



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

May 1, 2018

Ms. Cheryl A. Gayheart
Regulatory Affairs Director
Southern Nuclear Operating Co., Inc.
P.O. Box 1295, Bin 038
Birmingham, AL 35201-1295

SUBJECT: JOSEPH M. FARLEY NUCLEAR PLANT, UNITS 1 AND 2 - REQUEST FOR
ADDITIONAL INFORMATION RE: TS 3.3.2, "ENGINEERED SAFETY FEATURE
ACTUATION SYSTEM (ESFAS) INSTRUMENTATION" (EPID L-2017-LLA-0428)

Dear Ms. Gayheart,

By letter dated December 21, 2017, the Southern Nuclear Operating Company, Inc., (SNC) submitted an amendment request to revise the Joseph M. Farley Nuclear Plant, Units 1 and 2, Technical Specifications (TSs). The proposed amendment would revise TS 3.3.2, "Engineered Safety Feature Actuation System (ESFAS) Instrumentation," by adding actions that allow time to restore one high steam flow channel per steam line to operable status before requiring a unit shutdown in the event two channels in one or more steam lines are discovered inoperable due to the trip setting not within the allowable value.

The U.S. Nuclear Regulatory Commission (NRC) staff has determined that additional information is needed in order to complete its review. In particular, the NRC staff was unable to complete its no significant hazards consideration determination based on the information provided in the SNC letter dated December 21, 2017. During a clarification call on March 23, 2018, Mr. Lowery of your staff stated that SNC would revise its no significant hazards consideration in a subsequent submittal. During a clarification call on April 24, 2018, Mr. Lowery agreed that SNC would respond within 30 days of the date of this letter. Details on the request for additional information and no significant hazards consideration are provided in the Enclosure to this letter.

Sincerely,

A handwritten signature in black ink, appearing to read "Shawn A. Williams for".

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

Enclosure:
Request for Additional Information
cc w/encl: Listserv

REQUEST FOR ADDITIONAL INFORMATION

TS 3.3.2, "ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION"

JOSEPH M. FARLEY NUCLEAR PLANT, UNITS 1 AND 2

SOUTHERN NUCLEAR OPERATING COMPANY, INC.

DOCKET NOS. 50-348 AND 50-364

By letter dated December 21, 2017 (Agencywide Documents Access and Management System Accession No. ML17355A516), the Southern Nuclear Operating Company, Inc., submitted an amendment request to revise the Joseph M. Farley Nuclear Plant, Unit 1 and Unit 2 (Farley), Technical Specifications (TSs). The proposed amendment would revise TS 3.3.2, "Engineered Safety Feature Actuation System (ESFAS) Instrumentation," by adding actions that allow time to restore one high steam flow channel per steam line to operable status before requiring a unit shutdown in the event two channels in one or more steam lines are discovered inoperable due to the trip setting not within the allowable value.

The U.S. Nuclear Regulatory Commission (NRC) staff is reviewing the submittal and has determined that additional information is needed to complete its review.

Request for Additional Information (RAI) No. 1:

Section 2.2, "Description of the Proposed Change," of Enclosure 1 of the license amendment request (LAR) states, in part:

The proposed amendment would add new TS Condition M, which states:

"One or more steam lines with two channels inoperable due to trip setting not within Allowable Value."

Two Notes to proposed Condition M are provided to limit the Condition use to only prior to completion of steam flow channel normalization and no more than a week after a unit startup following refueling.

Note 1 states:

"Only applicable prior to steam flow channel normalization."

Note 2 states:

"Only applicable within 7 days after reaching 100% RTP following refueling."

The description of the channel normalization process in the LAR states that steam flow, feed flow, and impulse pressure data sets are needed at five power ranges between the 15 percent

Enclosure

and 100 percent RTP, before the normalization data is complete enough to be used to provide the information necessary to properly revise the channel calibration procedures and calibrate the main steam line flow channels. It is not clear, however, what time limitations would be placed on the applicability of the proposed new Condition M if during a planned startup, continued ascension to 100 percent RTP were to be delayed at any value less than 100 percent RTP for an extended period, due to unforeseen equipment or operational circumstances occurring during startup. It is also not clear why the allowable Completion Time of 7 days (168 hours) was chosen, since it is described within the LAR that approximately 80 hours is needed to perform the normalization process after reaching 100 percent RTP, followed by performance of the individual channel calibrations using the revised normalization data, and 48 hours is allowed to correct potential inoperability concerns once channel calibrations are completed (totaling 128 hours).

- a. Please provide a discussion regarding the maximum possible duration that could occur following the initiation of power ascension after a refueling outage, prior to reaching 100 percent RTP, during which time it would not be confirmed as to whether all six main steam line flow monitoring channels are performing within the revised calibration conditions needed to meet the Technical Specification Allowable Value.
- b. Please justify why the proposed Condition M does not contain a maximum time cap for operations of the plant after initial startup and prior to reaching 100 percent RTP without confirmation that the channels are within their required operability conditions.
- c. Please provide a technical basis for the selection of the 7-day duration limit, when it appears that 5-1/2 days is sufficient.

RAI No. 2:

Section 3.5, "Acceptability of the Proposed Change," of Enclosure 1 of the LAR states, in part:

This proposed amendment is acceptable because the ESFAS Containment Pressure-High 2, Steam Line Pressure Low, and Manual Initiation Functions continue to provide steam line isolation protection during an SLB [Steam Line Break] accident, which also bounds minor secondary system pipe breaks and the accidental opening of a secondary system steam dump, relief, or safety valve.

The LAR does not appear to discuss why the proposed change is acceptable if one or more Steam Pressure Low instrument channel(s) become(s) inoperable. Please provide a discussion on why the proposed change to TS 3.3.2 is acceptable if one or more Steam Line Pressure Low instrument channels become(s) inoperable.

Additionally, the proposed Condition M appears to allow for all high steam flow channels to be out of service concurrently for 7 days. Please justify why an additional constraint is not needed within Condition M such that the Condition would be limited to only when at least two channels of the Steam Line Pressure Low function are operable.

RAI No. 3:

Section 3.5 of the LAR states, in part:

With both high steam flow channels inoperable in one or more steam lines due to the instrument channel trip setting not within the Allowable Value, the steam line isolation capability on high steam line flow may not occur within the time expected during a design basis event.

Given this statement, main steam isolation valve (MSIV) closure for either a stuck open safety/relief valve transient or a steam line break outside of containment would rely on either the low steam line pressure trip function or manual operator action. Given that these two trips would be expected to occur at different times than a high steam line flow trip (and much later in the case of manual operator action), please discuss how the Final Safety Analysis Report, Chapter 15 safety analyses acceptance criteria will be met if the high steam flow trip does not occur within the time expected, or does not occur at all, during a design basis event.

RAI No. 4:

The Technical Specifications Bases section for “Steam Line Isolation — Steam Line Pressure — Low” states, in part:

This signal may be manually blocked by the operator below the P-12 setpoint. Below P-12, an inside containment SLB will be terminated by automatic actuation via Containment Pressure — High 2. Stuck valve transients and outside containment SLBs will be terminated by the Steam Line High flow in Two Steam Lines coincident with Tavg Low — Low signal for Steam Line Isolation below P-12 when SI [safety injection] has been manually blocked.

Please discuss how stuck valve transients and outside containment steam line breaks below P-12 will be terminated if the steam line high flow instrumentation channels are inoperable, and the steam line pressure-low signal is manually blocked.

No Significant Hazards Consideration

A significant hazards consideration is present when the three standards in 10 CFR 50.92 are not met in a request for a license amendment. Standard one in 10 CFR 50.92 asks whether the amendment involves a significant increase in the probability or consequences of an accident previously evaluated and standard three asks if the proposed change involves a significant reduction in a margin of safety.

The Farley updated final safety analysis report (UFSAR), Section 15.4.2.1.1 states, in part, that the MSIVs trip after receiving a main steam line isolation signal on:

1. High steam flow in two out of three main steam lines (one of two per line) in coincidence with two out of three low-low RCS average temperature signals. (i.e., the high steam flow isolation signal)
2. Low steam line pressure signal in any two out of three steam lines.
3. Two out of three high-high (hi-2) containment pressure signals

In the submittal, the answers to 10 CFR 50.92 standards one and three discuss the available isolation signals (i.e., low steam line pressure, high-high containment pressure, and manual action). However, it is not apparent that certain aspects of the consequences of the loss of function of the high steam flow isolation signal are considered sufficiently for a determination of no significant hazards. Please provide an analysis of the coincidence and timing of the diverse main steam line isolation signals and their impact on the UFSAR Chapter 15 accident analyses assumptions and results, plant equipment response, and the impact on the ability to mitigate consequences and maintain adequate safety margin.

Please provide additional justification for the reliance on manual actions in lieu of automatic actions and discuss how a potential for loss-of-safety function does not result in a significant increase in the consequences of an accident or a significant reduction in a margin of safety.

C. A. Gayheart

SUBJECT: JOSEPH M. FARLEY NUCLEAR PLANT, UNITS 1 AND 2 - REQUEST FOR ADDITIONAL INFORMATION RE: TS 3.3.2, "ENGINEERED SAFETY FEATURE ACTUATION SYSTEM (ESFAS) INSTRUMENTATION" (EPID L-2017-LLA-0428) DATED MAY 1, 2018

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