ----- Be in MODE 4.</p>	<p>6 hours</p>
<p>H. One Service Water Intake Structure (SWIS) DC electrical power distribution subsystem inoperable</p>	<p>H.1 Declare the associated Service Water train inoperable.</p>	<p>12 hours</p>
<p>I. Two trains with inoperable distribution subsystems that result in a loss of safety function.</p>	<p>I.1 Enter LCO 3.0.3.</p>	<p>Immediately</p>

2.3 Applicable Regulatory Requirements and Guidance

The FNP conformance with NRC General Design Criterion (GDC) 17, "Electric Power Systems," requires, in part, that an onsite electric power system and an offsite electric power system are provided to permit functioning of structures, systems, and components important to safety. The onsite electric power supplies, including the batteries, and the onsite electric distribution system have sufficient independence, redundancy, and testability to perform their safety functions assuming a single failure. In addition, this criterion requires the transmission network to the onsite electric distribution system to be supplied by two physically independent circuits. This assures that specified acceptable fuel design limits and design conditions of the reactor coolant pressure boundary are not exceeded. Provisions are included to minimize the probability of losing electric power from any of the remaining supplies as a result of, or coincident with, the loss of power from the onsite electric power supplies.

The FNP GDC 44, "Cooling Water," requires, in part, that the service water system has been designed to transfer its respective heat loads under all anticipated operating and accident conditions. Suitable redundancy, leak detection, and system interconnection and isolation capabilities have been incorporated into the design of this system to assure that the system can accomplish all required safety functions, assuming a single failure concurrent with either onsite or offsite power exclusively.

The regulation at Title 10 of the *Code of Federal Regulations* (10 CFR) 50.36(c)(2), "Limiting conditions for operation," states, in part, that limiting conditions for operation (LCOs) are the lowest functional capability or performance levels of equipment required for safe operation of the facility. When an LCO is not met, the licensee shall shut down the reactor or follow any remedial action permitted by the technical specifications until the LCO can be met. To issue or amend a license with a particular remedial action, the Commission must be able to find, among other things, that there is reasonable assurance that the activities authorized by the operating license (e.g., continued operation for a set amount of time when an LCO is not met) can be conducted without endangering the public health and safety.

The regulation at 10 CFR 50.36(c)(2)(ii)(C), "Criterion 3," states that an LCO must be established for a structure, system, or component that is part of the primary success path and

which functions or actuates to mitigate a design basis accident or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

The regulation at 10 CFR 50.55a(h)(2), "*Protection systems*," states that nuclear power plants with construction permits issued after January 1, 1971, but before May 13, 1999, must have protection systems that meet the requirements in either IEEE Standard (Std.) 279-1968 "Proposed IEEE Criteria for Nuclear Power Plant Protection Systems," or the requirements in IEEE Std. 279-1971, "Criteria for Protection Systems for Nuclear Power Generating Stations," or the requirements in IEEE Std. 603-1991, "Criteria for Safety Systems for Nuclear Power Generating Stations," and the correction sheet dated January 30, 1995.

The FNP TSs define "OPERABLE-OPERABILITY" in Section 1.1 as:

A system, subsystem, train, component, or device shall be OPERABLE or have OPERABILITY when it is capable of performing its specified safety function(s) and when all necessary attendant instrumentation, controls, normal or emergency electrical power, cooling and seal water, lubrication, and other auxiliary equipment that are required for the system, subsystem, train, component, or device to perform its specified safety function(s) are also capable of performing their related support function(s).

3.0 TECHNICAL EVALUATION

3.1 Electrical Engineering Review

3.1.1 Background

As described in LAR Section 2.0, FNP TS 3.8.9 requires the AC distribution systems of Train A and Train B to be operable. The TS Bases Table B 3.8.9-1 lists subsystem Train A, LC 1-2R as one of the required LCs to meet TS LCO 3.8.9. The LC 1-2R is considered a shared equipment since it supplies power to loads that affect both units and it also receives power from either unit's 4.16 kV bus H. As described in the LAR, whenever this LC1-2R is inoperable, both Unit 1 and Unit 2 must enter current TS LCO 3.8.9, Condition A if they are in a Mode of applicability (i.e., MODES 1 - 4).

Consistent with UFSAR Section 3.1, an onsite and an offsite electric power system are provided to permit functioning of systems and components important to safety in compliance with FNP GDC 17, 18, and 21.

Section 8.3.1.1.7.2 of the UFSAR states that during normal plant operation, the four design basis DGs 1-2A, 1C, 1B, and 2B are set for emergency operation, each with its mode selector switch (MSS) in Mode 1 position. With this setting, the starting, alignment, and loading of these four DGs are entirely automatic in all design basis events (DBEs), with no required manual operator actions.

3.1.2 NRC Staff Evaluation

Proposed Condition A, Actions A.1 and A.2

The current TS Condition A requires that if one or more AC electrical power distribution subsystems are inoperable, then the licensee must restore AC electrical power distribution

subsystem(s) to operable status (Action A.1) within 8 hours. The licensee stated in LAR, Section 2.0, that the inoperability of the LC 1-2R impacts the capability of its supplied loads to perform their safety function. Therefore, consistent with the TS definition of operability, the proposed change would require the affected LC 1-2R loads to be declared inoperable immediately, thereby allowing operation to continue in this condition subject to the TS requirements associated with the affected LC 1-2R loads. The proposed TS 3.8.9, Condition A, Action A.1 would require the 1C DG unit selector switch (USS) to be aligned to the non-affected unit (i.e., the unit whose 4.16 kV H bus is able to supply the LC 1-2R) immediately and Action A.2 would require the 1C DG to be declared inoperable for the affected unit (i.e., the unit whose 4.16 kV H bus is not able to supply the LC 1-2R).

The staff reviewed FNP Loads Diagrams D-173096 (Unit 1 Loads Diagram) and D-203096 (Unit 2 Loads Diagram). The D-173096 shows that the ATD is connected to both 1H and 2H buses feeding LC 1-2R. With respect to the function and design of the ATD, the licensee stated in its supplemental letter dated May 15, 2017 that:

The "affected Unit" for Condition A is the unit whose 4160V H bus is unable to supply power to the LC 1-2R. ...the LC 1-2R ATD will automatically align to the other unit's 4160V H bus if it loses power from the 4160V H bus from which it's being supplied. However, as shown in Scenario 3 of the SNC Response to RAI [Request for Additional Information] No.1, not aligning the DG 1C unit selector switch to the non-affected unit (the 4160V H bus still able to supply power to the LC 1-2R) could result in neither unit's H bus being able to supply power to the LC 1-2R. Therefore, Required Action A.1 will ensure one of the two units' H bus will remain energized (through an OPERABLE DG 1C) such that the ATD will be able to have a source to seek.

The licensee also stated in its supplemental letter dated May 15, 2017, that if the ATD is unable to perform its function, then the 1C DG USS would be aligned to the unit currently supplying the LC 1-2R per Required Action A.1, since one unit would be unable to provide power to LC 1-2R. The CT to restore the ATD to operable status would therefore be consistent with the CT for restoring the 1C DG to operable status.

Section 8.3.1.1.7.2 of the UFSAR states that:

Diesel generators 1-2A and 1C are dedicated to train A, but there are no design basis events [DBEs] in which diesel generators 1-2A or 1C supplies power to safety loads of both units simultaneously. ...The Unit 1 and Unit 2 breakers for each of these two diesels are interlocked so as to prevent the diesels from being connected to both units at the same time; therefore, diesel generators 1-2A and 1C are characterized as "shared" only from the point of view of their capability to align to either Unit 1 or Unit 2.

The staff evaluated a potential DBE where 1C DG is aligned with the non-affected unit while 1-2A DG is aligned with the affected unit when a LOSP and LOCA occurs in the non-affected unit. In this DBE scenario, the proposed Condition A could result in both 1C and 1-2A DGs being aligned to the same unit and the LCO for that non-affected unit would be fully met. The logic associated with the tie breaker between the F and H busses (DF13 breaker) will ensure that 1C DG and 1-2A DG are never paralleled (i.e., if 1C DG were selected to the unit to which the 1-2A ties, DF13 breaker will remain open while 1C DG energizes the H bus (which in turn energizes the LC1-2R) while 1-2A DG energizes the F and K bus).

The non-affected unit (whose LCO is fully met) will still be able to meet the design basis assuming a worst-case single failure (e.g., failure of 1-2A, 1C, 1B, or 2B DG) because it will have both the train A and train B DGs operable. The affected unit enters the Action statement for an inoperable 1C DG.

Per UFSAR Section 8.3.1.1.2, the only safety-related load supplied by the H buses (1H or 2H) is the LC 1-2R. Since the LC 1-2R is the only safety-related equipment supplied by either the 1H or 2H bus, either the 1H or 2H bus can be de-energized during a dual unit LOSP and LOCA in one unit.

Furthermore, the licensee explained in its supplemental letter dated June 30, 2017, that selecting the 1C DG USS to the "non-affected unit" will not affect the unit to which the 1-2A DG aligns. Selecting the 1C DG USS to the non-affected unit will ensure that the 1C DG will not operate in a condition where necessary support equipment is unavailable (e.g., ventilation equipment) due to the LC 1-2R being de-energized. While this will make the 1C DG inoperable for the "affected unit" (i.e., the unit whose 4.16 kV H bus is not able to supply the LC 1-2R), the remaining B-train DG is sufficient to meet the safety analysis requirement to provide for safe reactor shutdown and to mitigate the consequences of a Design Basis Accident (DBA) such as a LOCA.

The proposed Required Action A.2 results in entry into Condition B of TS 3.8.1, "AC Sources - Operating," for the affected unit. The TS 3.8.1, Condition B, Required Action B.4 is to restore DG set to operable status within 10 days. The 1C DG is a shared DG, so declaring the 1C DG inoperable will typically cause both units to enter into this TS Condition. However, by selecting the 1C DG to the non-affected unit, it will remain operable for the selected unit and will be inoperable for the non-selected unit. In addition, if a Set B DG (i.e., the 1B or 2B DG) is inoperable or becomes inoperable, TS 3.8.1 Condition E may be entered for two DG sets inoperable for the appropriate unit. As previously mentioned, the Set A DGs (1-2A and 1C) are "shared" since they can supply either unit. Therefore, per the TS definition of Operability, if either Set A DG is inoperable, both Unit 1 and Unit 2 typically declare the LCO not met and enter the appropriate Condition. The Set B DGs, however, each only supply their respective unit. Therefore, only the affected unit declares the LCO not met if a DG Set B is inoperable.

The FNP GDC 17 requires, in part, the onsite power supplies (i.e., DGs) have sufficient independence, redundancy, and testability to perform their safety functions assuming a single failure. The licensee's proposed TS changes would add new Action Conditions A, B, and C to TS 3.8.9 that address inoperable LC 1-2R. The licensee provided in its LAR the technical analysis and regulatory analysis and supplements to support the TS changes. The NRC staff reviewed the LAR and its supplements, UFSAR Chapter 8.3, and Loads Diagrams D-173096 (Unit 1) and D-20396 (Unit 2). The staff evaluated all potential DBEs including the dual unit LOSP and LOCA in one unit due to the proposed Condition A and associated Required Actions A.1 and A. 2.

Proposed Required Action A.2 results in entry into Condition B of TS 3.8.1, "AC Sources - Operating," for the affected unit. Per the current TS 3.8.9 LCO, if DG 1C is inoperable, then both units will enter TS 3.8.1 Condition B after 8 hours, which would limit 1C DG operation to 10 days. By selecting the 1C DG to the non-affected unit, it will remain operable for the selected unit and will be inoperable for the non-selected unit. Since the SW isolation valves are also affected, the licensee may enter TS 3.7.8 Condition B, which limits the preventive maintenance work to 72 hours.

Based on the NRC staff evaluation of the proposed Required Actions A.1 and A.2 impact on 1C DG alignment during various DBEs, summarized above, the staff finds that the proposed Condition A and Actions A.1 and A.2 are acceptable.

Proposed Condition B, Action B.1

10 CFR 50.36(c)(2)(i) states, in part:

Limiting conditions for operation are the lowest functional capability or performance levels of equipment required for safe operation of the facility. When a limiting condition for operation of a nuclear reactor is not met, the licensee shall shut down the reactor or follow any remedial action permitted by the technical specifications until the condition can be met.

Proposed Required Action B.1 requires that the associated Unit 1 SWS automatic turbine building isolation valves be declared inoperable immediately. Per LAR, Section 3.0, "Technical Analysis," each train of SWS has two isolation valves, one powered by electrical train A (Q1P16V515 and Q1P16V517) and one powered by electrical train B (Q1P16V514 and Q1P16V516). Turbine Building isolation is therefore possible with only one electrical train in service. LC 1-2R provides power to Unit 1 turbine building isolation MOVs Q1P16V515 (SWS Train A) and Q1P16V517 (SWS Train B). The TS 3.7.8, "Service Water System (SWS)," Condition B is applicable when one SWS automatic turbine building isolation valve is inoperable in each SWS train.

The turbine building isolation MOVs are powered by LC 1-2R and provide redundant turbine building SWS supply isolation valves that automatically isolate the nonessential turbine building service water loads upon receipt of a Phase A Containment Isolation Signal and/or excess turbine building SWS flow rate. This action is required to ensure adequate service water flow to safety-related equipment during accident modes. The turbine building SWS supply isolation valves also provide a throttling function during a LOSP event. The throttling function also serves to automatically provide increased cooling water to the Emergency DGs during an LOSP event.

Section 9.2.1.2.1 of the UFSAR states that that the throttling function serves to provide a limited amount of cooling water to the turbine building during an LOSP event to support a controlled shutdown/cooldown of the secondary side, while at the same time ensuring maximum cooling water flow is available for the emergency DGs.

The proposed TS 3.8.9, Condition B, Action B.1 would require the declaration as inoperable of the associated Unit 1 service water automatic turbine building isolation valves (Q1P16V515 and Q1P16V517) because they will be unavailable following a design basis accident.

The NRC staff reviewed UFSAR, Section 9.2.1.2.1 and concluded that if service water automatic turbine building isolation valves (Q1P16V515 and Q1P16V517) are unavailable, then the DG 1C is inoperable. As such, the proposed Action Condition B is applicable when the loads served by LC 1-2R (i.e., the Unit 1 SWS automatic turbine building isolation valves) are declared inoperable as required by proposed TS 3.8.9, Required Action A.1. The TS 3.7.8, Condition B provides a CT of 72 hours to restore the inoperable isolation valves to operable status. Therefore, the staff finds that the proposed Condition B and Required Action B.1 are acceptable.

Proposed Condition C, Actions C.1 and C.2

Proposed Required Action C.1 is to declare the associated Unit 1 Service Water automatic turbine building isolation valves inoperable and proposed Required Action C.2 is to declare the 1C DG inoperable.

Proposed Required Actions C.1 and C.2 are identical to proposed Required Actions B.1 and A.2, respectively, except that the proposed Action C.2 is to declare the 1C DG inoperable for both units, while the proposed Action A.2 is to declare the 1C DG inoperable for the affected unit.

Based on the above, NRC staff concludes that proposed Condition A, Action A.2 and proposed Condition B, Action B.1, proposed Condition C, Actions C.1 and C.2 are acceptable.

3.1.3 NRC Staff Conclusion

The NRC staff has reviewed the licensee's proposed TS changes and supporting documentation. Based on the evaluation discussed above, the NRC staff concludes that the proposed amendments to the FNP, Units 1 and 2, TS 3.8.9 regarding the addition of new Action Conditions (A, B, and C) that address inoperable LC 1-2R are consistent with the requirements in FNP GDC 17, 10 CFR 50.55a(h)(2), and the FNP TS definition for "Operable-Operability," and provide acceptable remedial actions per 10 CFR 50.36(c)(2)(i). Therefore, the staff concludes that the proposed changes are acceptable.

3.2 Balance of Plant Review

3.2.1 Background

The 600 V AC LC 1-2R powers various shared loads for FNP Units 1 and 2 including the 1C DG support systems, Switchgear Room Train A heating and ventilation equipment, 1C DG room heating and ventilation equipment, various MOVs in the SWS, and the 1B fuel oil transfer pump for the 1B DG. LC 1-2R can be powered from either the 4.16 kV 1H bus of Unit 1 or the 2H bus of Unit 2.

Current TS LCOs for both units require LC 1-2R to be operable. If LC 1-2R becomes inoperable, then the TS allowed CT for restoring LC 1-2R to operable status is 8 hours. If the CT is not met, then both units are required to be in Mode 4 within 12 hours. The basis for the 8-hour CT is from the TS Bases, which state:

With one or more required AC buses, load centers, motor control centers, or distribution panels, except AC vital buses, inoperable, and a loss of safety function has not yet occurred, the remaining AC electrical power distribution subsystems are capable of supporting the minimum safety functions necessary to shut down the reactor and maintain it in a safe shutdown condition, assuming no single failure. The overall reliability is reduced, however, because a single failure in the remaining power distribution subsystems could result in the minimum required ESF functions not being supported. Therefore, the required AC buses, load centers, motor control centers, and distribution panels must be restored to OPERABLE status within 8 hours.

The licensee contends that the 8-hour CT is overly conservative for LC 1-2R and not commensurate with the risk associated with the loss of LC 1-2R and, therefore, has proposed revised TS 3.8.9.

3.2.2 NRC Staff Evaluation

Each FNP unit requires an A Train set of DGs (1C and 1-2A) and a B Train DG to satisfy the LCO of TS 3.8.1. The 1C DG and the 1-2A DG are swing DGs (i.e., they can be aligned to either Unit 1 or Unit 2) and both are required to meet the TS LCO 3.8.1 for Unit 1 and Unit 2. The 1C DG has sufficient capacity to provide power to LC 1-2R and the shutdown loads of the A train of a non-accident unit for an LOSP, while the other unit is experiencing a Safety Injection (SI) and an LOSP. The 1C DG could also power LC 1-2R and the Train A safety loads of either unit when the site is experiencing a dual unit LOSP.

In the following discussion, the term "affected unit" refers to the unit that cannot power LC 1-2R. The "non-affected unit" is the unit that can power LC 1-2R. If LC 1-2R is inoperable because either the Unit 1 source or the Unit 2 source is not capable of powering LC 1-2R, then the 1C DG may not be able to perform its safety function for that unit. The licensee has proposed that the 1C DG be declared inoperable for that unit (affected unit) which would require entry into TS 3.8.1 Required Actions for that unit for an inoperable DG. Concurrently, if the 1C DG can power the other unit's (non-affected unit) H bus which in turn powers LC 1-2R, then the inoperability of the LC 1-2R does not affect the ability of the 1C DG to perform its safety function in the non-affected unit. The licensee's safety conclusion is the 1C DG must be declared inoperable for the affected unit, which cannot power LC 1-2R, but remains operable for the other unit (non-affected) whose H bus can power LC 1-2R. Therefore, the license submitted its proposed TS amendment with proposed new Conditions A, B, and C.

The licensee proposed new Condition A for the situation in which LC 1-2R is inoperable because it does not have power available from Unit 1 or Unit 2. The proposed Required Actions are to declare the 1C DG inoperable for that unit and to align the 1C DG Unit Selector Switch to the non-affected unit. In this scenario, the affected unit would be in a 10-day CT for an inoperable DG in accordance with TS 3.8.1. LC 1-2R would continue to power its loads from offsite power, unless a DBA occurred.

When in proposed Condition A and performing proposed Required Actions A.1 and A.2, if a DBA were to occur in the affected unit, the 1-2A DG would align to that unit and the 1C DG would power the non-affected unit and the DBA would be mitigated while the affected unit is safely shutdown (in this case the alignment of the 1C DG Selector Switch would not matter from a functional standpoint because the 1C DG would have automatically aligned to the non-affected unit regardless). LC 1-2R would continue to have power and support its loads.

When in proposed Condition A and performing proposed Required Actions A.1 and A.2, if a DBA were to occur in the non-affected unit, both the 1C DG and the 1-2A DG would start and both DGs would be aligned to the non-affected unit. The Train A buses in the affected unit would not have power and the affected unit would rely solely on Train B to be brought to safe shutdown. LC 1-2R would continue to have power and support its loads.

The NRC staff noted that, in the above case, if the cause of the unavailability of an affected unit's power supply to LC 1-2R as described in proposed Condition A was a failure downstream of the associated H bus (i.e., DH08-2, or SXXFMR 2R, or ER05, or anything downstream of the H bus as shown in Enclosure 5 of the LAR), then purposefully aligning the Unit Selector Switch

to the non-affected unit may not be necessary and may inadvertently cause the A train buses on the affected unit to not be powered for a DBA in the non-affected unit as described above. Therefore, in a request for additional information (RAI) dated April 17, 2017 (ADAMS Accession No. ML17095A415), the NRC staff asked the licensee to justify proposed Condition A (i.e., aligning the 1C DG Unit Selector Switch to the non-affected unit) when its associated H bus remains operable and could power the associated A Train safeguards loads but could not power LC 1-2R. In its supplemental letter dated May 15, 2017, the licensee stated that the proposed Required Action A.1 (i.e., align the 1C DG Unit Selector Switch to the non-affected unit) does not result in a reduction in plant safety. In the scenario presented in the RAI, performing Required Action A.1 assures LC 1-2R remains automatically energized, when otherwise it would have to be manually energized in the accident scenario presented in the RAI. LC 1-2R will continue to be able to supply its required loads including the support systems for the 1C DG and one train of closing the Unit 1 SWS MOV isolation valves to the turbine building. The NRC staff finds the licensee's response acceptable because of the importance of maintaining an automatic power supply to LC 1-2R to keep the 1C DG operable without taking immediate manual action to re-power LC 1-2R and manually start the 1C DG.

The licensee also proposed new Condition B if the Required Actions of proposed new Condition A were not immediately completed. The proposed Required Action is to declare the associated Unit 1 Service Water automatic turbine building isolation valves inoperable. Required Action A.2, which declares the 1C DG inoperable for the affected unit, would also be in effect. This action is necessary because if an SI occurred in the non-affected unit, the 1C DG would align to the affected unit. However, LC 1-2R cannot be powered from the affected unit and would be de-energized with a loss of the associated loads including the Unit 1 SWS automatic turbine building isolation valves. Therefore, the associated Unit 1 Service Water automatic turbine building isolation valves should be declared inoperable when in proposed Condition B. The NRC staff asked the licensee in an RAI dated April 17, 2017, to describe all of the various situations when the licensee might choose not to perform proposed Required Action A.1 and enter proposed Condition B intentionally and to specify all of the reasons and justification for such action. In its supplemental letter dated May 15, 2017, the licensee stated that its preference will always be to remain in proposed Condition A and not enter proposed Condition B and that the only reason to enter proposed Condition B would be if the operators felt that the unit selector switch was unable to perform its function for any reason. The NRC staff concurs with the licensee's response and agrees that the Required Action of proposed Condition B is necessary if the Required Actions of proposed Condition A could not be completed.

The licensee also proposed new condition C where LC 1-2R is inoperable for conditions other than Condition A or B (i.e., no power is available to LC 1-2R). The proposed Required Actions C.1 and C.2 are to declare the associated Unit 1 Service Water automatic turbine building isolation valves inoperable and to declare the 1C DG inoperable for both units. The proposed Required Actions C.1 and C.2 are conservative since all of the loads powered from LC 1-2R become inoperable and Required Actions C.1 and C.2 declare all TS systems associated with LC 1-2R inoperable, which requires entry into the associated Required Actions.

The LC 1-2R also powers the 1B Storage Tank Oil Manual Transfer Pump 502A. This pump is manually operated. The associated fuel oil storage tank for the 1B DG has two fuel oil transfer pumps. Each pump is capable of simultaneously supplying the diesel generator full load requirements and fill the associated day tank. One pump automatically maintains the required day tank level and the other pump, 502A, is strictly manual. With LC1-2R inoperable as in proposed Conditions A, B, or C, the automatic pump is sufficient for operability of the 1B DG. There are no TS Required Actions as long as the automatic pump remains operable.

The LC 1-2R supports the loads that it powers. The loads can be considered supported systems, which are the 1C DG support systems, Switchgear Room Train A heating and ventilation equipment, 1C DG room heating and ventilation equipment, various MOVs in the SWS, and the 1B Storage Tank Oil Manual Transfer Pump 502A for the 1B DG. The 1B Storage Tank Oil Manual Transfer Pump 502A is a backup pump for the 1B DG whose function is not required to maintain operability of the 1B DG. The licensee's current TS limit for the CT of an inoperable LC 1-2R is 8 hours, which is shorter than the CTs of the supported systems. The proposed TS would allow the CT to be controlled by the shortest CT of the supported systems, which is the 1C DG (10 days) for proposed Condition A, and the Unit 1 SWS automatic turbine building isolation valves (72 hours) for Unit 1 and the 1C DG for Unit 2 when in proposed Conditions B or C. For plant safety, the CT of the support system need not be shorter than the CT of the supported systems, provided the support system has no other safety function. LC 1-2R provides no other safety function than providing power to the supported systems.

3.2.3 NRC Staff Conclusion

The NRC staff has reviewed the licensee's proposed TS changes and supporting documentation. Based on the above, the NRC staff concludes that the proposed amendments to the FNP, Units 1 and 2, TS 3.8.9 regarding the addition of new Action Conditions (A, B, and C) that address inoperable LC 1-2R provide acceptable remedial actions in accordance with the requirements in 10 CFR 50.36(c)(2)(i), the FNP TSs, and the FNP UFSAR. Therefore, the staff concludes that the proposed changes are acceptable.

3.3 Technical Specifications Branch Review

3.3.1 Background

Per the LAR and the supplemental letters dated May 15, 2017 and June 30, 2017, SNC proposed new Conditions, Required Actions, and Completion Times, A, B, and C in the remedial actions table for LCO 3.8.9 for FNP, Units 1 and 2. Existing Conditions, Required Actions, and Completion Times, A through F, were proposed to be renumbered D through I accordingly (see section 2.2 of this safety evaluation (SE) for the changes in tabular format).

3.3.2 NRC Staff Evaluation

In Sections 3.1 and 3.2 of this SE, the NRC staff established a technical basis for the acceptance of the proposed new Conditions, Required Actions, and Completion Times, A, B, and C in the remedial actions table for LCO 3.8.9 for FNP, Units 1 and 2, as acceptable remedial actions that will meet the requirements of 10 CFR 50.36(c)(2)(i).

The proposed changes to existing Conditions, Required Actions, and Completion Times, A through F, were to renumber them D through I as shown in the table of section 2.2 of this SE. These proposed changes are editorial in nature to accommodate the addition of the proposed new Conditions, Required Actions, and Completion Times, A through C, and, as such, are acceptable.

3.3.3 NRC Staff Conclusion

The NRC staff has reviewed the licensee's proposed TS changes and supporting documentation. Based on the above, the NRC staff has determined that the proposed amendments to FNP, Units 1 and 2, TS 3.8.9 provide acceptable remedial actions per 10 CFR 50.36(c)(2)(i). Therefore, the staff concludes that the proposed changes are acceptable.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the State of Alabama official was notified of the proposed issuance of the amendments on August 8, 2017. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendments change requirements with respect to the installation or use of facility components located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration, and there has been no public comment on such finding published in the *Federal Register* on December 20, 2016 (81 FR 92872). Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

6.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) there is reasonable assurance that such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributors:

H. Kodali, NRR
G. Purciarello, NRR
P. Snyder, NRR

Date: September 15, 2017

SUBJECT: JOSEPH M. FARLEY NUCLEAR PLANT, UNITS 1 AND 2 – ISSUANCE OF AMENDMENTS TO REVISE ACTIONS OF TS 3.8.9, “DISTRIBUTION SYSTEMS – OPERATING” (CAC NOS. MF8458 AND MF8459)
 DATED: SEPTEMBER 15, 2017

DISTRIBUTION:

PUBLIC LPL2-1 R/F
 RidsNrrLAKGoldstein Resource RidsRgn2MailCenter Resource PSnyder, NRR
 RidsNrrDssStsb Resource RidsNrrPMFarley Resource GPurciarello, NRR
 RidsNrrDeEvib Resource HKodali, NRR
 RidsACRS_MailCTR Resource NOtta, NRR

ADAMS Accession No.: ML17205A020 *Via Memo

OFFICE	NRR/DORL/LPL2-1/PM	NRR/DORL/LPL2-1/LA	NRR/DE/EEOB/BC	NRR/DSS/SBPB/BC
NAME	SWilliams	KGoldstein	JQuichocho	BDennig
DATE	8/8/2017	8/8/2017	7/28/2017	7/11/2017*
OFFICE	NRR/DSS/STSB/ABC	OGC	NRR/DORL/LPL2-1/BC	NRR/DORL/LPL2-1/PM
NAME	JWhitman	JWachutka (NLO)	MMarkley	SWilliams
DATE	8/23/2017	9/7/2017	9/14/2017	9/15/2017

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