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Dominion®

August 19, 2014

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555

Serial No. 14-301
NSSL/MAE R0
Docket No. 50-423
License No. NPF-49

DOMINION NUCLEAR CONNECTICUT, INC.
MILLSTONE POWER STATION UNIT 3
LICENSE AMENDMENT REQUEST, PROPOSED TECHNICAL SPECIFICATIONS CHANGE TO THE AUXILIARY FEEDWATER SYSTEM

Pursuant to 10 CFR 50.90, Dominion Nuclear Connecticut, Inc. (DNC) requests an amendment to Operating License NPF-49 for Millstone Power Station Unit 3 (MPS3). The proposed change will revise Technical Specification (TS) 3/4.7.1.2, "Auxiliary Feedwater System," Surveillance Requirement (SR) 4.7.1.2.1.b. The proposed TS change is consistent with the Standard Technical Specifications for Westinghouse Plants (NUREG-1431, Revision 4).

The proposed change has been reviewed and approved by the Facility Safety Review Committee.

Information provided in the attachments to this letter is summarized below:

- Attachment 1 provides the Description, Technical Evaluation, Regulatory Evaluation and Environmental Consideration for the proposed Technical Specifications change. As discussed in this attachment, the proposed amendment does not involve a significant hazards consideration pursuant to the provisions of 10 CFR 50.92.

- Attachment 2 contains marked-up pages to reflect the proposed change to the Technical Specifications.

- Attachment 3 contains marked-up pages to reflect the proposed change to the Technical Specifications Bases for information only and will be implemented in accordance with the Technical Specification Bases Control Program.

DNC requests approval of the proposed amendment by August 19, 2015. Once approved, the amendment will be implemented within 120 days.

In accordance with 10 CFR 50.91(b), a copy of this license amendment request is being provided to the State of Connecticut.

A001
NRR

If you have any questions regarding this submittal, please contact Wanda Craft at (804) 273-4687.

Sincerely,

Mark D. Sartain
Vice President – Nuclear Engineering

COMMONWEALTH OF VIRGINIA)
)
COUNTY OF HENRICO)

The foregoing document was acknowledged before me, in and for the County and Commonwealth aforesaid, today by Mark D. Sartain, who is Vice President – Nuclear Engineering of Dominion Nuclear Connecticut, Inc. He has affirmed before me that he is duly authorized to execute and file the foregoing document in behalf of that Company, and that the statements in the document are true to the best of his knowledge and belief.

Acknowledged before me this 19TH day of August, 2014.

My Commission Expires: 5-31-18

Vicki L. Hull
Notary Public

Vicki L. Hull
NOTARY PUBLIC
Commonwealth of Virginia
Reg. # 140542
My Commission Expires May 31, 2018

Commitments made in this letter: None

Attachments:

1. Evaluation of the Proposed Change
2. Marked-up Technical Specifications Pages
3. Marked-up Technical Specifications Bases Pages for information only

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Attachment 1

Evaluation of the Proposed Change

DOMINION NUCLEAR CONNECTICUT, INC.
MILLSTONE POWER STATION UNIT 3

1.0 DESCRIPTION

2.0 PROPOSED CHANGE

3.0 TECHNICAL ANALYSIS

4.0 REGULATORY SAFETY ANALYSIS

4.1 Applicable Regulatory Requirements/Criteria

4.2 No Significant Hazards Consideration

5.0 ENVIRONMENTAL CONSIDERATION

1.0 DESCRIPTION

The proposed change will revise Millstone Power Station Unit 3 (MPS3) Technical Specification (TS) 3/4.7.1.2, "Auxiliary Feedwater System," Surveillance Requirement (SR) 4.7.1.2.1.b. The proposed change replaces the surveillance frequency and acceptance criteria for the AFW pumps with a reference to the Inservice Testing (IST) program (TS 4.0.5) for the specific pump testing acceptance criteria and the surveillance frequency, which is consistent with the other pump and valve surveillance requirements in the TS. The proposed change also adds information on suitable plant conditions for performance of the steam turbine driven AFW pump surveillance. The proposed TS change is consistent with the Standard Technical Specifications (STS) for Westinghouse Plants (NUREG-1431, Revision 4).

2.0 PROPOSED CHANGE

SR 4.7.1.2.1.b., "Auxiliary Feedwater System"

The current SR states:

"At least once per 92 days on a STAGGERED TEST BASIS, tested pursuant to Specification 4.0.5, by:

1) Verifying that on recirculation flow each motor-driven pump develops a total head of greater than or equal to 3385 feet;

2) Verifying that on recirculation flow the steam turbine-driven pump develops a total head of greater than or equal to 3780 feet when the secondary steam supply pressure is greater than 800 psig. The provisions of Specification 4.0.4 are not applicable for entry into MODE 3."

The SR will be changed to read as follows:

"----------NOTE----------
Not required to be performed for the steam turbine driven auxiliary feedwater pump until 24 hours after reaching 800 psig in the steam generators.

Verify the developed head of each auxiliary feedwater pump at the flow test point is greater than or equal to the required developed head when tested pursuant to Specification 4.0.5. The provisions of Specification 4.0.4 are not applicable to the steam turbine driven auxiliary feedwater pump for entry into MODE 3."

TS Bases 3/4.7.1.2, "Auxiliary Feedwater System":

TS Bases 3/4.7.1.2 has been modified to: 1) include a discussion addressing changes to SR 4.7.1.2.1.b, 2) add additional discussion addressing SR 4.7.1.2.1.c, and 3) add additional discussion addressing SR 4.7.1.2.2. The proposed change to the TS Bases is provided for information only and will be implemented in accordance with the TS Bases Control Program.

3.0 TECHNICAL ANALYSIS

3.1 System Description

The AFW system is described in MPS3 Final Safety Analysis Report (FSAR) Section 10.4.9. The AFW system consists of two motor-driven auxiliary feedwater pumps, one turbine-driven auxiliary feedwater pump, and the associated piping and valves necessary to connect the demineralized water storage tank (DWST) to the pump suctions, and the pump discharges to the feedwater system.

Two half-size motor-driven auxiliary feedwater pumps and one full-size turbine-driven auxiliary feedwater pump are provided. Sufficient auxiliary feedwater for plant cooldown can be supplied by either the turbine-driven pump or the two motor-driven pumps. A single motor-driven auxiliary feedwater pump is also capable of supplying auxiliary feedwater flow to two intact steam generators. This capacity is provided to protect against multiple failures as well as to provide power source diversity.

The steam generator auxiliary feedwater pumps are used as an emergency source of feedwater supply to the steam generators. The pumps are required to ensure safe shutdown in the event of loss of power or function as an Engineered Safeguards System to remove core decay heat. The pumps are on standby service during normal plant operation.

3.2 Current Licensing Bases

The MPS3 design was reviewed in accordance with NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Report for Nuclear Power Plants," SRP 6.2.1.1.A, Rev. 2, July 1981.

As noted in the Final Safety Analysis Report (FSAR) Section 3.1, the design bases for MPS3 was reviewed against the NRC General Design Criteria for Nuclear Power Plants, 10 CFR 50, Appendix A, as amended through October 27, 1978. The adequacy of the MPS3 design relative to the design criteria is discussed in the FSAR Sections 3.1.1 and 3.1.2.

The auxiliary feedwater system is designed in accordance with the following criteria.

1. General Design Criterion 2, for structures housing the system and the system itself being capable of withstanding the effects of natural phenomena such as earthquakes, tornadoes, hurricanes, and floods.

2. General Design Criterion 4, with respect to structures housing the system and the system itself being capable of withstanding the effects of external missiles and internally generated missiles, pipe whip, and jet impingement forces associated with pipe breaks.

3. General Design Criterion 5, for shared systems and components important to safety being capable to perform required safety functions.

4. General Design Criterion 19, for the design capability of system instrumentation and controls for prompt hot shutdown of the reactor and potential capability for subsequent cold shutdown.

5. General Design Criterion 34, to ensure:

    a. The capability of the auxiliary feedwater system to sufficiently transfer fission product decay heat and other residual heat from the reactor core at a rate such that specified acceptable fuel design limits and the design conditions of the reactor coolant pressure boundary are not exceeded.

    b. Suitable redundancy in components, features, interconnections, leak detection, and isolation capabilities is provided to assure, under assumption of a single failure, the continued safety function regardless of the loss of either onsite, offsite, or the generating capability of both power systems.

6. General Design Criterion 44, to ensure:

    a. The capability to transfer heat loads from the reactor system to a heat sink under both normal operating and accident conditions.

    b. Redundancy of components so that under accident conditions the safety function can be performed assuming a single active component failure (This may be coincident with the loss of offsite power for certain events).

    c. The capability to isolate components, subsystems, or piping, if required, so that the system safety function is maintained.

7. General Design Criterion 45, for design provisions to permit periodic inservice inspection of system components and equipment.

8. General Design Criterion 46, for design provisions to permit appropriate functional testing of the system and components to ensure structural integrity and leak tightness, operability and performance of active components, and capability of the integrated system to function as intended during normal, shutdown, and accident conditions.

9. General Design Criterion 57, for design provisions to ensure that each line that penetrates primary reactor containment and is neither part of the reactor coolant pressure boundary nor connected to the containment atmosphere shall have at least one containment isolation valve which shall be either automatic, or locked closed, or capable of remote manual operation.

10. The following Regulatory Guides (subject to exceptions as specified in MPS3 FSAR Section 1.8, "Conformance with NRC Regulatory Guides"):

    - Regulatory Guide 1.26, for the quality group classification of system components.

    - Regulatory Guide 1.29, for seismic design classification of system components.

    - Regulatory Guide 1.62, for design provisions made for manual initiation of each protective action.

    - Regulatory Guide 1.102, for the protection of structures, systems, and components important to safety from the effects of flooding.

    - Regulatory Guide 1.117, for the protection of structures, systems, and components important to safety from the effects of tornado missiles.

11. Branch Technical Positions APCSB 3-1 and MEB 3-1, for breaks in high and moderate energy piping systems outside containment.

12. Branch Technical Position ASB 10-1, for auxiliary feedwater pump drive and power supply diversity.

13. Branch Technical Position RSB 5-1 for safety grade cold shutdown.

3.3 Analysis of the Proposed Changes

The proposed change would revise TS SR 4.7.1.2.1.b to remove the surveillance frequency and acceptance criteria for the AFW pumps and reference the IST Program as a basis for the surveillance requirement. The IST Program (TS 4.0.5) will verify the component acceptance criteria, consistent with design basis requirements, and control the frequency of test performance. The acceptance criteria (e.g., developed head, pump flowrate) are based on the design basis requirements. Performance of the required testing will verify proper component operation, and will detect component degradation. The frequency of test performance may change based on equipment performance.

The use of the IST Program to control pump and valve testing is consistent with current industry practices and published guidelines. Many of the surveillance requirements contained in NUREG-1431, Rev. 4, illustrate the use of the IST Program to verify the acceptance criteria and control the frequency of test performance. The surveillance requirements contained in NUREG-1431 refer to the IST Program; however, because MPS3 has custom TS, the surveillance requirements in MPS3 TS refer to Specification 4.0.5 (Inservice Testing Program). Individual NUREG-1431 surveillance requirements refer to the IST Program which is contained in Section 5 (Technical Specification 5.5.8, "Inservice Testing Program"). However, since the MPS3 TS still contains TS 4.0.5, the proposed surveillance requirements will refer to "Specification 4.0.5."

The proposed changes in SR 4.7.1.2.b are justified as follows:

1. The surveillance frequency in SR 4.7.1.2.b would be replaced with a reference to the IST Program.

   The IST Program specifies a minimum test performance interval of 92 days. Therefore, the surveillance frequency when tested pursuant to Specification 4.0.5 will remain unaffected.

2. The pump acceptance criteria in SRs 4.7.1.2.1.b.1 and 4.7.1.2.1.b.2 would be replaced with a reference to the IST Program.

   The pump acceptance criteria specified by design basis requirements is verified by the IST Program, which is referenced (Specification 4.0.5) in the proposed SR 4.7.1.2.1.b. It is not necessary to specify the acceptance criteria in the surveillance requirement. The IST Program provides sufficient control of this value to ensure the associated pumps will perform as assumed in the accident analysis. Removal of this specific value will not adversely impact test performance. This approach to allow the IST Program to specify the acceptance criteria based on design basis requirements is consistent with NUREG-1431 Rev. 4 (SR 3.7.5.2).

The IST program requires verification of the acceptance criteria of the AFW pumps at the flow test point rather than at recirculation flow conditions, a method acceptable by the ASME OM Code. The proposed change conforms with the STS in testing of the AFW pumps and does not reduce the testing requirements for the AFW pumps.

3. The addition of the Note to the proposed SR 4.7.1.2.b that the test does not have to be performed for the steam turbine driven AFW pump until 24 hours after reaching 800 psig in the steam generators.

   This change will provide additional guidance to the plant operators and allows deferral of the surveillance until suitable plant conditions are established and the plant is stable. This deferral is required because there may be insufficient steam pressure to perform the test prior to reaching 800 psig in the steam generators. The use of a 24 hour time limit is consistent with the guidance contained in Generic Letter (GL) 87-09. This approach to address the performance of surveillance requirements that cannot be performed until certain plant conditions are established is consistent with NUREG-1431, Rev. 4 (SR 3.7.5.2).

4.0 REGULATORY EVALUATION

4.1 Applicable Regulatory Requirements/Criteria

In Section 50.36, "Technical specifications," of Title 10 of the Code of Federal Regulations (10 CFR), the Commission established its regulatory requirements related to the content of technical specifications. Pursuant to 10 CFR 50.36(d), technical specifications are required to include items in the following five specific categories related to station operation: (1) safety limits, limiting safety system settings, and limiting control settings; (2) limiting conditions for operation; (3) surveillance requirements; (4) design features; and (5) administrative controls. This license amendment request deals with a proposed change to a surveillance requirement.

The design criteria for the AFW system are addressed in section 3.2 above.

4.2 No Significant Hazards Consideration

Pursuant to 10 CFR 50.90, Dominion Nuclear Connecticut, Inc. (DNC) requests amendment to Operating License NPF-49 for Millstone Power Station Unit 3 (MPS3). The proposed changes will revise Technical Specification (TS) 3/4.7.1.2, "Auxiliary Feedwater System," Surveillance Requirement (SR) 4.7.1.2.1.b. The proposed TS change is consistent with the Standard Technical Specifications for Westinghouse Plants (NUREG-1431, Revision 4).

According to 10 CFR 50.92(c), a proposed amendment to an operating license involves no significant hazards consideration if operation of the facility in accordance with the proposed amendment would not:

1. Involve a significant increase in the probability or consequences of an accident previously evaluated; or

2. Create the possibility of a new or different kind of accident from any accident previously evaluated; or

3. Involve a significant reduction in a margin of safety.

In support of this determination, an evaluation of each of the three criteria set forth in 10 CFR 50.92 is provided below regarding the proposed license amendment.

1. The proposed amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated.

Response: No

The proposed amendment associated with the modifications to the existing surveillance requirement will not cause an accident to occur and will not result in any change in the operation of the associated accident mitigation equipment. The ability of the equipment associated with the proposed amendment to mitigate the design basis accidents will not be affected. The proposed Technical Specification surveillance requirement is sufficient to ensure the required accident mitigation equipment will be available and function properly for design basis accident mitigation. In addition, the design basis accidents will remain the same postulated events described in the MPS3 Final Safety Analysis Report, and the consequences of those events will not be affected.

Therefore, the proposed amendment will not significantly increase the probability or consequences of an accident previously evaluated.

2. The proposed amendment does not create the possibility of a new or different kind of accident from any accident previously evaluated.

Response: No

The proposed amendment to the Technical Specifications surveillance requirement does not impact any system or component that could cause an accident. The proposed amendment does not involve a physical alteration of the plant. No new or different types of equipment will be installed and there are no physical modifications to existing equipment associated with the proposed amendment. The proposed amendment will not alter the way any structure,

system, or component functions, and will not alter the manner in which the plant is operated or require any new operator actions. There will be no adverse effect on plant operation or accident mitigation equipment. The response of the plant and the operators following an accident will not be different. In addition, the proposed amendment does not create the possibility of a new failure mode associated with any equipment or personnel failures.

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

3. The proposed amendment does not involve a significant reduction in a margin of safety?

Response: No

The proposed amendment to the Technical Specification surveillance requirement will not cause an accident to occur and will not result in any change in the operation of the associated accident mitigation equipment. The equipment associated with the proposed Technical Specification surveillance requirement will continue to be able to mitigate the design basis accidents as assumed in the safety analysis. The proposed surveillance requirement is adequate to ensure proper operation of the affected accident mitigation equipment. In addition, the proposed amendment will not affect equipment design or operation, and there are no changes being made to the Technical Specification required safety limits or safety system settings. The proposed amendment, in conjunction with the IST Program, will provide adequate control measures to ensure the accident mitigation functions are maintained.

Therefore, the proposed amendment will not result in a significant reduction in a margin of safety.

Conclusion

Based upon this discussion, it is concluded that the proposed Technical Specification change to revise TS 3/4.7.1.2, "Auxiliary Feedwater System," SR 4.7.1.2.1.b, does not involve a significant hazards consideration.

5.0 ENVIRONMENTAL CONSIDERATION

DNC has evaluated this proposed license amendment consistent with the criteria for identification of licensing and regulatory actions requiring environmental assessment in accordance with 10 CFR 51.21, "Criteria for and identification of licensing and regulatory actions requiring environmental assessments." DNC has determined that this proposed change meets the criteria for categorical exclusion set forth in paragraph (c)(9) of 10 CFR 51.22, "Criterion for categorical exclusion; identification of licensing and regulatory actions eligible for categorical exclusion or otherwise not

requiring environmental review," and has determined that no irreversible consequences exist in accordance with paragraph (b) of 10 CFR 50.92, "Issuance of amendment." This determination is based on the fact that this proposed change is being processed as an amendment to the license issued pursuant to 10 CFR 50, "Domestic Licensing of Production and Utilization Facilities," which changes a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, "Standards for Protection Against Radiation," or which changes an inspection or surveillance requirement and the amendment meets the following specific criteria :

1. The amendment involves no significant hazards consideration.

   As demonstrated in Section 5.2 above, "No Significant Hazards Consideration," the proposed change does not involve any significant hazards consideration.

2. There is no significant change in the types or significant increase in the amounts of any effluent that may be released offsite.

   The proposed changes would revise TS 3/4.7.1.2, "Auxiliary Feedwater System," SR 4.7.1.2.1.b. The proposed changes do not result in an increase in power level, and do not increase the production nor alter the flow path or method of disposal of radioactive waste or byproducts; thus, there will be no significant change in the amounts of radiological effluents released offsite.

   Based on the above evaluation, the proposed change will not result in a significant change in the types or significant increase in the amounts of any effluent released offsite.

3. There is no significant increase in individual or cumulative occupational radiation exposure.

   The proposed change would not result in any changes to the configuration of the facility. The proposed changes will revise TS 3/4.7.1.2, "Auxiliary Feedwater System," SR 4.7.1.2.1.b. The proposed change will not cause a change in the level of controls or methodology used for the processing of radioactive effluents or handling of solid radioactive waste, nor will the proposed amendment result in any change in the normal radiation levels in the plant. Therefore, there will be no increase in individual or cumulative occupational radiation exposure resulting from this change.

Attachment 2

Marked-Up Technical Specifications Pages

DOMINION NUCLEAR CONNECTICUT, INC.
MILLSTONE POWER STATION UNIT 3

February 28, 2007

PLANT SYSTEMS

For Information Only - No Change

AUXILIARY FEEDWATER SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.1.2 At least three independent steam generator auxiliary feedwater pumps and associated flow paths shall be OPERABLE with:

a. Two motor-driven auxiliary feedwater pumps, each capable of being powered from separate emergency busses, and

b. One steam turbine-driven auxiliary feedwater pump capable of being powered from an OPERABLE steam supply system.

APPLICABILITY: MODES 1, 2, and 3.

ACTION:

Inoperable Equipment	Required ACTION
a. Turbine-driven auxiliary feedwater pump due to one of the two required steam supplies being inoperable.	a. Restore affected equipment to OPERABLE status within 7 days. If these ACTIONS are not met, be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 12 hours.
b. - - - - - NOTE - - - - - Only applicable if MODE 2 has not been entered following REFUELING. - - - - - - - - - - - - - - One turbine-driven auxiliary feedwater pump in MODE 3 following REFUELING.	b. Restore affected equipment to OPERABLE status within 7 days. If these ACTIONS are not met, be in at least HOT SHUTDOWN within the following 12 hours.
c. One auxiliary feedwater pump in MODE 1, 2, or 3 for reasons other than a. or b. above.	c. Restore the auxiliary feedwater pump to OPERABLE status within 72 hours. If these ACTIONS are not met, be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 12 hours.
d. Two auxiliary feedwater pumps in MODE 1, 2, or 3.	d. Be in at least HOT STANDBY within 6 hours and in HOT SHUTDOWN within the following 12 hours.

~~February 25, 2014~~

PLANT SYSTEMS

AUXILIARY FEEDWATER SYSTEM

LIMITING CONDITION FOR OPERATION

ACTION: (Continued)

Inoperable Equipment	Required ACTION
e. Three auxiliary feedwater pumps in MODE 1, 2, or 3.	e. - - - - - - - - NOTE - - - - - - - - LCO 3.0.3 and all other LCO required ACTIONS requiring MODE changes are suspended until one AFW pump is restored to OPERABLE status. - Immediately initiate ACTION to restore one auxiliary feedwater pump to OPERABLE status.

SURVEILLANCE REQUIREMENTS

4.7.1.2.1 Each auxiliary feedwater pump shall be demonstrated OPERABLE:

a. At the frequency specified in the Surveillance Frequency Control Program by:

- - - - - - - - - - - - - NOTE - - - - - - - - - - - - - - - - -
Auxiliary feedwater pumps may be considered OPERABLE during alignment and operation for steam generator level control, if they are capable of being manually realigned to the auxiliary feedwater mode of operation.
- -

Verifying each auxiliary feedwater manual, power operated, and automatic valve in each water flow path and in each required steam supply flow path to the steam turbine driven auxiliary feedwater pump, that is not locked, sealed, or otherwise secured in position, is in the correct position.

Insert A - Page 3/4 7-5

b. ~~At least once per 92 days on a STAGGERED TEST BASIS, tested pursuant to Specification 4.0.5, by:~~

~~1) Verifying that on recirculation flow each motor-driven pump develops a total head of greater than or equal to 3385 feet;~~

~~2) Verifying that on recirculation flow the steam turbine-driven pump develops a total head of greater than or equal to 3780 feet when the secondary steam supply pressure is greater than 800 psig. The provisions of Specification 4.0.4 are not applicable for entry into MODE 3.~~

Insert A - Page 3/4 7-5

----------NOTE----------
Not required to be performed for the steam turbine driven auxiliary feedwater pump until 24 hours after reaching 800 psig in the steam generators.

Verify the developed head of each auxiliary feedwater pump at the flow test point is greater than or equal to the required developed head when tested pursuant to Specification 4.0.5. The provisions of Specification 4.0.4 are not applicable to the steam turbine driven auxiliary feedwater pump for entry into MODE 3.

February 25, 2014

PLANT SYSTEMS

For Information Only - No Change

AUXILIARY FEEDWATER SYSTEM

SURVEILLANCE REQUIREMENTS (Continued)

c. At the frequency specified in the Surveillance Frequency Control Program by verifying that each auxiliary feedwater pump starts as designed automatically upon receipt of an Auxiliary Feedwater Actuation test signal. For the steam turbine-driven auxiliary feedwater pump, the provisions of Specification 4.0.4 are not applicable for entry into MODE 3.

4.7.1.2.2 An auxiliary feedwater flow path to each steam generator shall be demonstrated OPERABLE following each COLD SHUTDOWN of greater than 30 days prior to entering MODE 2 by verifying flow to each steam generator.

Attachment 3

Marked-Up Technical Specifications Bases Pages for Information Only

DOMINION NUCLEAR CONNECTICUT, INC.
MILLSTONE POWER STATION UNIT 3

LBDCR 07-MP3-037
July 12, 2007

PLANT SYSTEMS

For Information Only - No Change

BASES

3/4.7.1 TURBINE CYCLE

3/4.7.1.1 SAFETY VALVES (Continued)

restoration to ± 1% of the specified lift setting is not required for valves that will not be used (e.g., replaced) for the next operating cycle. While the lift settings are being restored to within the ± 1% of the required setting, the MSSVs remain OPERABLE provided the actual lift setting is within ± 3% of the required setting. The lift settings, according to Table 3.7-3, correspond to ambient conditions of the valve at nominal operating temperature and pressure.

This SR is modified by a Note that allows entry into and operation in MODE 3 prior to performing the SR. The MSSVs may be either bench tested or tested in situ at hot conditions using an assist device to simulate lift pressure. If the MSSVs are not tested at hot conditions, the lift setting pressure shall be corrected to ambient conditions of the valve at operating temperature and pressure.

REFERENCES

1. FSAR, Section 10.3.1.

2. ASME, Boiler and Pressure Vessel Code, Section III, 1971 edition.

3. FSAR, Section 15.2.

4. NRC Information Notice 94-60, "Potential Overpressurization of the Main Steam System," August 22, 1994.

3/4.7.1.2 AUXILIARY FEEDWATER SYSTEM

The OPERABILITY of the Auxiliary Feedwater (AFW) System ensures a makeup water supply to the steam generators (SGs) to support decay heat removal from the Reactor Coolant System (RCS) upon the loss of normal feedwater supply, assuming the worst case single failure. The AFW System consists of two motor driven AFW pumps and one steam turbine driven AFW pump. Each motor driven AFW pump provides at least 50% of the AFW flow capacity assumed in the accident analysis. After reactor shutdown, decay heat eventually decreases so that one motor driven AFW pump can provide sufficient SG makeup flow. The steam driven AFW pump has a rated capacity approximately double that of a motor driven AFW pump and is thus defined as a 100% capacity pump.

Given the worst case single failure, the AFW System is designed to mitigate the consequences of numerous design basis accidents, including Feedwater Line Break, Loss of Normal Feedwater, Steam Generator Tube Rupture, Main Steam Line Break, and Small Break Loss of Coolant Accident.

~~LBDCR No. 04-MP3-011~~
~~November 10, 2005~~

PLANT SYSTEMS

BASES

AUXILIARY FEEDWATER SYSTEM (Continued)

In addition, given the worst case failure, the AFW is designed to supply sufficient makeup water to replace SG inventory loss as the RCS is cooled to less than 350°F at which point the Residual Heat Removal System may be placed into operation.

~~Surveillance Requirement 4.7.1.2.1 verifies that each AFW pump's total head at a recirculation flow test point is greater than or equal to the required total head. This surveillance ensures that the AFW pump performance has not degraded during the operating cycle. Because it is undesirable to introduce cold AFW into the steam generators while they are operating, this testing is performed with recirculation flow. This test confirms one point on the pump curve and is indicative of overall performance. This test confirms component OPERABILITY is used to trend performance and to detect incipient failures by indicating abnormal performance. The total head specified in Surveillance Requirement 4.7.1.2.1 does not include a margin for test measurement uncertainty. This consideration shall be addressed at the implementing procedure level.~~

Motor driven auxiliary feedwater pumps and associated flow paths are OPERABLE in the following alignment during normal operation below 10% RATED THERMAL POWER.

- Motor operated isolation valves (3FWA*MOV35A/B/C/D) are open in MODE 1, 2 and 3,
- Control valves (3FWA*HV31A/B/C/D) may be throttled or closed during alignment, operation and restoration of the associated motor driven AFW pump for steam generator inventory control.

The motor operated isolation valves must remain fully open due to single failure criteria (the valves and associated pump are powered from the opposite electrical trains).

The Turbine Driven Auxiliary Feedwater (TDAFW) pump and associated flow paths are OPERABLE with all control and isolation valves fully open in MODE 1, 2 and 3. Due to High Energy Line Break analysis, the TDAFW pump cannot be used for steam generator inventory control during normal operation below 10% RATED THERMAL POWER.

At MPS 3, only two of the three available steam supplies are required to establish an OPERABLE steam supply system. With one of the two required steam supplies inoperable, normally the third steam supply will be used to satisfy the requirement for two OPERABLE steam supplies. If the third steam supply is also inoperable (i.e., only one steam supply to the turbine-driven auxiliary feedwater pump is OPERABLE), then ACTION a. is entered.

If the turbine-driven auxiliary feedwater pump is inoperable due to one required steam supply being inoperable in MODES 1, 2, and 3, or if a turbine-driven auxiliary feedwater pump is inoperable while in MODE 3 immediately following REFUELING, action must be taken to restore the inoperable equipment to an OPERABLE status within 7 days. The 7 day allowed outage time is reasonable, based on the following reasons:

LBDCR No. 04-MP3-011
November 10, 2005

PLANT SYSTEMS

For Information Only - No Change

BASES

AUXILIARY FEEDWATER SYSTEM (Continued)

a. For the inoperability of the turbine-driven auxiliary feedwater pump due to one required steam supply to the turbine-driven auxiliary feedwater pump being inoperable (i.e., only one steam supply to the turbine-driven auxiliary feedwater pump is operable), the 7 day allowed outage time is reasonable since the auxiliary feedwater system design affords adequate redundancy for the steam supply line for the turbine-driven pump.

b. For the inoperability of a turbine-driven auxiliary feedwater pump while in MODE 3 immediately subsequent to a refueling, the 7 day allowed outage time is reasonable due to the minimal decay heat levels in this situation.

c. For both the inoperability of the turbine-driven auxiliary feedwater pump due to one required steam supply to the turbine-driven auxiliary feedwater pump being inoperable (i.e., only one steam supply to the turbine-driven auxiliary feedwater pump is operable), and an inoperable turbine-driven auxiliary feedwater pump while in MODE 3 immediately following a refueling outage, the 7 day allowed outage time is reasonable due to the availability of redundant OPERABLE motor driven auxiliary feedwater pumps, and due to the low probability of an event requiring the use of the turbine-driven auxiliary feedwater pump.

The required ACTION dictates that if either the 7 day allowed outage time is reached the unit must be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 12 hours.

The allowed time is reasonable, based on operating experience, to reach the required conditions from full power conditions in an orderly manner and without challenging plant systems.

A Note limits the applicability of the inoperable equipment condition b. to when the unit has not entered MODE 2 following a REFUELING. Required ACTION b. allows one auxiliary feedwater pump to be inoperable for 7 days vice the 72 hour allowed outage time in required ACTION c. This longer allowed outage time is based on the reduced decay heat following REFUELING and prior to the reactor being critical.

With one of the auxiliary feedwater pumps inoperable in MODE 1, 2, or 3 for reasons other than ACTION a. or b., ACTION must be taken to restore OPERABLE status within 72 hours. This includes the loss of three steam supply lines to the turbine-driven auxiliary feedwater pump. The 72 hour allowed outage time is reasonable, based on redundant capabilities afforded by the auxiliary feedwater system, time needed for repairs, and the low probability of a DBA occurring during this time period. Two auxiliary feedwater pumps and flow paths remain to supply feedwater to the steam generators.

~~LBDCR 12-MP3-010~~
~~September 20, 2012~~

PLANT SYSTEMS

BASES

AUXILIARY FEEDWATER SYSTEM (Continued)

If all three AFW pumps are inoperable in MODE 1, 2, or 3, the unit is in a seriously degraded condition with no safety related means for conducting a cooldown, and only limited means for conducting a cooldown with non safety related equipment. In such a condition, the unit should not be perturbed by any action, including a power change, that might result in a trip. The seriousness of this condition requires that action be started immediately to restore one AFW pump to OPERABLE status. Required ACTION e. is modified by a Note indicating that all required MODE changes or power reductions are suspended until one AFW pump is restored to OPERABLE status. In this case, LCO 3.0.3 is not applicable because it could force the unit into a less safe condition.

SR 4.7.1.2.1a. verifies the correct alignment for manual, power operated, and automatic valves in the auxiliary feedwater water and steam supply flow paths to provide assurance that the proper flow paths exist for auxiliary feedwater operation. This SR does not apply to valves that are locked, sealed, or otherwise secured in position, since these valves are verified to be in the correct position prior to locking, sealing, or securing. This SR also does not apply to valves that cannot be inadvertently misaligned, such as check valves. This Surveillance does not require any testing or valve manipulations; rather, it involves verification that those valves capable of potentially being mispositioned are in the correct position. The surveillance frequency is controlled under the Surveillance Frequency Control Program.

The SR is modified by a Note that states one or more auxiliary feedwater pumps may be considered OPERABLE during alignment and operation for steam generator level control, if it is capable of being manually (i.e., remotely or locally, as appropriate) realigned to the auxiliary feedwater mode of operation, provided it is not otherwise inoperable. This exception to pump OPERABILITY allows the pump(s) and associated valves to be out of their normal standby alignment and temporarily incapable of automatic initiation without declaring the pump(s) inoperable. Since auxiliary feedwater may be used during STARTUP, SHUTDOWN, HOT STANDBY operations, and HOT SHUTDOWN operations for steam generator level control, and these manual operations are an accepted function of the auxiliary feedwater system, OPERABILITY (i.e., the intended safety function) continues to be maintained.

Insert B - Page B 3/4 7-2c

Insert B - Page B 3/4 7-2c

Surveillance Requirement 4.7.1.2.1.b, which addresses periodic surveillance testing of the AFW pumps to detect gross degradation caused by impeller structural damage or other hydraulic component problems, is required by the ASME OM Code. This type of testing may be accomplished by measuring the pump developed head at only one point on the pump characteristic curve. This verifies both that the measured performance is within an acceptable tolerance of the original pumps baseline performance and that the performance at the test flow is greater than or equal to the performance assumed in the unit safety analysis. The surveillance requirements are specified in the Inservice Testing Program, which encompasses the ASME OM Code. The ASME OM Code provides the activities and frequencies necessary to satisfy the requirements.

This surveillance is modified by a note to indicate that the test can be deferred for the steam driven AFW pump until suitable plant conditions are established. This deferral is required because steam pressure is not sufficient to perform the test until after MODE 3 is entered. However, the test, if required, must be performed prior to entering MODE 2.

Surveillance Requirement 4.7.1.2.1.c demonstrates that each AFW pump starts on receipt of an actual or simulated actuation signal. The surveillance frequency is controlled under the Surveillance Frequency Control Program. The actuation logic is tested as part of the Engineered Safety Feature Actuation System (ESFAS) testing, and equipment performance is monitored as part of the Inservice Testing Program.

Surveillance Requirement 4.7.1.2.2 demonstrates the AFW System is properly aligned by verifying the flow path to each steam generator prior to entering MODE 2 after more than 30 days in any combination of MODE 5 or 6 or defueled. OPERABILITY of the AFW flow paths must be verified before sufficient core heat is generated that would require operation of the AFW System during a subsequent shutdown. To further ensure AFW System alignment, the OPERABILITY of the flow paths is verified following extended outages to determine that no misalignment of valves has occurred. The frequency is reasonable, based on engineering judgement, and other administrative controls to ensure the flow paths are OPERABLE.