PSEG Nuclear LLC
P.O. Box 236, Hancocks Bridge, New Jersey 08038-0236

PSEG
Nuclear LLC

FEB 08 2018

10 CFR 50.90

LR-N18-0022
LAR S18-01

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Salem Generating Station, Units 1 and 2
Renewed Facility Operating License Nos. DPR-70 and DPR-75
NRC Docket Nos. 50-272 and 50-311

Subject: **License Amendment Request to Revise Technical Specification Actions for Rod Position Indicators**

In accordance with the provisions of 10 CFR 50.90, PSEG Nuclear LLC (PSEG) is submitting a request for an amendment to the Technical Specifications (TS) for Salem Generating Station (Salem) Units 1 and 2.

The proposed change will revise Salem Unit 1 and Unit 2 Technical Specification (TS) 3.1.3.2.1, "Position Indication Systems – Operating," to modify the TS action for more than one inoperable analog rod position indicator from 1 hour to 24 hours consistent with Technical Specification Task Force (TSTF) traveler TSTF-234-A Revision 1, "Add Action for More Than One [D]RPI Inoperable," and to align the TS actions with NUREG-1431, Revision 4, "Standard Technical Specifications - Westinghouse Plants."

The Enclosure provides a description and assessment of the proposed changes. Attachment 1 provides the existing TS pages marked up to show the proposed changes. No TS Bases changes are required.

PSEG requests approval of this license amendment request (LAR) by April 30, 2018. The expedited schedule for approval is being requested to support maintenance activities should repairs be required for rod position indicators during plant operation. Inoperability of more than one rod position indicator per bank for more than one hour requires plant shutdown within the next six hours. Expedited NRC review of this proposed amendment could avoid an unnecessary reactor shutdown. Once approved, the amendment will be implemented within 30 days from the date of issuance.

In accordance with 10 CFR 50.91, a copy of this application, with attachments, is being provided to the designated State of New Jersey Official.

There are no regulatory commitments contained in this letter.

If you have any questions or require additional information, please contact Mr. Brian Thomas at 856-339-2022.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on 2/8/18
(Date)

Respectfully,

Charles V. McFeaters
Site Vice President
Salem Generating Station

Enclosure: Evaluation of the Proposed Changes
Attachment 1 Mark-up of Proposed Technical Specification Pages

cc: Mr. D. Dorman, Administrator, Region I, NRC
Mr. C. Parker, Project Manager, NRC
NRC Senior Resident Inspector, Salem
Mr. P. Mulligan, Chief, NJBNE
PSEG Corporate Commitment Tracking Coordinator
Salem Commitment Tracking Coordinator

Enclosure

Evaluation of the Proposed Changes

Table of Contents

1.0 SUMMARY DESCRIPTION

The proposed change will revise Salem Unit 1 and Unit 2 Technical Specification (TS) 3.1.3.2.1, "Position Indication Systems – Operating," to modify the TS action for more than one inoperable analog rod position indicator from 1 hour to 24 hours consistent with Technical Specification Task Force (TSTF) traveler TSTF-234-A Rev. 1, "Add Action for More Than One [D]RPI Inoperable," and to change the basis for entry into the TS actions for inoperable analog rod position indicators from "per bank" to "per group" to align the TS actions with NUREG-1431, Revision 4, "Standard Technical Specifications - Westinghouse Plants."

For Salem Unit 1, the proposed change will eliminate the duplication of TS 3.1.3.2.1 action b on pages 3/4 1-19 and 3/4 1-19a. The duplication of TS 3.1.3.2.1 action b was introduced during issuance of Salem Unit 1 TS Amendment 299.

2.0 DETAILED DESCRIPTION

2.1 System Design and Operation

Salem Unit 1 and 2 have 53 rod control cluster assemblies (RCCAs) separated into shutdown rods and control rods. There are 24 shutdown rods and 29 control rods. The RCCAs are inserted into the fuel assemblies at distinct locations to uniformly control reactivity. The RCCAs (rods) are further separated into banks and groups as shown below.

RCCA Designations							
Shutdown Rods							
Bank A		Bank B		Bank C		Bank D	
Group 1	Group 2	Group 1	Group 2	Group 1		Group 1	
4	4	4	4	4		4	
Control Rods							
Bank A		Bank B		Bank C		Bank D	
Group 1	Group 2	Group 1	Group 2	Group 1	Group 2	Group 1	Group 2
4- Unit 1 2- Unit 2	4- Unit 1 2- Unit 2	2- Unit 1 4 - Unit 2	2- Unit 1 4 - Unit 2	4	4	4	5

Salem Updated Final Safety Analysis Report (UFSAR) Figure 4.3-26A (Unit 1) and Figure 4.3-26B (Unit 2) show the locations of the RCCAs in the core. The four control banks (A, B, C, D) are the only rods that can be operated under automatic control. All RCCAs in a group are paralleled to step simultaneously.

Reactor startup is accomplished by first manually withdrawing the shutdown rod banks to the full out position. The control rod banks are then withdrawn manually and sequentially by the operator. Control rod movement is automatically programmed to withdraw the control rods in a predetermined sequence. The control rod programming is sequenced such that as the first control rod bank being withdrawn reaches a preset position, the second control rod bank begins to move out simultaneously with the first bank. The staggered withdrawal sequence continues until the control rod banks either reach their fully withdrawn position, or reach the desired

position to control axial flux. Normally all rods are fully withdrawn at full power. The programmed insertion sequence, manual or automatic, is the opposite of the withdrawal sequence (i.e., the last control rod bank out is the first control rod bank in).

The shutdown rod groups together with the control rod groups are capable of shutting the reactor down under all conditions. They are used in conjunction with the adjustment of soluble boron to provide shutdown margin of at least 1.3% Δk/k following a reactor trip with the most reactive rod in the fully withdrawn position.

During normal power operation, it is desirable to maintain the rods in alignment with their respective banks. This provides consistency with the assumptions of the safety analyses, maintains symmetric neutron flux and power distribution profiles, provides assurance that peaking factors are within acceptable limits and assures adequate shutdown margin.

The analog rod position indication (ARPI) senses and displays control rod position as described below. An electrical coil stack linear variable differential transformer is placed above the stepping mechanisms of the control rod magnetic jacks external to the rod/reactor coolant system pressure housing. When the associated control rod is at the bottom of the core, the magnetic coupling between primary and secondary windings is small and there is a small voltage induced in the secondary winding. As the magnetic jacks raise the control rod, the relatively high permeability of the lift rod causes an increase in magnetic coupling. Thus, an analog signal proportional to rod position is derived.

Direct, continuous readout of every RCCA position is presented to the operator by individual control board meter indications without the need for operator selection or switching to determine rod position. The rod position is also displayed on the plant computer.

2.2 Current Technical Specification Requirements

The current Salem Unit 1 and Unit 2 TS 3.1.3.2.1 actions for rod position indication are as follows:

ACTION:

a. With a maximum of one analog rod position indicator per bank inoperable either:

   1. Determine the position of the non-indicating rod(s) indirectly using the power distribution monitoring system (if power is above 25% RTP) or using the movable incore detectors (if power is less than 25% RTP or the power distribution monitoring system is inoperable) at least once per 8 hours and within one hour after any motion of the non-indicating rod which exceeds 24 steps in one direction since the last determination of the rod's position, or

   2. Reduce THERMAL POWER to less than 50% of RATED THERMAL POWER within 8 hours.

b. With two or more analog rod position indicators per bank inoperable, within one hour restore the inoperable rod position indicator(s) to OPERABLE status or be in HOT STANDBY within the next 6 hours. A maximum of one rod position

indicator per bank may remain inoperable following the hour, with Action (a) above being applicable from the original entry time into the LCO.

c. With a maximum of one group demand position indicator per bank inoperable either:

1. Verify that all analog rod position indicators for the affected bank are OPERABLE and that the most withdrawn rod and the least withdrawn rod of the bank are within a maximum of 18 steps when reactor power is ≤ 85% RATED THERMAL POWER or if reactor power is > 85% RATED THERMAL POWER, 12 steps of each other at least once per 8 hours, or

2. Reduce THERMAL POWER to less than 50% of RATED POWER within 8 hours.

2.3 Reason for Proposed Change

Salem Unit 1 experienced erratic position indication on rod 2SB2 (Shutdown Bank B) on January 27, 2018 and declared the rod position indication inoperable. Troubleshooting performed to date has determined that a ground on the shield wire exists for the 2SB2 cable in the rod position disconnect panel inside containment. This ground is causing noise in the indication signal equating to approximately a 2 to 4 step variation in the indication. On February 1, 2018, the indication for 2SB2 was declared operable but degraded. Further troubleshooting or corrective maintenance in the rod disconnect panel to remove the ground has the potential to affect multiple rod position indicators. If more than one rod position indicator in a bank were to become inoperable, Salem Unit 1 would be required to enter TS 3.1.3.2.1 Action b which requires restoration within 1 hour or the plant to be in HOT STANDBY (Mode 3) within the next 6 hours. PSEG is requesting this license amendment request (LAR) be processed as a normal LAR but reviewed on an expedited schedule to reduce the potential for an unnecessary plant shutdown.

2.4 Description of Proposed Change

The proposed changes to the Salem Unit 1 and Unit 2 TS are described below and are indicated on the marked up TS pages provided in Attachment 1 of this submittal. Deletions are indicated with a double strike through and additions are marked with underlining.

Existing TS action a and b are being revised from bank to group. Existing TS action a.1 is revised to separate the action associated with verifying rod position for a rod with an inoperable position indicator when the rod has moved in excess of 24 steps to be consistent with NUREG-1431. The separate action is labeled as new Action c. New Action c retains the allowance to verify rod position indirectly with the power distribution monitoring system in addition to using the movable incore detectors and aligns the time for verification of position indication to 8 hours consistent with Action a.1. Existing TS action b is revised to incorporate the changes from TSTF-234. Existing Action c is revised to new Action d.

ACTION:

a. With a maximum of one analog rod position indicator per ~~bank~~ group inoperable either:

1. Determine the position of the non-indicating rod(s) indirectly using the power distribution monitoring system (if power is above 25% RTP) or using the movable incore detectors (if power is less than 25% RTP or the power distribution monitoring system is inoperable) at least once per 8 hours ~~and within one hour after any motion of the non-indicating rod which exceeds 24 steps in one direction since the last determination of the rod's position~~, or

2. Reduce THERMAL POWER to less than 50% of RATED THERMAL POWER within 8 hours.

b. With two or more analog rod position indicators per ~~bank~~ group inoperable:

1. Immediately place the control rods in manual control, and

2. Monitor and record Reactor Coolant System T_{avg} once every hour, and

3. Verify the position of the rods with inoperable position indicators indirectly using the power distribution monitoring system (if power is above 25% RTP) or using the movable incore detectors (if power is less than 25% RTP or the power distribution monitoring system is inoperable) at least once per 8 hours, and

4. Within ~~one~~ 24 hours restore the inoperable rod position indicator~~(s)~~ to OPERABLE status such that a maximum of one rod position indicator per group is inoperable, or

5. Be in HOT STANDBY within the next 6 hours. ~~A maximum of one rod position indicator per bank may remain inoperable following the hour, with Action (a) above being applicable from the original entry time into the LCO.~~

c. When one or more rods with inoperable position indicators have been moved in excess of 24 steps in one direction since the last determination of the rod's position:

1. Determine the position of the non-indicating rod(s) indirectly using the power distribution monitoring system (if power is above 25% RTP) or using the movable incore detectors (if power is less than 25% RTP or the power distribution monitoring system is inoperable) within 8 hours, or

2. Reduce THERMAL POWER to less than 50% of RATED THERMAL POWER within 8 hours.

~~c~~d. With a maximum of one group demand position indicator per bank inoperable either:

1. Verify that all analog rod position indicators for the affected bank are OPERABLE and that the most withdrawn rod and the least withdrawn rod of the bank are within a maximum of 18 steps when reactor power is ≤ 85% RATED THERMAL POWER or if reactor power is > 85% RATED THERMAL POWER, 12 steps of each other at least once per 8 hours, or

2. Reduce THERMAL POWER to less than 50% of RATED POWER within 8 hours.

For Salem Unit 1, TS 3.1.3.2.1 Action b is duplicated on pages 3/4 1-19 and 3/4 1-19a. This change will remove the duplicated action statement.

3.0 TECHNICAL EVALUATION

The proposed changes to the actions of TS 3.1.3.2.1 consist of the following changes:

- Revise the basis for entry into Action a and b of TS 3.1.3.2.1 from “per bank” to “per group”
- Revise Action a.1 to relocate the action to verify rod position for a rod with an inoperable position indicator upon rod movement in excess of 24 steps to new Action c
- Revise Action b to allow 24 hours to restore to rod indication when 2 or more position indicators in a group are inoperable
- New Action c aligns with Condition C of NUREG-1431 TS 3.1.7 and retains the existing provision in the Salem TS to use the power distribution system monitoring system as an alternate method to the movable incore system and aligns the time for verification of position indication to 8 hours consistent with Action a.1.
- Current Action c is renumbered to Action d with no other changes

Revising the basis for entry into Action a and b of TS 3.1.3.2.1 from “per bank” to “per group” is consistent with NUREG-1431. The current Salem TS were developed based upon NUREG-0452, Standard Technical Specifications for Westinghouse Pressurized Water Reactors. The NRC, through the approval of the Westinghouse Improved Standard Technical Specifications (ITS), NUREG-1431, revised the action associated with rod position indication from bank to group. LCO 3.1.3.2.1 ensures OPERABILITY of the analog rod position indicators to determine the position of the rods in each group and thereby ensure compliance with group alignment and bank insertion limits. Individual rods in a group all receive the same demand signal to move and should, therefore, all be at the same position indicated by the group step counter for that group. All RCCAs in a group are paralleled to step simultaneously. Therefore, the basis for entry into the TS Actions for inoperable analog position indicators is appropriately "per group."

Revising TS 3.1.3.2.1 action a.1 to relocate the action to verify rod position for a rod with an inoperable position indicator upon rod movement in excess of 24 steps to new Action c is an administrative change to align the Salem TS with NUREG-1431, TS 3.1.7, Condition A and C. Further changes to new Action c are discussed below.

Action b of TS 3.1.3.2.1 is revised to allow 24 hours to restore rod indication when 2 or more position indicators in a group are inoperable consistent with TSTF-234-A. TSTF-234-A allows verification of core peaking factors (Salem TS 3.2.2 and 3.2.3) and shutdown margin (SDM)

(Salem TS 3.1.1.1) to satisfy the action requirements, provided the non-indicating rods have not been moved as discussed in the Kewanuee TS Amendment Safety Evaluation Report (SER) and Vogtle TS Amendment SER (References 5 and 7). The additional time to restore an inoperable ARPI is appropriate because the proposed action would require that the control rods be under manual control, that Reactor Coolant System (RCS) T_{avg} be monitored and recorded hourly, and that rod position be verified indirectly every 8 hours thereafter, thereby assuring that the rod alignment and rod insertion LCOs are met. Therefore, the required shutdown margin will be maintained. Given the alternate position monitoring requirement, and other indirect means of monitoring changes in rod position (e.g., RCS temperature deviation), a 24 hour completion time to restore all but one ARPI per group provides sufficient time to restore operability while minimizing shutdown transients during the time that the position indication system is degraded. The proposed change deviates from TSTF-234-A in retaining the current allowance in the Salem TS to use the power distribution monitoring system (TS 3.3.3.14) as an alternate to the movable incore detectors for indirectly verifying rod position. The NRC approved use of the power distribution monitoring system (BEACON system) to determine the position of non-indicating rods in Salem Unit 1 and Unit 2 TS Amendments 237 and 218, respectively.

New TS 3.1.3.2.1 Action c relocates the existing action to verify rod position for a rod with an inoperable position indicator upon rod movement in excess of 24 steps from the current TS 3.1.3.2.1 Action a.1. This change is consistent with NUREG-1431, TS 3.1.7 Condition C with the exception of retaining the current allowance in the Salem TS to use the power distribution monitoring system (TS 3.3.3.14) as an alternate to the movable incore detectors for indirectly verifying rod position. The completion time for TS 3.1.7 Condition C is bracketed in NUREG-1431 which indicates that this value should be determined based on plant specific input. A completion time of 8 hours for verifying rod position following rod movement is proposed. This time is consistent with the completion time established in TS Action 3.1.3.2.1 Action a.1 for initial verification of rod position and provides an acceptable period of time to verify the rod positions. A completion time of 8 hours is consistent with timeframe established in Kewaunee TS Amendment No. 176 (Reference 5).

Existing TS 3.1.3.2.1 Action c is renumbered as new Action d. This is an administrative change. New TS 3.1.3.2.1 Action d is consistent with NUREG-1431 TS 3.1.7 Condition D.

For Salem Unit 1, the proposed change will eliminate the duplication of TS 3.1.3.2.1 action b on pages 3/4 1-19 and 3/4 1-19a. The duplication of TS 3.1.3.2.1 action b was introduced during issuance of Salem Unit 1 TS Amendment 299.

In summary, the requirements that are modified for the rod position indication system ensure that during normal power operation and abnormal anticipated occurrences that the positions of the rods are known. Knowing the position of the rods ensures alignment with their respective banks and the assumption of the safety analysis.

4.0 REGULATORY EVALUATION

4.1 Applicable Regulatory Requirements/Criteria

10 CFR 50, Appendix A, General Design Criteria (GDC)

Salem was designed and constructed in accordance with Atomic Energy Commission (AEC) proposed General Design Criteria published in July 1967. The applicable AEC proposed criteria, as document in Salem UFSAR Section 3.1, were compared to 10 CFR 50 Appendix A General Design Criteria (GDC) as discussed below. The applicable GDC criterion is GDC-13.

Criterion 13—Instrumentation and control. Instrumentation shall be 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, including those variables and systems that can affect the fission process, the integrity of the reactor core, the reactor coolant pressure boundary, and the containment and its associated systems. Appropriate controls shall be provided to maintain these variables and systems within prescribed operating ranges.

GDC Criterion 13 is similar to AEC Criterion 12.

Following implementation of the proposed changes, Salem Units 1 and 2 will remain in compliance with AEC Criterion 12.

4.2 Precedent

The NRC documented their approval of TSTF-234-A, Revision 1, in a letter from William D. Beckner (NRC) to James Davis (NEI) dated January 13, 1999 (ADAMS Accession No. ML9901210038). The addition of a TS Action to allow for more than one rod per group to be out of service for a maximum of 24 hours, consistent with TSTF-234-A, Revision 1, was approved for Kewaunee in Amendment No. 176 dated September 22, 2004 (ADAMS Accession No. ML042230068).

In a letter from Southern Company to the NRC dated July 18, 2014, Vogtle Units 1 and 2 requested adoption of several TSTF Travelers including TSTF-234-A (ADAMS Accession No. ML14203A124). The Vogtle license amendment request was approved as Amendment Nos. 180 and 161 dated June 9, 2016 (ADAMS Accession No. ML15132A569).

4.3 No Significant Hazards Consideration

PSEG requests an amendment to the Salem Unit 1 and Unit 2 Operating Licenses. The proposed amendment revises Salem Unit 1 and Unit 2 Technical Specification (TS) 3.1.3.2.1, “Position Indication Systems – Operating,” to modify the TS allowed outage time for more than one inoperable analog rod position indicator from 1 hour to 24 hours consistent with TSTF-234-A Revision 1, “Add Action for More Than One [D]RPI Inoperable,” and to change the basis for entry into the TS actions for inoperable analog rod position indicators from “per bank” to “per group” to align the TS actions with NUREG-1431, Revision 4, "Standard Technical Specifications - Westinghouse Plants.”

PSEG has evaluated the proposed changes to the TS using the criteria in 10 CFR 50.92, and determined that the proposed changes do not involve a significant hazards consideration. The following information is provided to support a finding of no significant hazards:

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

   Response: No

   Rod position indication instrumentation is not an accident initiator, providing indication only of the control and shutdown rods positions. Normal operation, abnormal occurrences and accident analyses assume the rods are at certain positions within the reactor core. The proposed changes modify the time that rod position indication may be inoperable and provide appropriate actions to compensate for that inoperability. Thus, these changes do not involve a significant increase in the probability of an accident.

   Extending the allowed outage time to restore inoperable rod position indicators does not affect the operability of the shutdown or control rods. With rod position indicators inoperable, the position of non-indicating rods is required to be verified using the movable incore detectors or the power distribution monitoring system. Thus, inoperable rod position indication instrumentation does not involve an increase in the consequences of an accident.

   Therefore, these proposed changes do not represent 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 kind of accident from any accident previously evaluated?

   Response: No

   The proposed change does not alter the design, function, or operation of any plant component and does not install any new or different equipment. The proposed changes will not impose any new or different requirement or introduce a new accident initiator, accident precursor, or malfunction mechanism.

   Therefore, the proposed changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Do the proposed changes involve a significant reduction in a margin of safety?

   Response: No

   Loss of rod position indication does not cause a rod to be misaligned. With rod position indicators inoperable, the position of non-indicating rods is required to be verified using the movable incore detectors or the power distribution monitoring system. The proposed changes will not affect the ability of the shutdown or control rods to perform their required function.

   The proposed amendment will not result in a design basis or safety limit being exceeded or altered. Therefore, since the proposed changes do not impact the response of the plant to a

design basis accident, the proposed changes do not involve a significant reduction in a margin of safety.

Based upon the above, PSEG concludes that the proposed amendment presents no 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.

4.4 Conclusion

Therefore, based on the considerations discussed above, (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.

5.0 ENVIRONMENTAL CONSIDERATION

A review has determined that the proposed amendment would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or would change an inspection or surveillance requirement. However, 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 offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criterion 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 be prepared in connection with the proposed amendment.

6.0 REFERENCES

1. NUREG-1431, Revision 4.0, Standard Technical Specifications Westinghouse Plants, April 2012
2. Technical Specification Task Force (TSTF) traveler TSTF-234, Rev 1, "Add Action for More Than One [D]RPI Inoperable."
3. Letter from William D. Beckner (NRC) to James Davis (NEI) approving TSTF-234, dated January 13, 1999
4. Letter from Nuclear Management Company to NRC, "License Amendment Request 203 to Kewaunee Nuclear Power Plant Technical Specifications, 'Rod Position Indication,'" dated May 25, 2004, (ADAMS Accession No. ML041620503)
5. Letter NRC to Nuclear Management Company, "Kewaunee Nuclear Power Plant – Issuance of Amendment Re: Rod Position Indication (TAC No. MC3278)," dated September 22, 2004 (ADAMS Accession No. ML042230068).
6. Letter from Southern Nuclear Operating Company to NRC, "Vogtle Electric Generating Plant – Units 1 and 2, Application to Revise Technical Specifications to Adopt Previously NRC-Approved Generic Technical Specification Changes," dated July 18, 2014 (ADAMS Accession No. 14203A124)
7. Letter from NRC to Southern Nuclear Operating Company, " Vogtle Electric Generating Plant, Units 1 and 2 – Issuance of Amendments Regarding Multiple Technical

Specification Changes (TAC Nos. MF4560 and MF4561)," dated June 9, 2016 (ADAMS Accession No. ML15132A569)

8. Letter from NRC to PSEG, "Salem Nuclear Generating Station, Unit Nos. 1 and 2, Issuance of Amendment Re: BEACON Technical Specification Monitoring System (TAC Nos MA9193 and MA9194)," dated November 6, 2000 (ADAMS Accession No. ML003761792)
9. Letter from NRC to PSEG, "Salem Nuclear Generating Station, Units Nos. 1 and 2, Issuance of Amendments Re: Relocation of Specific Surveillance Frequencies to a Licensee-Controlled Program Based on Technical Specification Task Force (TSTF) Change TSTF-425 (TAC Nos. ME3574 and ME3575)," dated March 21, 2011 (ADAMS Accession No. ML110410691)

Attachment 1

Mark-up of Proposed Technical Specification Pages

The following Technical Specifications pages for Renewed Facility Operating License DPR-70 are affected by this change request:

Technical Specification	Page
3.1.3.2.1, Position Indication Systems - Operating	3/4 1-19, 1-19a

The following Technical Specifications pages for Renewed Facility Operating License DPR-75 are affected by this change request:

Technical Specification	Page
3.1.3.2.1, Position Indication Systems - Operating	3/4 1-16, 1-16a

Technical Specification Mark-Up Inserts for Salem Unit 1 and 2

INSERT 1 (3.1.3.2.1 ACTION)

b. With two or more analog rod position indicators per group inoperable:

1. Immediately place the control rods in manual control, and

2. Monitor and record Reactor Coolant System T_{avg} once every hour, and

3. Verify the position of the rods with inoperable position indicators indirectly using the power distribution monitoring system (if power is above 25% RTP) or using the movable incore detectors (if power is less than 25% RTP or the power distribution monitoring system is inoperable) at least once per 8 hours, and

4. Within 24 hours restore the inoperable rod position indicators to OPERABLE status such that a maximum of one rod position indicator per group is inoperable, or

5. Be in HOT STANDBY within the next 6 hours.

c. When one or more rods with inoperable position indicators have been moved in excess of 24 steps in one direction since the last determination of the rod's position:

1. Determine the position of the non-indicating rod(s) indirectly using the power distribution monitoring system (if power is above 25% RTP) or using the movable incore detectors (if power is less than 25% RTP or the power distribution monitoring system is inoperable) within 8 hours, or

2. Reduce THERMAL POWER to less than 50% of RATED THERMAL POWER within 8 hours.

REACTIVITY CONTROL SYSTEMS

POSITION INDICATION SYSTEMS - OPERATING

LIMITING CONDITION FOR OPERATION

3.1.3.2.1 The shutdown and control rod position indication systems shall be OPERABLE and capable of determining the actual and demanded rod positions as follows:

a. Analog rod position indicators, within one hour after rod motion (allowance for thermal soak);

All Shutdown Banks: ± 18 steps at ≤ 85% reactor power or if reactor power is > 85% RATED THERMAL POWER ± 12 steps of the group demand counters for withdrawal ranges of 0-30 steps and 200-230 steps.

Control Bank A: ± 18 steps at ≤ 85% reactor power or if reactor power is > 85% RATED THERMAL POWER ± 12 steps of the group demand counters for withdrawal ranges of 0-30 steps and 200-230 steps.

Control Bank B: ± 18 steps at ≤ 85% reactor power or if reactor power is > 85% RATED THERMAL POWER ± 12 steps of the group demand counters for withdrawal ranges of 0-30 steps and 160-230 steps.

Control Bank C and D: ± 18 steps at ≤ 85% reactor power or if reactor power is > 85% RATED THERMAL POWER ± 12 steps of the group demand counters for withdrawal ranges of 0-230 steps.

b. Group demand counters; ± 2 steps of the pulsed output of the Slave Cycler Circuit over the withdrawal range of 0-230 steps.

APPLICABILITY: MODES 1 and 2.

ACTION:

a. With a maximum of one analog rod position indicator per ~~bank~~ group inoperable either:

1. Determine the position of the non-indicating rod(s) indirectly using the power distribution monitoring system (if power is above 25% RTP) or using the movable incore detectors (if power is less than 25% RTP or the power distribution monitoring system is inoperable) at least once per 8 hours ~~and within one hour after any motion of the non-indicating rod which exceeds 24 steps in one direction since the last determination of the rod's position~~, or

2. Reduce THERMAL POWER to less than 50% of RATED THERMAL POWER within 8 hours.

b. With two or more analog rod position indicators per bank inoperable, within one hour restore the inoperable rod position indicator(s) to OPERABLE status or be in HOT STANDBY within the next 6 hours. A maximum of one rod position indicator per bank may remain inoperable following the hour, with Action (a) above being applicable from the original entry time into the LCO.

LIMITING CONDITION FOR OPERATION (Continued)

INSERT →

b. With two or more analog rod position indicators per bank inoperable, within one hour restore the inoperable rod position indicator(s) to OPERABLE status or be in HOT STANDBY within the next 6 hours. A maximum of one rod position indicator per bank may remain inoperable following the hour, with Action (a) above being applicable from the original entry time into the LCO.

c. d. With a maximum of one group demand position indicator per bank inoperable either:

1. Verify that all analog rod position indicators for the affected bank are OPERABLE and that the most withdrawn rod and the least withdrawn rod of the bank are within a maximum of 18 steps when reactor power is ≤ 85% RATED THERMAL POWER or if reactor power is > 85% RATED THERMAL POWER, 12 steps of each other at least once per 8 hours, or

2. Reduce THERMAL POWER to less than 50% of RATED POWER within 8 hours.

SURVEILLANCE REQUIREMENTS

4.1.3.2.1.1 Each analog rod position indicator shall be determined to be OPERABLE by verifying that the demand position indication system and the rod position indication system agree within 18 steps when reactor power is ≤ 85% RATED THERMAL POWER or if reactor power is > 85% RATED THERMAL POWER, 12 steps (allowing for one hour thermal soak after rod motion) in accordance with the Surveillance Frequency Control Program except during time intervals when the Rod Position Deviation Monitor is inoperable, then compare the demand position indication system and the rod position indication system at least once per 4 hours.

4.1.3.2.1.2 Each of the above required rod position indicator(s) shall be determined to be OPERABLE by performance of a CHANNEL calibration in accordance with the Surveillance Frequency Control Program.

POSITION INDICATION SYSTEMS - OPERATING

LIMITING CONDITION FOR OPERATION

3.1.3.2.1 The shutdown and control rod position indication systems shall be OPERABLE and capable of determining the actual and demanded rod positions as follows:

a. Analog rod position indicators, within one hour after rod motion (allowance for thermal soak);

All Shutdown Banks: ± 18 steps at ≤85% reactor power or if reactor power is > 85% RATED THERMAL POWER ± 12 steps of the group demand counters for withdrawal ranges of 0-30 steps and 200-230 steps.

Control Bank A: ± 18 steps at ≤85% reactor power or if reactor power is > 85% RATED THERMAL POWER ± 12 steps of the group demand counters for withdrawal ranges of 0-30 steps and 200-230 steps.

Control Bank B: ± 18 steps at ≤85% reactor power or if reactor power is > 85% RATED THERMAL POWER ± 12 steps of the group demand counters for withdrawal ranges of 0-30 steps and 160-230 steps.

Control Banks C and D: ± 18 steps at ≤85% reactor power or if reactor power is > 85% RATED THERMAL POWER ± 12 steps of the group demand counters for withdrawal range of 0-230 steps.

b. Group demand counters; ± 2 steps of the pulsed output of the Slave Cycler Circuit over the withdrawal range of 0-230 steps.

APPLICABILITY: MODES 1 and 2.

ACTION:

a. With a maximum of one analog rod position indicator per ~~bank~~ group inoperable either:

1. Determine the position of the non-indicating rod(s) indirectly using the power distribution monitoring system (if power is above 25% RTP) or using the movable incore detectors (if power is less than 25% RTP or the power distribution monitoring system is inoperable) at least once per 8 hours ~~and within one hour after any motion of the non-indicating rod which exceeds 24 steps in one direction since the last determination of the rod's position~~, or

2. Reduce THERMAL POWER to less than 50% of RATED THERMAL POWER within 8 hours.

b. With two or more analog rod position indicators per bank inoperable, within one hour restore the inoperable rod position indicator(s) to OPERABLE status or be in HOT STANDBY within the next 6 hours. A maximum of one rod position indicator per bank may remain inoperable following the hour, with Action (a) above being applicable from the original entry time into the LCO.

LIMITING CONDITION FOR OPERATION (Continued)

INSERT → c. d.

With a maximum of one group demand position indicator per bank inoperable either:

1. Verify that all analog rod position indicators for the affected bank are OPERABLE and that the most withdrawn rod and the least withdrawn rod of the bank are within a maximum of 18 steps when reactor power is ≤ 85% RATED THERMAL POWER or if reactor power is > 85% RATED THERMAL POWER, 12 steps of each other at least once per 8 hours, or

2. Reduce THERMAL POWER to less than 50% of RATED THERMAL POWER within 8 hours.

SURVEILLANCE REQUIREMENTS

4.1.3.2.1.1 Each analog rod position indicator shall be determined to be OPERABLE by verifying that the demand position indication system and the rod position indication system agree within 18 steps when reactor power is ≤ 85% RATED THERMAL POWER or if reactor power is > 85% RATED THERMAL POWER, 12 steps (allowing for one hour thermal soak after rod motion) in accordance with the Surveillance Frequency Control Program except during time intervals when the Rod Position Deviation Monitor is inoperable, then compare the demand position indication system and the rod position indication system at least once per 4 hours.

4.1.3.2.1.2 Each of the above required rod position indicator(s) shall be determined to be OPERABLE by performance of a CHANNEL calibration in accordance with the Surveillance Frequency Control Program.