

NRR-PMDAPEm Resource

From: Williams, Shawn
Sent: Thursday, March 03, 2016 11:31 AM
To: THOMPSON, BRUCE L
Cc: GARZA, JOHN M (JGARZA@scana.com)
Subject: Request for Additional Information related to the March 1, 2016, Exigent Amendment Request
Attachments: March 1, 2016 LAR RAIs.docx

Mr. Thompson,

By application dated March 1, 2016 (Agencywide Documents and Management System (ADAMS) Accession No. ML16062A368), South Carolina Electric & Gas Company (SCE&G, the licensee) requested an amendment to Operating license number NPF-12. The amendment would revise Technical Specification (TS) related to the Plant Systems - Emergency Feedwater System (TS 3.7.1.2).

The NRC staff has determined that the attached request for additional information (RAI) is required to complete its review.

Please respond by March 4th to support your requested amendment approval date of March 10, 2016.

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"GARZA, JOHN M (JGARZA@scana.com)" <JGARZA@scana.com>
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REQUEST FOR ADDITIONAL INFORMATION

EXIGENT AMENDMENT REQUEST

VIRGIL C. SUMMER NUCLEAR STATION, UNIT NO. 1

SOUTH CAROLINA ELECTRIC & GAS COMPANY

DOCKET NUMBER 50-395

By application dated March 1, 2016 (Agencywide Documents and Management System (ADAMS) Accession No. ML16062A368), South Carolina Electric & Gas Company (SCE&G, the licensee) requested an amendment to Operating license number NPF-12. The amendment would revise Technical Specification (TS) related to the Plant Systems - Emergency Feedwater System (TS 3.7.1.2).

The NRC staff has determined that the following request for additional information (RAI) is required to complete its review.

RAI-SBPB-01

Introduction:

For the Emergency Feedwater System (EFW), the station proposes to modify limiting conditions for operation 3.7.1.2 action statement b which currently requires: for two inoperable emergency feedwater pumps, be in at least HOT STANDBY within six hours and be in HOT SHUTDOWN within the following six hours. The station proposes that the action statement be amended to be in at least HOT STANDBY within 24 hours to allow for timely completion of any required maintenance and surveillance retest.

From Section 2.2, "Bases for Exigent Change," of the exigent submittal, it describes that Surveillance Test Procedure (STP)-120.006, "Emergency Feedwater Valves Backup Air Supply Test," was not performed during the fall 2015 outage for the motor driven EFW pump flow control valves. The end date for this test is March 17, 2016, based on an 18 month surveillance interval plus 25% per TS 4.0.2

Also, for the planning process for the Emergency Feedwater System flow control valves accumulator testing in Modes 1, 2, and 3, station personnel began to apply additional planning considerations and focus to the testing including designating the test as an Infrequently Performed Test or Evolution (IPTE) and developing contingencies for repairs should valve repairs be required.

Issue:

The LAR is not clear in stating that when performing 'at power' that Surveillance Test Procedure (STP)-120.006 will still be considered an IPTE.

RAI:

- a. Describe if the IPTE is still be considered for the performance of STP-120.006 and describe the nuclear safety benefit for this activity.

- b. Based on the response to item a, describe the “other controls in place’ that benefit nuclear plant safety if an IPTE is not considered.

RAI-SBPB-02

Introduction:

For the Emergency Feedwater System, the station proposes to modify limiting conditions for operation 3.7.1.2 action statement b which currently requires: for two inoperable emergency feedwater pumps, be in at least HOT STANDBY within six hours and be in HOT SHUTDOWN within the following six hours. The station proposes that the action statement be amended to be in at least HOT STANDBY within 24 hours to allow for timely completion of any required maintenance and surveillance retest.

From Section 2.1, “Possible Repairs Timeline,” of the exigent submittal, it describes component failures that could be required following the surveillance. The estimated repair times are based on repairing each item identified below and include tagging out the appropriate isolation devices. The time reflected also accounts for retesting of the EFW control valves to ensure the capability to hold the valve closed for three hours as required by TS 4.7.1.2.c.2.

- Air accumulator check valve replacement – 18 hours.
- Air pressure regulator rebuild and calibration – 10 hours.
- Air actuator diaphragm casing bolts torque adjustment – 8 hours.
- Air actuator diaphragm replacement – 12 hours.
- Air solenoid valve replacement – 14 hours.
- Air relief valve replacement and setup – 8 hours.

Issue:

During power operations, if during the performance of the Surveillance Test Procedure (STP)-120.006, “Emergency Feedwater Valves Backup Air Supply Test,” and given the estimated times for repairs and testing, does 24 hours give time margin for success if multiple repairs are necessary.

RAI:

- a. Describe if the 24 hour time allowance to placing the plant into hot standby has adequate margin to allow a controlled reactor shutdown without initialing a reactor trip. Include the amount of time acceptable to perform a controlled shutdown.
- b. Describe the time line that supports the 24 hour time allowance, given worst case components noted above (18 hours for the accumulator check valve).

RAI-SBPB-03

Introduction:

For the Emergency Feedwater System, the station proposes to modify limiting conditions for operation 3.7.1.2 action statement b which currently requires: for two inoperable emergency feedwater pumps, be in at least HOT STANDBY within six hours and be in HOT SHUTDOWN within the following six hours. The station proposes that the action statement be amended to be

in at least HOT STANDBY within 24 hours to allow for timely completion of any required maintenance and surveillance retest.

From 3.4, "PRA Insights," of the exigent submittal, defense-in-depth for the heat sink function is provided by the redundant EFW flow control valves associated with the steam driven emergency feedwater pump and by use of the charging/safety injection pumps in the feed and bleed mode. Defense-in-depth for the function to isolate a faulted or ruptured steam generator is provided by a manually operated stop check valve (XVK01019A/B/C-EF) in series with each of the flow control valves. Defense-in-depth for a postulated loss of EFW flow associated with a steam line break outside containment (SLBO) in the supply lines for the turbine driven emergency feedwater pump is by the use of charging/safety injection pumps in the feed and bleed mode.

Issue:

During power operations, Surveillance Test Procedure (STP)-120.006, "Emergency Feedwater Valves Backup Air Supply Test," will test the three EFW flow control valves. Details are missing on how this test is conducted, that is, all three valves at the same time under the 3 hour hold time, or each of the three valves, one at a time for the three hour hold time during. Closure of all three flow control valves may place the plant in a high risk than testing the flow control valves one at a time and then declaring that flow path operable once that one valve passes the surveillance. The test could be performed one valve at a time which provides defense-in-depth open flow paths to the other two steam generators.

RAI:

- a. Provide specific details of how the flow control valves are tested.
- b. Describe if each of the three flow controls valves share any air accumulators.
- c. Describe the risk and or benefit for testing all three flow control valves (3 hours hold time) at power verses testing each of the three flow control valves individually.

RAI-SBPB-04

Introduction:

For the Emergency Feedwater System (EFW), the station proposes to modify limiting conditions for operation 3.7.1.2 action statement b which currently requires: for two inoperable emergency feedwater pumps, be in at least HOT STANDBY within six hours and be in HOT SHUTDOWN within the following six hours. The station proposes that the action statement be amended to be in at least HOT STANDBY within 24 hours to allow for timely completion of any required maintenance and surveillance retest.

From 3.4, "PRA Insights," of the exigent submittal, the following compensatory measures will be taken: Both emergency diesel generators will be verified available (not in Removal and Restoration Log), the turbine driven EFW pump will be placarded and its room locked, a dedicated operator will be stationed locally to manually operate the flow control valves as required, the weather forecast will be reviewed for sever conditions (hurricane or tornado), and no other planned maintenance or testing will be in progress prior to entering the action statement. Defense-in-depth for the heat sink function is provided by the redundant EF flow control valves associated with the steam driven emergency feedwater pump and by use of the charging/safety injection pumps in the feed and bleed mode. Defense-in-depth for the function

to isolate a faulted or ruptured steam generator is provided by a manually operated stop check valve (XVK01019A/B/C-EF) in series with each of the flow control valves. Defense-in-depth for a postulated loss of EF flow associated with a steam line break outside containment (SLBO) in the supply lines for the TDEFP is by the use of charging/safety injection pumps in the feed and bleed mode.

Issue:

Details are missing to the extent of special operator training and 'protected equipment' strategies during EFW flow control testing.

RAI:

Describe the defense-in-depth and protection for other safety trains and supporting structures, systems, and components (SSCs) appropriate to maintain the safety function of EFW during testing. Include discussion for your consideration of the following:

- a. Describe if during the performance of the three flow control valve test (all at the same time) if one dedicated operator is required or three dedicated operators are required.
- b. Describe the actions for 'a' above and if these actions will be added to the surveillance test.
- c. Describe if any electrical buses will be operable (verses available) and protected in support of this test including the turbine driven EFW pump such as direct current buses for valves and governor controls.
- d. Describe all other defense-in-depth, special operator training, and protected equipment strategies that are necessary for the performance of Surveillance Test Procedure (STP)-120.006, such as feed and bleed SSCs and just-in time operator training.