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Joseph M. Farley Nuclear Plant – Units 1 and 2
License Amendment Request for Technical Specification 3.3.2
Regarding Steam Flow Isolation on High Steam Flow

Ladies and Gentlemen:

Pursuant to the provisions of Section 50.90 of Title 10 of the Code of Federal Regulations (10 CFR), Southern Nuclear Operating Company (SNC) hereby requests the proposed amendment to the Technical Specifications (TS), for Farley Nuclear Plant (FNP) Unit 1 Operating License NPF-2 and Unit 2 Operating License NPF-8. The proposed amendment would revise TS 3.3.2, "Engineered Safety Feature Actuation System (ESFAS) Instrumentation," by adding TS 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 Allowable Value. The proposed TS Actions would only be applicable prior to the completion of the steam flow channel normalization and limited to 7 days after reaching 100% RTP following refueling.

The proposed amendment is needed because normalization of the ESFAS High Steam Flow in Two Steam Lines Function channels cannot be performed until after steam flow scaling data has been obtained and could result in the channels not being within the proper instrument accuracy requiring the channels to be declared inoperable. Currently, there are no TS Actions provided for two high steam flow channels inoperable in one or more steam lines requiring application of LCO 3.0.3 and resulting in a unit shutdown. Previous events associated with normalization of the ESFAS High Steam Flow in Two Steam Lines Function channels have resulted in unnecessary unit shutdowns and Licensee Event Reports in accordance with 10 CFR 50.73.

SNC requests approval of the proposed license amendment by December 31, 2018. The proposed amendment will be implemented within 30 days of issuance.

Enclosure 1 contains a description of the proposed change, the supporting engineering analysis and the no significant hazards determination. Enclosure 2 contains the marked-up TS pages, and Enclosure 3 provides the clean-typed TS pages. Enclosure 4 contains the TS Bases pages marked to show the accompanying proposed changes for information only.

This letter contains no NRC commitments.

In accordance with 10 CFR 50.91, SNC is notifying the State of Alabama of this license amendment request by transmitting a copy of this letter and enclosures to the designated State Official.

If you have any questions, please contact Ken McElroy at 205.992.7369.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 21st day of December 2017.

Respectfully submitted,

J. J. Hutto
Regulatory Affairs Director

JJH/kgl/cg

Enclosure:
1. Basis for Proposed Changes
2. Technical Specification Marked-up Pages
3. Clean Typed Technical Specification Pages
4. Technical Specification Bases Marked-up Pages

cc: U. S. Nuclear Regulatory Commission
Regional Administrator, Region II
NRR Project Manager – Farley
Senior Resident Inspector – Farley

Alabama Department of Public Health
Alabama Office of Radiation Control

Joseph M. Farley Nuclear Plant – Units 1 and 2

License Amendment Request for Technical Specification 3.3.2
Regarding Steam Flow Isolation on High Steam Flow

Enclosure 1

Basis for Proposed Change

Enclosure 1 – Basis for Proposed Change

1. Summary Description

The proposed amendment to Farley Nuclear Plant (FNP) – Units 1 and 2 operating licenses would revise Technical Specification (TS) 3.3.2, "Engineered Safety Feature Actuation System (ESFAS) Instrumentation," by adding TS 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 proposed TS Actions would only be applicable prior to the completion of the steam flow channel normalization and limited to 7 days after reaching 100% RTP following refueling.

Steam flow transmitters associated with the ESFAS High Steam Flow in Two Steam Lines Function are calibrated each refueling outage utilizing predicted instrument scaling tables based on previous operational steam flow scaling data. Following the initial post-refueling power ascension, the steam flow transmitters are normalized, as needed, utilizing beginning-of-cycle (BOC) steam flow scaling data. The proposed amendment is needed because the channel normalization for the ESFAS High Steam Flow in Two Steam Lines Function channels cannot be performed until after steam flow scaling data has been obtained and could result in the channels not being within the proper instrument accuracy requiring the channels to be declared inoperable. Currently, there are no TS Actions provided for two high steam flow channels inoperable in one or more steam lines requiring application of LCO 3.0.3 and resulting in a unit shutdown. Previous events associated with normalization of the ESFAS High Steam Flow in Two Steam Lines Function channels have resulted in unnecessary unit shutdowns and Licensee Event Reports (LERs) in accordance with 10 CFR 50.73.

2. Detailed Description

2.1 Current Technical Specification Requirements

TS 3.3.2 requires the High Steam Flow in Two Steam Lines Coincident with Tavg – Low Low Function (Table 3.3.2-1, Function 4.e) to be Operable in Mode 1, and Modes 2 and 3 except when one main steam isolation valve (MSIV) is closed in each steam line. Table 3.3.2-1 provides the requirements for the high steam flow channels, which include the applicable Modes and other specified conditions, Required Channels, Conditions, Surveillance Requirements, Allowable Value, and Trip Setpoint. With one channel inoperable, TS 3.3.2, Required Action D.1 requires the channel to be placed in trip within 72 hours. With multiple channels inoperable, LCO 3.0.3 is applied since there are no TS Actions specified for two inoperable channels of the High Steam Flow in Two Steam Lines Coincident with Tavg – Low Low Function in one or more steam lines.

2.2 Description of the Proposed Change

The proposed amendment would add 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."

Required Action M.1 states:

> "Restore one channel per steam line to OPERABLE status;" with a Completion Time of 48 hours.

Optionally, Required Action M.2 requires placing the unit in a condition where the High Steam Flow in Two Steam Lines Coincident with Tavg – Low Low Function is no longer required. Required Actions M.2.1.1 and M.2.1.2, each with a Completion Time of 54 hours, state:

> "Be in MODE 2.
>
> OR
>
> Be in MODE 3."

Required Action M.2.2, states:

> "Isolate steam lines;" with a Completion Time of 60 hours.

Additionally, the proposed amendment would link TS Action M to the High Steam Flow in Two Steam Lines Function by adding a reference to Table 3.3.2-1, Function 4.e.

2.3 Reason for the Proposed Change

To ensure that the high steam flow channels associated with Function 4.e accurately track with steam line flow following a refueling outage, the measured steam flow scaling data is compared to the predicted steam flow scaling data derived from previous operating cycles. Following the comparison, high steam flow channel adjustment may be required to normalize the channels with the measured steam flow scaling data. Prior to channel normalization, the trip setting of the steam flow transmitters may not be calibrated to within the required as-found tolerance band based on the new measured steam flow scaling data. This could result in the channel trip setting being less conservative than the Allowable Value, thus rendering the associated channel inoperable.

In 2013, two LERs were transmitted to the NRC communicating events that led to the Completion Time associated with the applicable TS 3.3.2 Required Action not being met as a result of discovering an instrument channel of the ESFAS High Steam Flow in Two Steam Lines Function outside of Technical Specification Allowable Value requirements (Refs. 1 and 2).

Apparent causal analysis of the channel out-of-tolerance condition indicated that the condition could be due to steam flow transmitter issues such as equalizing valve leak-by or partial clogging of the flow transmitter sensing lines. Enhanced apparent causal analysis later determined that the direct cause of the channel out-of-tolerance condition was due to instrument drift in the steam flow transmitter possibly as a result of temperature changes between operating cycles.

Additionally, several more LERs were transmitted to the NRC in 2014 and 2017 related to instrument channel out-of-tolerance conditions associated with ESFAS High Steam Flow in Two Steam Lines Function (Refs. 3 and 4). As indicated in the LER transmitted in 2017, entry into TS LCO 3.0.3 was required at FNP Unit 1 due to multiple inoperable ESFAS High Steam Flow in Two Steam Lines Function channels inoperable resulting in a unit shutdown.

The proposed amendment is needed because, as noted, this condition can result in an unnecessary unit shutdown in accordance with TS LCO 3.0.3 if normalization is required on multiple channels.

3. Technical Evaluation

3.1 System Design and Operation

The ESFAS initiates necessary safety systems, based on the values of selected unit parameters, to protect against violating core design limits and the Reactor Coolant System (RCS) pressure boundary, and to limit the consequences of accidents and transients specified in Chapter 15 of the Final Safety Analysis Report (FSAR).

Steam line isolation is provided by three ESFAS instrumentation Functions:

- Steam Line Isolation — High Steam Flow in Two Steam Lines Coincident with Tavg — Low Low,
- Containment Pressure - High 2, and
- Steam Line Pressure Low.

These functions initiate closure of the MSIVs during a steam line break (SLB) accident or inadvertent opening of a steam generator (SG) relief or safety valve, to maintain at least one unfaulted SG as a heat sink for the reactor and to limit the mass and energy release to containment from a rupture inside containment.

High steam flow channels provide input to the ESFAS main steam line isolation logic circuitry. Main steam flow transmitters associated with each SG sense flow by measuring the differential pressure (Δp) across the flow restrictor that is an integral part of each SG. The flow restrictors create a nozzle effect, so that flow is measured by a venturi-type flow element. Two steam line flow transmitters in each steam line input into the ESFAS steam line flow channels. The steam line flow channels are combined in a one-out-of-two logic to sense high steam flow in one steam line. Steam line isolation on high steam flow in two steam lines results from a single steam line fault due to the increased steam flow in the remaining intact steam lines. The increased steam flow in the remaining intact lines actuates the required high steam flow MSIV isolation. The Steam Line Isolation — High Steam Flow in Two Steam Lines Function actuates on one-out-of-two logic in any two of three steam lines coincident with a Tavg — Low Low Function actuation on a one-out-of-one logic in any two of three RCS loops.

The Trip Setpoint for the Steam Line Isolation — High Steam Flow in Two Steam Lines Function is a linear function that varies with power level as determined by turbine impulse chamber pressure. The Δp function corresponds to 40% of full steam flow between 0% and 20% load to 110% of full steam flow at 100% load. The accuracy of

the steam flow instrumentation that provides input signals to ESFAS is provided in Westinghouse Topical Report WCAP-13751 (Ref. 5) with a maximum rated steam flow of 122.7%. The uncertainty calculations and scaling documents associated with the ESFAS High Steam Flow in Two Steam Lines Function are governed by the FNP Setpoint Control Program and the ESFAS steam line flow channels are designated as Group 1 instruments; the highest level of importance. The FNP Setpoint Control Program methodology is derived from American National Standard ANSI/ISA-S67.04, Part I (Ref. 6) and is in accordance with Westinghouse Topical Report WCAP-13751 (Ref. 5), which has been previously approved by the NRC.

3.2 Current Licensing Basis and Accident Analysis

The ESFAS initiates necessary safety systems to limit the consequences of American Nuclear Society (ANS) Condition III events (i.e., infrequent faults such as primary coolant spillage from a small rupture which exceeds normal charging system makeup and requires actuation of the safety injection system) and mitigate ANS Condition IV events (i.e., limiting faults which include the potential for significant release of radioactive material).

Each of the analyzed accidents can be detected by one or more ESFAS Functions. One of the ESFAS Functions is the primary actuation signal for that accident. An ESFAS Function may be the primary actuation signal for more than one type of accident. An ESFAS Function may also be a secondary, or backup, actuation signal for one or more other accidents.

As described in FSAR Subsection 7.3.2.9.2 "Steam Break Protection", the ESFAS instrumentation actuates the Emergency Core Cooling System (ECCS) in order to protect the core against an SLB. Following sensing high steam line differential pressure or low steam line pressure, an ESFAS actuation signal is generated. Analysis of steam break accidents, assuming a time delay for signal generation, shows that the ECCS is actuated for an SLB in time to limit or prevent damage in the core. In addition, a reactor trip is initiated from either an overpower trip or an ESFAS safety injection signal and core reactivity is further reduced by the highly borated water injected by the ECCS. Additional protection against the effects of an SLB accident is provided by feedwater isolation, which occurs upon actuation of the ECCS, and closure of the MSIVs. FSAR Subsection 15.4.2 "Major Secondary System Pipe Rupture", indicates that the steam line isolation is a primary assumption in a major secondary system pipe rupture accident which bounds minor secondary system pipe breaks and the accidental opening of a secondary system steam dump, relief, or safety valve as described in FSAR Subsections 15.3.2 "Minor Secondary System Pipe Breaks", and 15.2.13 "Analysis Effects and Consequences", respectively. However, regarding the three ESFAS steam line isolation functions, the FSAR does not explicitly define the primary and backup functions. FSAR Subsection 15.4.2, Paragraph 15.4.2.1.1 states, in part:

> "The following functions provide the necessary protection against a steam pipe rupture: ...
> D. Trip of the fast-acting main steam line isolation valves... or main steam line isolation bypass valves... after receipt of an ECCS or 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.
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 containment mass and energy analysis for an SLB inside containment, the ESFAS Containment Pressure - High 2 Function is credited as the steam line isolation instrument function as indicated in FSAR Table 6.2-11. This proposed amendment does not alter the ESFAS containment pressure instrumentation and the ESFAS Containment Pressure - High 2 Function continues to be capable of isolating the main steam lines in the event of an SLB accident inside containment.

As explained in TS Bases B 3.3.2 regarding the environmental conditions associated with the High Steam Flow in Two Steam Lines Function, the steam flow transmitters are not exposed to a severe environment because the High Steam Flow in Two Steam Lines Function protects against an SLB accident outside containment. An additional means of steam line isolation in the event of a SLB accident outside containment is provided by the ESFAS Steam Line Pressure Low Function. This proposed amendment does not alter the ESFAS low steam line pressure instrumentation channels and the ESFAS Steam Line Pressure Low Function continues to be capable of isolating the main steam lines in the event of an SLB accident outside containment.

Steam line isolation capability is also provided by Manual Initiation channels as defense in depth in the mitigation of an SLB accident. This proposed amendment also does not alter the Manual Initiation channels associated with the ESFAS Steam Line Isolation instrumentation and continues to be capable of providing main steam line isolation in the event of an SLB accident.

Since the ESFAS Containment Pressure - High 2, Steam Line Pressure Low, and Manual Initiation Functions continue to provide steam line isolation protection during an SLB accident, which also bounds minor secondary system pipe breaks and the accidental opening of a secondary system steam dump, relief, or safety valve, failure of the ESFAS High Steam Flow in Two Steam Lines Coincident with Tavg - Low Low Function to close the MSIVs due to channel inaccuracies associated with the steam flow instrumentation has been determined to be of low risk significance.

3.3 Channel Normalization Process

To verify and, if required, re-establish the accuracies of certain ESFAS signal processing equipment, BOC full power scaling data of steam flow, steam pressure, feed flows, and impulse pressure channels are collected at various power levels during the initial unit startup following each refueling. Channel calibration of the High Steam Flow in Two Steam Lines Function is dependent on accurate steam flow scaling data for calibration of the inputs to the high steam flow channels. Steam line flow is measured during the power ascension to obtain more accurate steam flow scaling data. Steam flow scaling data is collected at five reactor power ranges between 15% and 100% RTP. Steam flow testing at various power values produces a different set of steam flow variables. As power is escalated, these values are used to produce an increasingly accurate proportionality constant. Data collected at 100% RTP result in a higher instrument accuracy because 100% RTP is the normal operating level and because measurements

of flow and Δp are more accurate at higher flow rates. The data collected is used to determine the scaling of the turbine impulse pressure protection/control loop, which provides input to the ESFAS high steam flow trip bistables and allows the channel steam flow voltages to be calibrated to 40% steam line flow at 20% load pressure and 110% steam line flow at 100% load pressure. The gain of the instrument channel loop is adjusted, as necessary, so that the pressure values at 20% and 100% load correspond to the Δp values at 40% and 110% steam flow, respectively.

Operational experience has shown that it takes up to 80 hours after reaching 100% RTP and steady state steam flow to finalize data collection, analyze the data, input the full power scaling data into the steam flow calculations, revise the applicable channel calibration procedures, and implement the procedures to normalize affected channels of the ESFAS High Steam Flow in Two Steam Lines Function. A proposed TS Action to restore one of the two channels per steam line to Operable status within 48 hours and the following 24 hours (i.e., 72 hour Completion Time of current Required Action D.1) to restore the other channel to Operable status provides sufficient time to adjust multiple high steam flow instrument channels upon discovery of the steam flow calculation results exceeding the allowed acceptance criteria. Note 2 limits the use of Condition M to within 7 days after reaching 100% RTP following a unit startup from refueling. This provides adequate time during the unit startup to discover the inoperable channels and calibrate them to within the proper accuracy while limiting the time period a loss of function associated with the steam line isolation from the High Steam Flow in Two Steam Lines Coincident with Tavg - Low Low Function is allowed.

3.4 Risk Insights

The proposed period of time allowed for two high flow steam channels inoperable per steam line is deterministically based on the time required to accomplish the task; i.e. restore one of two channels per steam line to Operable status. As such, this LAR is not considered a risk informed submittal. The following risk insights are provided for information only.

The ESFAS and steam line isolation are included in the FNP probabilistic risk assessment internal events (including internal flooding) model and external events models. However, the models do not credit the ESFAS high steam flow instrument signal to actuate the steam line isolation. Therefore, the proposed amendment to allow 48 hours to restore one of two channels per steam line to Operable status will not result in any change to core damage frequency or large early release frequency.

3.5 Acceptability of the Proposed Change

The proposed amendment to add TS Actions to allow restoration of multiple channels of the ESFAS High Steam Flow in Two Steam Lines Function does not involve a physical change to the ESFAS, nor does it change the safety function of the ESFAS instrumentation or the equipment supported by the ESFAS instrumentation. The Allowable Value and Trip Setpoint for the Steam Line Isolation — High Steam Flow in Two Steam Lines Function specified in TS Table 3.3.2-1 (Function 4.e) are not changed by the proposed amendment and the high steam flow channels continue to be calibrated in accordance with SR 3.3.2.7 and existing plant procedures.

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. The proposed TS Actions would allow 48 hours to restore one high steam flow channel per steam line upon discovery of multiple channels not within the proper instrument accuracy after obtaining new scaling data during a unit startup from refueling or the unit must be placed in a condition where the High Steam Flow in Two Steam Lines Function is not required. Restoring the channels to Operable status includes ensuring the channel trip setting is adjusted to within the as-left tolerance band of the Trip Setpoint based on the normalized steam flow scaling data and the channel is not otherwise known to be incapable of performing its function.

Because the high steam flow instrument channel normalization only needs to be performed following a refueling outage, the proposed TS Actions are modified by two notes; limiting their use to; 1) only prior to completion of the instrument channel normalization, and 2) only within 7 days after reaching 100% RTP following a unit startup from refueling. The steam flow scaling data comparison and channel normalization uses current procedures, methods, and processes already established and currently in use and, therefore, does not constitute a new type of test.

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 accident, which also bounds minor secondary system pipe breaks and the accidental opening of a secondary system steam dump, relief, or safety valve. Therefore, the failure of the ESFAS High Steam Flow in Two Steam Lines Coincident with Tavg - Low Low Function to close the MSIVs during this time period due to channel inaccuracies associated with the steam flow instrumentation has been determined to be of low risk significance.

In addition, the complete loss of the MSIV closure function is currently allowed in MODE 1, and MODES 2 and 3 for 4 hours per TS 3.7.2 Required Actions B.1 and E.1, respectively. The proposed TS 3.3.2 Action only allows a loss of function to one of three ESFAS automatic closure signals to the MSIVs..

If both channels are discovered inoperable in one or more steam lines for reasons other than the trip setting not within the Allowable Value, or both channels in one or more steam lines are discovered inoperable for any reason following steam flow channel normalization or after 7 days of reaching 100% RTP from a unit startup after refueling, LCO 3.0.3 is entered, as applicable. Failure to restore the inoperable channels to Operable status within 48 hours requires the unit to be placed in either Mode 2 or 3 within the next 6 hours and the steam lines isolated within the following 6 hours. The Completion Time of 54 hours is reasonable, based on operating experience, to reach Mode 2 or Mode 3 from full power conditions in an orderly manner and without challenging plant systems. The Completion Time of 60 hours is reasonable to isolate all the steam lines with at least one MSIV closed in each steam line. In Mode 2 or 3 with at least one MSIV closed in each steam line (i.e., steam lines isolated), the High Steam Flow in Two Steam Lines Function (Function 4.e) is no longer required to be Operable. These Completion Times (i.e., 54 hours and 60 hours) are similar to other TS Actions requiring a unit shutdown to Mode 2 or 3 in 6 hours and Mode 4 in 12 hours. For example: TS 3.2.1 Required Action C.1 and TS 3.2.2 Required Action B.1 require being in Mode 2 within 6 hours; TS 3.3.1 Required Action U.2 requires being in Mode 2 within

6 hours from not meeting Required Action U.1 (7 hours total); TS 3.3.2, Required Actions D.2.1 and D.2.2, E.2.1 and E.2.2, F.2.1 and F.2.2, K.2.1 and K.2.2 require being in Mode 3 within 6 hours and Mode 4 within 12 hours from not meeting Required Actions D.1, E.1, F.1, and K.1, respectively; TS 3.7.2 Required Actions C.1, F.1, and F.2 require being in Mode 2 within 6 hours, Mode 3 within 6 hours, and Mode 4 within 12 hours, respectively.

To summarize, the proposed amendment to add TS Actions to allow time to restore the high steam flow channels to Operable status in the event two channels in one or more steam lines are discovered inoperable due to the trip setting not within the Allowable Value is acceptable because, during the proposed 48-hour period of time to restore at least one channel per steam line to Operable status, the ESFAS automatic steam line isolation continues to be provided from either a containment high pressure signal or a low steam pressure signal, which are not impacted by the proposed license change. Additionally, manual steam line isolation continues to be provided by the ESFAS manual channels, which are not impacted by the proposed license change. If at least one channel in each steam line cannot be restored to Operable status within the allowed time period, the unit must be place in a condition where the High Steam Flow in Two Steam Lines Function (Function 4.e) is no longer required to be Operable; i.e., either Mode 2 or 3 and the steam lines isolated.

4. Regulatory Evaluation

4.1 Applicable Regulatory Requirements/Criteria

The ESFAS design satisfies the criteria of 10 CFR 50.36, "Technical Specifications," paragraph (c)(2)(ii), Criterion 3. Steam line isolation from associated ESFAS functions is considered a primary success path to mitigate SLB accidents, including an inadvertent opening of an SG relief or safety valve. The ESFAS containment high pressure signal is assumed to close the MSIVs during an SLB inside containment. However, the FSAR does not explicitly define which of the three automatic steam line isolation signals is considered the primary actuation signal for an SLB outside containment. The proposed amendment does not delete requirements associated with the ESFAS instrumentation and LCO 3.3.2 continues to maintain requirements associated with structures, systems, and components that are part of the primary success path and actuate to mitigate the related design basis accidents and transients. The proposed addition of TS Actions that allow time to perform a channel normalization of the ESFAS high steam flow instrument channels following unit startup provides additional remedial actions to assure that the necessary instrumentation is restored to functional capability for safe operation of the facility pursuant paragraph (c)(2)(i) of 50.36.

The ESFAS design complies with the requirements of 10 CFR 50.55a(h)(2), Protection and safety systems, and meets the requirements of the applicable Institute of Electrical and Electronics Engineers standard pursuant to 10 CFR 50.55a(2). The proposed amendment does not alter the design of any protection or safety system, including the ESFAS. Therefore, the protection and safety system design continues to meet the requirements of 10 CFR 50.55a.

In addition, the following 10 CFR Part 50, Appendix A General Design Criteria (GDCs) are related to the ESFAS design:

GDC 10: Reactor design. The proposed amendment does not alter the design of the reactor core and associated coolant, control, and protection systems, including the ESFAS. The change adds TS Actions that allow time to normalize the high steam flow channels associated with the ESFAS steam line isolation before requiring a unit shutdown in the event multiple channels are discovered inoperable due to the trip settings not within the required accuracy.

GDC 13: Instrumentation and control. The proposed amendment does not alter the design of the instrumentation that is provided to monitor variables and systems over their anticipated ranges for normal operation for anticipated operational occurrences, and for accident conditions as appropriate to assure adequate safety. The change adds TS Actions that allow time to normalize the high steam flow channels associated with the ESFAS steam line isolation before requiring a unit shutdown in the event multiple channels are discovered inoperable due to the trip settings not within the required accuracy.

GDC 20: Protection system functions. The proposed amendment does not alter the design of reactivity control protection systems or instrumentation that sense accident conditions to initiate systems or components important to safety. The change adds TS Actions that allow time to normalize the high steam flow channels associated with the ESFAS steam line isolation before requiring a unit shutdown. This ensures the associated ESFAS instrumentation more accurately senses the associated parameter required to initiate a closure of the MSIVs; components important to safety.

GDC 21: Protection system reliability and testability. The proposed amendment does not alter the design of any protection system, including the ESFAS. Therefore, the protection system design continues to provide high functional reliability and inservice testability commensurate with the safety functions to be performed and continues to be sufficient to assure that (1) no single failure results in loss of the protection function and (2) removal from service of any component or channel does not result in loss of the required minimum redundancy. In the event multiple channels are discovered inoperable due to the trip settings not within the required accuracy, this change adds TS Actions that allow time to normalize the high steam flow channels to restore the minimum required redundancy before requiring a unit shutdown. The ESFAS design continues to permit periodic testing of its functioning when the reactor is in operation as previously licensed and approved by the NRC.

GDC 22: Protection system independence. The proposed amendment does not alter the design of any protection system, including the ESFAS. Therefore, the protection system design continues to assure that the effects of natural phenomena, and of normal operating, maintenance, testing, and postulated accident conditions on redundant channels do not result in loss of the protection function to the extent previously licensed and approved by the NRC.

GDC 23: Protection system failure modes. The proposed amendment does not alter the design of any protection system, including the ESFAS. Therefore, the protection system design continues to fail into a safe state or into a state demonstrated to be acceptable as previously licensed and approved by the NRC.

GDC 24: Separation of protection and control systems. The proposed amendment does not alter the design of any protection system, including the ESFAS. Therefore, the

protection system design continues to be separated from control systems as previously licensed and approved by the NRC.

GDC 27: Combined reactivity control systems capability. The proposed amendment does not alter the design of the reactivity control systems. Therefore, the reactivity control systems continue to have combined capability, in conjunction with poison addition by the ECCS, of reliably controlling reactivity changes to assure that under postulated accident conditions and with appropriate margin for stuck rods the capability to cool the core is maintained.

GDC 28: Reactivity limits. The proposed amendment does not alter the design of the reactivity control systems. Therefore, the reactivity control systems will continue to limit the potential amount and rate of reactivity increase to assure that the effects of postulated reactivity accidents will not adversely affect the reactor coolant pressure boundary or impair the capability to cool the core.

GDC 29: Protection against anticipated operational occurrences. The proposed amendment does not alter the design of any protection or reactivity control system, including ESFAS. The change adds TS Actions that allow time to normalize the high steam flow channels associated with the ESFAS steam line isolation before requiring a unit shutdown in the event multiple channels are discovered inoperable due to the trip setting not within the required accuracy. This ensures the associated ESFAS instrumentation more accurately senses the associated parameter required to initiate a closure of the MSIVs during secondary pipe ruptures or an inadvertent opening of an SG relief or safety valve. The ESFAS design will continue to assure an extremely high probability of accomplishing its safety function in the event of anticipated operational occurrences.

4.2 No Significant Hazards Consideration Analysis

Pursuant to 10 CFR 50.90, Southern Nuclear Operating Company (SNC) hereby requests an amendment to Farley Nuclear Plant (FNP) Unit 1 Operating License NPF-2 and Unit 2 Operating License NPF-8. The proposed amendment revises Technical Specification 3.3.2, "Engineered Safety Feature Actuation System (ESFAS) Instrumentation," by adding actions that allow time to normalize the high steam flow channels associated with the ESFAS steam line isolation before requiring a unit shutdown in the event multiple channels are discovered inoperable due to the trip settings not within the required accuracy. The proposed actions would only be applicable prior to the completion of the steam flow channel normalization and limited to 7 days after reaching 100% rated thermal power following refueling.

SNC has evaluated whether or not a significant hazards consideration is involved with the proposed amendment by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment," as discussed below:

1. Does the proposed amendment involve a significant increase in the probability or consequences of an accident previously evaluated?

   Response: No

   The proposed amendment does not affect accident initiators or precursors nor adversely alter the design assumptions, conditions, and configuration of the facility. The proposed amendment does not alter any plant equipment or operating practices with respect to such initiators or precursors in a manner that the probability of an accident is increased.

   The proposed amendment adds actions that allow time to normalize the high steam flow channels associated with the ESFAS steam line isolation before requiring a unit shutdown in the event multiple channels are discovered inoperable due to the trip setting not within the required accuracy. The proposed amendment does not involve a physical change to the ESFAS, nor does it change the safety function of the ESFAS instrumentation or the equipment supported by the ESFAS instrumentation. Automatic steam line isolation on high steam flow, containment high pressure, or low steam pressure, is assumed in the mitigation of a major secondary system pipe rupture accident which bounds minor secondary system pipe breaks and the accidental opening of a secondary system steam dump, relief, or safety valve. Manual steam line isolation capability is also provided as defense in depth in the mitigation of a major secondary system pipe rupture accident. If a design basis event involving a secondary system rupture occurs during the period of time steam flow scaling data is being obtained and prior to channel normalization, the high steam flow signal continues to be capable of reasonably providing steam line isolation protection due to channel testing being satisfactorily completed to the extent possible prior to unit startup. During the time proposed to normalize sufficient high steam flow channels to restore the steam line isolation capability, automatic ESFAS steam line isolation continues to be provided from either a containment high pressure signal or a low steam pressure signal, which are not impacted by the proposed license change. Additionally, manual steam line isolation continues to be provided by the ESFAS manual channels, which are not impacted by the proposed license change. As a result, the proposed amendment does not significantly alter assumptions relative to the mitigation of an accident or transient event and the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the proposed change create the possibility of a new or different accident from any accident previously evaluated?

   Response: No

   With respect to a new or different kind of accident, there are no proposed design changes to the ESFAS; nor are there any changes in the method by which safety related plant structures, systems, and components perform their specified safety

functions. The proposed amendment will not affect the normal method of plant operation or revise any operating parameters. No new accident scenarios, transient precursor, failure mechanisms, or limiting single failures will be introduced as a result of this proposed change and the failure modes and effects analyses of SSCs important to safety are not altered as a result of this proposed change.

The proposed amendment does not alter the design or performance of the ESFAS, rather, it adds actions that allow time to normalize the high steam flow channels associated with the ESFAS steam line isolation before requiring a unit shutdown in the event multiple channels are discovered inoperable due to the trip settings not within the required accuracy. The process to normalize the high steam flow channels uses current procedures, methods, and processes already established and currently in use and, therefore, does not constitute a new type of test.

No changes are being proposed to the procedures that operate the plant equipment and the change does not have a detrimental impact on the manner in which plant equipment operates or responds to an actuation signal.

Therefore, the proposed change will not create the possibility of a new or different accident previously evaluated.

3. Does the proposed change involve a significant reduction in a margin of safety?

   Response: No.

   The margin of safety is related to the ability of the fission product barriers to perform their design functions during and following an accident. These barriers include the fuel cladding, the reactor coolant system, and the containment. The performance of these fission product barriers will not be affected by the proposed change.

   The proposed amendment adds actions that allow time to normalize the high steam flow channels associated with the ESFAS steam line isolation before requiring a unit shutdown in the event multiple channels are discovered inoperable due to the trip settings not within the required accuracy. During the proposed period to normalize the high steam flow instrument channels, the ESFAS high steam flow signal continues to be capable of reasonably providing steam line isolation protection due to channel testing being satisfactorily completed to the extent possible prior to unit startup. If a design basis event involving a secondary system rupture occurs during the time proposed to normalize sufficient high steam flow channels to restore the steam line isolation capability, automatic ESFAS steam line isolation continues to be provided from either a containment high pressure signal or a low steam pressure signal, which are not impacted by the proposed license change. Additionally, manual steam line isolation continues to be provided by the ESFAS manual channels, which are not impacted by the proposed license change. For these reasons, the ESFAS will continue to be capable of performing its safety functions under normal and accident conditions.

   Therefore, the margin to the onsite and offsite radiological dose limits are not impacted by the proposed amendment and, thus the proposed change does not involve a significant reduction in a margin of safety.

Based on the above, SNC concludes that the proposed amendment does not involve a significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of "no significant hazards consideration" is justified.

4.3 Conclusions

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

5. Environmental Consideration

SNC has determined that the proposed amendment does not change a surveillance requirement. The proposed amendment adds actions that allow time to perform a channel normalization of the steam flow instruments associated with the ESFAS steam line isolation following unit startup in the event multiple channels are discovered inoperable due to the trip setting not within the required accuracy. The proposed actions would only be applicable prior to the completion of the steam flow channel normalization and limited to 7 days after reaching 100% rated thermal power following refueling. The proposed amendment does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluent that may be released off site, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need to be prepared in connection with the proposed amendment.

6. References

1. Letter from T.A. Lynch (SNC) to Document Control Desk (NRC), "Joseph M. Farley Nuclear Plant – Unit 2 Licensee Event Report 2013-001-01 2C Steam Generator Flow Transmitter Inoperable Longer Than Allowed By Technical Specifications," dated September 13, 2013. (NRC Agencywide Documents Access and Management System (ADAMS) Accession No. ML13259A030)

2. Letter from C.A. Gayheart (SNC) to Document Control Desk (NRC), "Joseph M. Farley Nuclear Plant – Unit 1 Licensee Event Report 2013-003-01 1C Steam Generator Flow Transmitter Inoperable Longer Than Allowed By Technical Specifications," dated February 21, 2014. (NRC ADAMS Accession No. ML14052A438)

3. Letter from C.A. Gayheart (SNC) to Document Control Desk (NRC), "Joseph M. Farley Nuclear Plant – Units 1 and 2 Licensee Event Report 2014-003-00 Scaling Errors Result in Inoperable Steam Flow Channels for Durations Longer Than Allowed by Technical Specifications," dated June 2, 2014. (NRC ADAMS Accession No. ML14153A684)

4. Letter from C.R. Pierce (SNC) to Document Control Desk (NRC), "Joseph M. Farley Nuclear Plant – Unit 1 Licensee Event Report 2016-007-00 Plant Shutdown Required by Technical Specifications due to Inoperable Steam Flow Transmitters," dated June 13, 2017. (NRC ADAMS Accession No. ML17013A394)

5. Westinghouse Topical Report WCAP 13751, "Westinghouse Setpoint Methodology for Protection Systems Farley Nuclear Plant Units 1 and 2 (Model 54F Steam Generators and 2785 MWt NSSS Power)," Rev. 1, October, 2002. (Proprietary)

6. American National Standard ANSI/ISA-S67.04, Part I, "Setpoints for Nuclear Safety-Related Instrumentation," September 1994.

Joseph M. Farley Nuclear Plant – Units 1 & 2

License Amendment Request for Technical Specification 3.3.2
Regarding Steam Flow Isolation on High Steam Flow

Enclosure 2

Technical Specification Marked-up Pages

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
L. (continued)	L.2	----------NOTE---------- One train may be bypassed for up to 4 hours for Surveillance testing, provided the other train is OPERABLE. ---------- Restore train to OPERABLE status.	24 hours
	OR		
	L.3.1	Be in MODE 3.	30 hours
	AND		
	L.3.2	Be in MODE 5	60 hours

Insert ACTION M

SURVEILLANCE REQUIREMENTS

----------NOTE----------
Refer to Table 3.3.2-1 to determine which SRs apply for each ESFAS Function.

SURVEILLANCE		FREQUENCY
SR 3.3.2.1	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.2.2	Perform ACTUATION LOGIC TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.2.3	Perform MASTER RELAY TEST.	In accordance with the Surveillance Frequency Control Program

Table 3.3.2-1 (page 3 of 4)
Engineered Safety Feature Actuation System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE	TRIP SETPOINT
4. Steam Line Isolation						
a. Manual Initiation	1,2[d],3[d]	1 per steam line	F	SR 3.3.2.6	NA	NA
b. Automatic Actuation Logic and Actuation Relays	1,2[d],3[d]	2 trains	G	SR 3.3.2.2 SR 3.3.2.3 SR 3.3.2.8	NA	NA
c. Containment Pressure - High 2	1,2[d], 3[d]	3	D	SR 3.3.2.1 SR 3.3.2.4 SR 3.3.2.7 SR 3.3.2.9	≤ 17.5 psig	≤ 16.2 psig
d. Steam Line Pressure Low	1,2[d],3[b][d]	1 per steam line	D, M	SR 3.3.2.1 SR 3.3.2.4 SR 3.3.2.7 SR 3.3.2.9	≥ 575[c] psig	≥ 585[c] psig
e. High Steam Flow in Two Steam Lines	1,2[d],3[d]	2 per steam line	D	SR 3.3.2.1 SR 3.3.2.4 SR 3.3.2.7	(e)	(f)
Coincident with T_{avg} - Low Low	1,2[d],3[d]	1 per loop	D	SR 3.3.2.1 SR 3.3.2.4 SR 3.3.2.7	≥ 542.6°F	≥ 543°F

(b) Above the P-12 (T_{avg} - Low Low) interlock.
(c) Time constants used in the lead/lag controller are $t_1 \geq 50$ seconds and $t_2 \leq 5$ seconds.
(d) Except when one MSIV is closed in each steam line.
(e) Less than or equal to a function defined as ΔP corresponding to 40.3% full steam flow below 20% load, ΔP increasing linearly from 40.3% full steam flow at 20% load to 110.3% full steam flow at 100% load.
(f) Less than or equal to a function defined as ΔP corresponding to 40% full steam flow between 0% and 20% load and then a ΔP increasing linearly from 40% steam flow at 20% load to 110% full steam flow at 100% load.

Insert ACTION M

M. ————NOTES———— 1. Only applicable prior to steam flow channel normalization. 2. Only applicable within 7 days after reaching 100% RTP following refueling. ———————————— One or more steam lines with two channels inoperable due to trip setting not within Allowable Value.	M.1	Restore one channel per steam line to OPERABLE status.	48 hours
	OR		
	M.2.1.1	Be in MODE 2.	54 hours
		OR	
	M.2.1.2	Be in MODE 3.	54 hours
	AND		
	M.2.2	Isolate steam lines.	60 hours

Joseph M. Farley Nuclear Plant – Units 1 & 2

License Amendment Request for Technical Specification 3.3.2
Regarding Steam Flow Isolation on High Steam Flow

Enclosure 3

Clean Typed Technical Specification Pages

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
L. (continued)	L.2	----------NOTE---------- One train may be bypassed for up to 4 hours for Surveillance testing, provided the other train is OPERABLE. ---------- Restore train to OPERABLE status.	24 hours
	OR		
	L.3.1	Be in MODE 3.	30 hours
	AND		
	L.3.2	Be in MODE 5	60 hours
M. ----------NOTES---------- 1. Only applicable prior to steam flow channel normalization. 2. Only applicable within 7 days after reaching 100% RTP following refueling. ---------- One or more steam lines with two channels inoperable due to trip setting not within Allowable Value.	M.1	Restore one channel per steam line to OPERABLE status.	48 hours
	OR		
	M.2.1.1	Be in MODE 2.	54 hours
		OR	
	M.2.1.2	Be in MODE 3.	54 hours
	AND		
	M.2.2	Isolate steam lines.	60 hours

SURVEILLANCE REQUIREMENTS

----------NOTE----------
Refer to Table 3.3.2-1 to determine which SRs apply for each ESFAS Function.

	SURVEILLANCE	FREQUENCY
SR 3.3.2.1	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.2.2	Perform ACTUATION LOGIC TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.2.3	Perform MASTER RELAY TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.2.4	Perform COT.	In accordance with the Surveillance Frequency Control Program
SR 3.3.2.5	Perform TADOT.	In accordance with the Surveillance Frequency Control Program
SR 3.3.2.6	----------NOTE---------- Verification of setpoint not required. --- Perform TADOT.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.2.7	----------NOTE---------- This Surveillance shall include verification that the time constants are adjusted to the prescribed values. ---------- Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.2.8	Perform SLAVE RELAY TEST	In accordance with the Surveillance Frequency Control Program
SR 3.3.2.9	----------NOTE---------- Not required to be performed for the turbine driven AFW pump until 24 hours after SG pressure is ≥ 1005 psig. ---------- Verify ESFAS RESPONSE TIMES are within limit.	In accordance with the Surveillance Frequency Control Program
SR 3.3.2.10	----------NOTE---------- Verification of setpoint not required. ---------- Perform TADOT.	----------NOTE---------- Only required when not performed within previous 92 days. ---------- Prior to reactor startup

Table 3.3.2-1 (page 3 of 4)
Engineered Safety Feature Actuation System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE	NOMINAL TRIP SETPOINT
4. Steam Line Isolation						
a. Manual Initiation	1,2[d],3[d]	1 per steam line	F	SR 3.3.2.6	NA	NA
b. Automatic Actuation Logic and Actuation Relays	1,2[d],3[d]	2 trains	G	SR 3.3.2.2 SR 3.3.2.3 SR 3.3.2.8	NA	NA
c. Containment Pressure - High 2	1,2[d], 3[d]	3	D	SR 3.3.2.1 SR 3.3.2.4 SR 3.3.2.7 SR 3.3.2.9	≤ 17.5 psig	16.2 psig
d. Steam Line Pressure Low	1,2[d],3[b][d]	1 per steam line	D	SR 3.3.2.1 SR 3.3.2.4 SR 3.3.2.7 SR 3.3.2.9	≥ 575[c] psig	585[c] psig
e. High Steam Flow in Two Steam Lines	1,2[d],3[d]	2 per steam line	D, M	SR 3.3.2.1 SR 3.3.2.4 SR 3.3.2.7	(e)	(f)
Coincident with T_{avg} - Low Low	1,2[d],3[d]	1 per loop	D	SR 3.3.2.1 SR 3.3.2.4 SR 3.3.2.7	≥ 542.6°F	543°F

(b) Above the P-12 (T_{avg} - Low Low) interlock.
(c) Time constants used in the lead/lag controller are $t_1 \geq 50$ seconds and $t_2 \leq 5$ seconds.
(d) Except when one MSIV is closed in each steam line.
(e) Less than or equal to a function defined as ΔP corresponding to 40.3% full steam flow below 20% load, ΔP increasing linearly from 40.3% full steam flow at 20% load to 110.3% full steam flow at 100% load.
(f) Less than or equal to a function defined as ΔP corresponding to 40% full steam flow between 0% and 20% load and then a ΔP increasing linearly from 40% steam flow at 20% load to 110% full steam flow at 100% load.

Joseph M. Farley Nuclear Plant – Units 1 & 2

License Amendment Request for Technical Specification 3.3.2
Regarding Steam Flow Isolation on High Steam Flow

Enclosure 4

Technical Specification Bases Marked-up Pages
(Information only)

BASES

ACTIONS

L.1, L.2, L.3.1, and L.3.2 (continued)

MODE 5 within the following 30 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems. Placing the unit in MODE 5 removes all requirements for OPERABILITY of these interlocks and the automatic actuation logic, SI actuation relays and interlock actuation relays.

This Condition is intended to address an inoperability of the actuation logic or relays associated with a given train which affects the integrated ESFAS response to a pressurizer low pressure SI (P-11), steam line low pressure SI/MSLI (P-12), or any auto SI (P-4) actuation signal. This Condition is applicable whenever more than one ESF system is affected by the inoperable train of logic or relays. However, if one or more inoperable actuation relay(s) in a train affect only a single ESF system, then the ACTIONS Condition of the LCO applicable to the affected ESF component or system should be entered and this Condition is not applicable.

This action addresses the train orientation of the SSPS and the master and slave relays. If one train is inoperable, 24 hours are allowed to restore the train to OPERABLE status. The specified Completion Time is reasonable considering that there is another train OPERABLE, and the low probability of an event occurring during this interval. If the train cannot be restored to OPERABLE status, the unit must be placed in a MODE in which the LCO does not apply. This is done by placing the unit in at least MODE 3 within an additional 6 hours (30 hours total time) and in MODE 5 within an additional 30 hours (60 hours total time). The Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

The Required Actions are modified by a Note that allows one train to be bypassed for up to 4 hours for surveillance testing, provided the other train is OPERABLE. This allowance is based on the reliability analysis assumption that 4 hours is the average time required to perform channel surveillance (Ref. 10).

Insert B ACTION M

Insert B ACTION M

M.1, M.2.1.1, M.2.1.2, M.2.2

This Condition applies to the High Steam Flow in Two Steam Lines Function (Function 4.e).

With both 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. Therefore, one channel per steam line must be restored to OPERABLE status within 48 hours or the plant must be placed in a condition where the High Steam Flow in Two Steam Lines Function is not required.

To ensure that the high steam flow channels associated with Function 4.e accurately track with steam line flow following a refueling outage, the measured steam flow scaling data is compared to the predicted steam flow scaling data derived from previous operating cycles. Following the comparison, high steam flow channel adjustment may be required to normalize the channels with the measured steam flow scaling data. Prior to channel normalization, the trip setting of the steam flow transmitters may not be calibrated to within the required as-found tolerance band based on the new measured steam flow scaling data. This could result in the channel trip setting being less conservative than the Allowable Value, thus rendering the associated channel inoperable. This Condition provides time to complete the channel normalization of multiple channels to restore at least one channel in each steam line to OPERABLE status. Restoring the channels to OPERABLE status includes ensuring the channel trip setting is adjusted to within the as-left tolerance band of the Trip Setpoint based on the normalized steam flow scaling data and the channel is not otherwise known to be incapable of performing its function.

The Completion Time to restore one channel per steam line to OPERABLE status is considered reasonable because the ESFAS steam line isolation continues to be provided from the Containment Pressure - High 2 and the Steam Line Pressure Low Functions.

Steam flow transmitter normalization is performed following a refueling outage after reaching 100% RTP and establishing steady state steam line flow. Therefore, this Condition is modified by two Notes. Note 1 indicates the Condition is only applicable during the period of time prior to completing normalization of the steam flow channels. Note 2 limits the applicability of the Condition to 7 days after reaching 100% RTP following a plant startup from refueling. If both channels are discovered inoperable in one or more steam lines for reasons other than the trip setting not within the Allowable Value, or both channels in one or more steam lines are discovered inoperable for any reason following steam flow channel normalization or after 7 days of reaching 100% RTP from a plant startup after refueling, LCO 3.0.3 is entered, as applicable.

Failure to restore the inoperable channels to OPERABLE status within 48 hours requires the unit to be placed in either MODE 2 or 3 within the next 6 hours and the steam lines isolated within the following 6 hours. The Completion Time of 54 hours is reasonable, based on operating experience, to reach MODE 2 or MODE 3 from full power conditions in an orderly manner and without challenging unit systems. The Completion Time of 60 hours is reasonable to isolate all the steam lines with at least one MSIV closed in each steam line. In MODE 2 or 3 with at least one MSIV closed in each steam line (i.e., steam lines isolated), the High Steam Flow in Two Steam Lines Function (Function 4.e) is no longer required to be OPERABLE.