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

April 17, 2017

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

SUBJECT: JOSEPH M. FARLEY NUCLEAR PLANT, UNIT 1 AND UNIT 2 – REQUEST FOR ADDITIONAL INFORMATION (CAC NOS. MF8458 AND MF8459)

Dear Mr. Hutto:

By letter dated October 11, 2016, Southern Nuclear Operating Company, Inc. (SNC, the licensee) submitted a license amendment request to revise the Technical Specifications (TSs) for the Joseph M. Farley Nuclear Plant, Units 1 and 2.

The proposed changes would add new Action Conditions (A, B, and C) to TS 3.8.9, "Distribution Systems – Operating" that address inoperable 600 volt alternating current (AC) load center (LC) 1-2R. The proposed changes include Required Actions and associated Completion Times for the LC 1-2R.

The Nuclear Regulatory Commission has determined that the enclosed Request for Additional Information is needed to complete its review. The enclosure was discussed with your staff on April 17, 2017. SNC agreed to respond within 30 days of this letter. Please note that the NRC staff's review is continuing and further requests for information may be developed.

Sincerely,

Shawn Williams

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

Docket Nos. 50-348, 50-364

Enclosure:
Request for Additional Information

REQUEST FOR ADDITIONAL INFORMATION

TS 3.8.9, "DISTRIBUTION SYSTEMS – OPERATING"

SOUTHERN NUCLEAR OPERATING COMPANY, INC.

JOSEPH M. FARLEY NUCLEAR PLANT, UNIT 1 AND UNIT 2

DOCKET NOS. 50-348, 50-364

By letter dated October 11, 2016 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML16285A354), Southern Nuclear Operating Company, Inc. (SNC, the licensee) submitted a license amendment request (LAR) to revise the Technical Specifications (TSs) for the Joseph M. Farley Nuclear Plant (FNP), Units 1 and 2. The licensee proposed change would add new Action Conditions (A, B, and C) to TS 3.8.9 that address inoperable 600 Volt alternating current (AC) load center (LC) 1-2R. The proposed changes include Required Actions and associated Completion Times for the LC 1-2R.

The U.S. Nuclear Regulatory Commission (NRC) staff has reviewed the application and has determined that the following questions are needed to complete its review.

Request for Additional Information (RAI) No. 1

Regulatory Basis

FNP General Design Criteria, Criterion 17, "Electric Power Systems", states, in part:

> 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 safety function for each system (assuming the other system is not functioning) provides sufficient capacity and capability to assure that specified acceptable fuel design limits and design conditions of the reactor coolant pressure boundary are not exceeded as a result of anticipated operational occurrences, and the core is cooled and containment integrity and other vital functions are maintained in the event of postulated accidents.
>
> The onsite electric power supplies, including the batteries, and the onsite electric distribution system, have sufficient independence, redundancy, and testability to perform their safety function assuming a single failure.
>
> 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 generated by the nuclear power unit, the loss of power from the transmission network, or the loss of power from the onsite electric power supplies.

Issue

The licensee has stated on page E1-8 of the LAR:

> In the event of a dual unit LOSP [loss of offsite power], this alignment (i.e., 1 C and 1-2A tied to the same unit) would leave the affected unit's (i.e. the unit unable to supply power to the LC 1-2R) A-train de-energized. This is the basis for the affected unit entering [Limiting Condition for Operation] (LCO) 3.8.1 for an inoperable diesel set, since the 1 C DG [diesel generator] may therefore be unavailable to align to the opposite unit as the 1-2A DG (i.e. the unit not experiencing the SI [safety injection]). Consistent with the definition of OPERABILITY, the 1C DG must be declared inoperable for the affected unit.

If the problem is a failed component i.e., DH08-2, or SSXFMR 2R or ER05 or SSCs downstream of the H bus, as shown in Enclosure 5 of the LAR as the cause of Proposed Condition A, then declaring the 1C DG inoperable and aligning the 1C DG selector switch to the non-affected unit appears to make the A-train electrical distribution not available in the affected unit.

Request

Would the issue described above be considered a reduction in plant safety? Also, considering the concerns described above, please justify Proposed Condition A or a TS modification.

RAI No. 2

Regulatory Basis

FNP TS 1.1, "Definitions" state the definition for OPERABLE-OPERABILITY 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).

Issue

When in CONDITION C of the proposed TS, Load Center 1-2R will be unable to supply power to any of its loads, including Switchgear Room A fans and louver damper motors and heaters. Loss of ventilation/heating in Switchgear Room A could affect the function of the 1H and 2H busses and their ability to perform their support function, which in turn affect the long term safety function and OPERABILITY of the 1F, 2F, 1K and 2K busses.

Request

Considering the mission time of the 1F, 2F, 1K and 2K busses in mitigating a design basis accident (DBA) and with design basis weather conditions, discuss the effect of the loss of ventilation in Switchgear Room A, on the long term function of the 1H and 2H busses and their ability to perform support functions for the Class 1E K and F buses in order for these buses to

remain operable throughout their mission time as the buses power safety related loads during a DBA. Please include a discussion regarding how long until the associated electrical busses would be unable to perform their safety function and the basis for such determination. Please identify the affected TS and the associated required actions of the TS and identify any compensatory actions.

RAI No. 3

Regulatory Basis

Title 10 of the *Code of Federal Regulations* (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.

Issue

The licensee's proposed Required Action A.1 states, "Align 1C DG Unit Selector Switch to non-affected unit." Proposed Condition B is for when Condition A is not met.

Request

Describe any situations when the licensee would choose not to perform Required Action A.1 and provide a justification for each situation where Condition B is entered without entry into Required Action A.1 or A.2.

RAI No. 4

Page E1-3 of the LAR in the paragraph beginning with "TS 3.8.9 ..." states that the "... unit(s) must be in MODE 3 in 6 hours and in MODE 5 within 36 hours." This appears to be in error as the current TS Condition D (TS page 3.8.9-2) requires MODE 4 as the end state (Amendments 202 and 198 for Units 1 and 2, respectively) Conditions for A, B, and C not met. Please clarify the apparent error.

RAI No. 5

Regulatory Basis

FNP General Design Criteria, Criterion 17, "Electric Power Systems" as described in RAI No. 1.

Issue

In the LAR, Section 2.0, the licensee states that the TS Bases Table B 3.8.9-1 lists the LC 1- 2R as one of the required load centers (LCs) to meet the LCO 3.8.9. This LC is considered shared equipment since it supplies power to loads that affect both units and it also receives power from either units' 4160V bus H (1H and 2H). Therefore, whenever this LC is inoperable, both Unit 1 and Unit 2 must enter current LCO 3.8.9 Condition A if they are in a Mode of applicability (MODES 1 - 4).

The proposed CONDITION A, Required Action A.1 requires alignment of the 1C DG selector switch using operator actions in the main control room. FNP Load Diagram, drawing D-173096, shows the Auto Transfer Device (ATD) connecting to both power sources which are independent and redundant from the 1H and 2H buses feeding LC 1-2R. In the proposed CONDITION A, LC 1-2R is inoperable due to power supply being unavailable either from buses 1H or 2H. In the LAR, the licensee did not appear to address the design features and capability of ATD to switch from one source to alternate source for the proposed CONDITION A, Required Action A.1.

Request

a. The proposed Required Action A.1 states "align 1C DG Unit Selector Switch to non-affected Unit." Explain why Action A.1 is required since ATD will transfer from normal source (affected Unit) to alternate source (non-affected Unit) or vice versa without manual operation. Please explain the terms "affected Unit" and "non-affected Unit" and the scenarios assumed.

b. The current TS 3.8.9, "Distribution Systems – Operating," Condition A, allows 8 hours to restore the inoperable Alternate Current (AC) electrical power distribution system(s) to OPERABLE status. Since the ATD allows auto transfer to the available power source (alternate), explain why the 8 hours Completion Time (CT) LCO is not adequate to restore the inoperable AC electrical power distribution system(s) to OPERABLE status.

c. If the ATD fails to transfer from its position, how this failure will affect the proposed TS changes. What will be the CT for restoring the ATD to operable status?

d. In the FNP LAR, the licensee explained that current TS 3.8.9, Condition A has a CT of 8 hours for the inoperable LC 1-2R, which would appear to indicate a dual unit shutdown is required after the expiration of the 8 hour CT because LC 1-2R is shared between both units. In addition, the CT limits the extent of maintenance that could be performed. The licensee also explained that the new proposed Conditions (A, B, and C) to TS 3.8.9, "Distribution System – Operating," would reduce the likelihood of an unnecessary dual-unit TS required shutdown while also providing more flexibility for maintenance activities. Please provide details of all maintenance to be performed on the LC 1-2R including their frequencies. Also, provide plant specific operating experience that required LC 1-2R to be declared inoperable (failure of both sources or equipment).

RAI No. 6

Regulatory Basis

50.36(c)(2)(i) as described in RAI No. 3.

Issue

FSAR Section 8.3.1.1.7.2 states that DGs 1-2A and 1C are dedicated to train A, but there are no Design-Basis Events (DBEs) in which DG 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, DGs 1-2A and 1C are characterized as "shared" only from the point of view of their capability to align to either Unit 1or Unit 2.

Request

Assuming the proposed TS 3.8.9, Condition A, Required Action A.1 is completed, as stated, then the affected Unit will have one diesel (i.e., Set B DG. In Condition A, Required Action A.1, DG 1C will be aligned to the non-affected Unit and DG 1-2A will be aligned to the affected Unit). Subsequently, if a DBE (Loss Of Offsite Power (LOSP)/Loss-Of-Coolant Accident (LOCA) or LOSP) occurs in the non-affected Unit, then as per the design 1-2A DG should align with the non-affected Unit. Then both 1C and 1-2A DGs are aligned with the non-affected Unit. What actions will be taken under this scenario? In this case, explain how this requested TS change meet the design basis as specified in accident analysis. In addition, explain the plant response, if a DBE such as LOSP or LOSP/LOCA coincident with a single failure (e.g., loss of Set B DG) occurs on the non-affected Unit.

RAI No. 7

Regulatory Basis

FNP TS 1.1 defines OPERABLE-OPERABILITY as described in RAI No. 2.

Issue

The proposed TS 3.8.9 Condition A, Required Action A.2 requires to declare DG 1C as inoperable for the affected Unit. Proposed Required Action A.2 would limit operation to 10 days for the affected unit. Also, if the affected unit's DG Set B were to become inoperable during this condition, TS 3.8.1 Condition E would be entered for two DG sets being inoperable.

Request

Since DG 1C is shared between the Units and the proposed change requires the DG 1C to be declared inoperable even for inoperability resulting from other components on the power paths to maintain power availability to LC 1-2R, provide technical and regulatory basis demonstrating the proposed action is conservative in maintaining plant safety.

SUBJECT: JOSEPH M. FARLEY NUCLEAR PLANT, UNIT 1 AND UNIT 2 – REQUEST FOR ADDITIONAL INFORMATION (CAC NOS. MF8458 AND MF8459) DATED APRIL 17, 2017

DISTRIBUTION:
PUBLIC
LPL2-1 R/F
RidsNrrDorlLpl2-1 Resource
RidsNrrDeEpnb Resource
RidsNrrLAKGoldstein Resource
RidsRgn2MailCenter Resource
RidsNrrPMFarley Resource
RicsACRS_MailCTR Resource
GPurciarello, NRR
HKodali, NRR
NOtta, NRR
PSnyder, NRR
SWilliams, NRR

ADAMS Accession No.: ML17095A415 *by e-mail

OFFICE	DORL/LPL2-1/PM	DORL/LPL2-1/LA	DE/EEEB/BC*
NAME	SWilliams	KGoldstein	JZimmerman
DATE	4/13/17	4/06/17	4/12/17
OFFICE	DSS/SBPB//BC*	DORL/LPL2-1/BC	DORL/LPL2-1/PM
NAME	RDennig	MMarkley	SWilliams
DATE	3/29/17	4/17/17	4/17/17

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