NEXTera ENERGY POINT BEACH

August 24, 2010

NRC 2010-0129
10 CFR 50.90

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

Point Beach Nuclear Plant, Units 1 and 2
Dockets 50-266 and 50-301
Renewed License Nos. DPR-24 and DPR-27

License Amendment Request 261, Supplement 7
Extended Power Uprate

References: (1) FPL Energy Point Beach, LLC letter to NRC, dated April 7, 2009, License Amendment Request 261, Extended Power Uprate (ML091250564)
(2) NextEra Energy Point Beach, LLC letter to NRC, dated July 8, 2010, License Amendment Request 261, Supplement 5, Extended Power Uprate (ML101890785)

Pursuant to 10 CFR 50.90, NextEra Energy Point Beach, LLC (NextEra) hereby submits Supplement 7 to License Amendment Request (LAR) 261 (Reference 1) for Point Beach Nuclear Plant (PBNP) Units 1 and 2. This supplement provides revised proposed Technical Specification (TS) changes for the Auxiliary Feedwater (AFW) System TS 3.7.5 in response to a teleconference between NextEra personnel and NRC staff on August 2, 2010.

Enclosure 1 contains an evaluation of the proposed TS changes. The No Significant Hazards Consideration determination provided in Reference (2) is not altered by the additional information in this supplement. The proposed changes continue to satisfy the criteria of 10 CFR 51.22 for categorical exclusion from the requirements for an environmental assessment.

Enclosure 2 contains a markup of proposed TS changes. These changes replace proposed TS 3.7.5 changes previously submitted in References (1) and (2).

Enclosure 3 contains a markup of proposed TS Bases changes. These changes replace the TS Bases B 3.7.5 changes previously submitted in References (1) and (2). The TS Bases changes are provided for information only. NRC approval is not being requested for the TS Bases changes.

This letter contains no new regulatory commitments and no revisions to existing commitments.

The proposed TS changes have been reviewed by the Plant Operations Review Committee.

In accordance with 10 CFR 50.91, a copy of this letter is being provided to the designated Wisconsin Official.

I declare under penalty of perjury that the foregoing is true and correct.
Executed on August 24, 2010.

Very truly yours,

NextEra Energy Point Beach, LLC

Larry Meyer
Site Vice President

Enclosures

cc: Administrator, Region III, USNRC
Project Manager, Point Beach Nuclear Plant, USNRC
Resident Inspector, Point Beach Nuclear Plant, USNRC
PSCW

**ENCLOSURE 1**

**NEXTERA ENERGY POINT BEACH, LLC**
**POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2**

**LICENSE AMENDMENT REQUEST 261, SUPPLEMENT 7**
**EXTENDED POWER UPRATE**

**EVALUATION OF PROPOSED CHANGES TO**
**TECHNICAL SPECIFICATION 3.7.5, AUXILIARY FEEDWATER (AFW)**



12 pages follow

## 1.0 SUMMARY DESCRIPTION

In accordance with 10 CFR 50.90, "Application for amendment of license, construction permit, or early site permit," NextEra Energy Point Beach, LLC, (NextEra) submitted proposed changes to Technical Specifications (TS) for Point Beach Nuclear Plant (PBNP) Units 1 and 2, in support of License Amendment Request (LAR) 261 (Reference 1). In Supplement 5 to LAR 261 (Reference 20), NextEra provided revised TS changes for TS 3.7.5, Auxiliary Feedwater (AFW), based on responses to an NRC request for additional information (Reference 2). In a teleconference on August 2, 2010, with NRC staff and NextEra personnel, it was determined that additional changes were needed. This supplement replaces Supplement 5, Enclosures 2, 3 and 4 (Reference 20).

## 2.0 DETAILED DESCRIPTION

PBNP Units 1 and 2 are being modified to include a unitized motor-driven AFW (MDAFW) pump system. Details of the system are contained in Section 2.5.4.5, Auxiliary Feedwater, of LAR 261, Attachment 5 (Reference 1), as supplemented by References (3) through (20). The new MDAFW pump system for each unit will have increased flow capacity to ensure adequate margin is available for removal of decay heat from the core. The AFW system will be upgraded to install a new full-capacity unitized MDAFW pump on each unit and add AFW pump suction auto-switchover to safety-related service water upon loss of the condensate storage tank (CST) water source.

A detailed description of the associated proposed TS changes is provided below for each change. Proposed markups for TS 3.7.5 are provided in Enclosure 2. Additionally, markups for the Bases for Section 3.7.5 are provided in Enclosure 3 for NRC staff information.

### 2.1 Proposed Changes:

1. LCO 3.7.5

   Replace:
   "The AFW System shall be OPERABLE with; one turbine driven AFW pump system and two motor driven AFW pump systems:"

   With:
   "The AFW System shall be OPERABLE with; one turbine driven AFW pump system and one motor driven AFW pump system:"

   Basis for the change: PBNP Units 1 and 2 are being modified to include a unitized full-capacity MDAFW pump system. Each full-capacity MDAFW and full-capacity turbine-driven AFW (TDAFW) pump system will automatically start and deliver adequate flow to maintain steam generator (SG) levels during anticipated transients that result in a loss of the main feedwater system. As a result of the modification, the AFW system for each unit will consist of one full-capacity MDAFW pump system and one full-capacity TDAFW pump system.

2. LCO 3.7.5 Note

Replace:
"Only the motor driven AFW pump systems associated with steam generators relied upon for heat removal are required to be OPERABLE in MODE 4."

With:
"Only the motor driven AFW pump system is required to be OPERABLE in MODE 4."

Basis for the change: The Note is being revised to delete the requirement that the MDAFW pump system and its associated SG be OPERABLE, since the MDAFW pump system can be aligned to either or both SGs.

3. Condition A

Replace:
"One steam supply to turbine driven AFW pump system inoperable."

With:
"Turbine driven AFW pump system inoperable due to one inoperable steam supply.

OR

----------NOTE----------
Only applicable if MODE 2 has not been entered following refueling.
---
Turbine driven AFW pump system inoperable in MODE 3 following refueling."

Basis for the change: This change is consistent with Technical Specification Task Force (TSTF)-412, Revision 3 (Reference 23). The Note and Condition being added allow for a longer Completion Time due to the reduced decay heat following refueling.

4. Required Action A.1

Replace:
"Restore steam supply to OPERABLE status."

With:
"Restore affected equipment to OPERABLE status."

Basis for the change: The Required Action is changed to be consistent with the change in Condition A, which now addresses both an inoperable steam supply to the TDAFW pump system and an inoperable TDAFW pump system.

5. Condition B

Replace:
"One turbine driven AFW pump system inoperable in MODE 1, 2, or 3 for reasons other than Condition A."

With:
"One AFW pump system inoperable in MODE 1, 2, or 3 for reasons other than Condition A."

Basis for the change: The condition is changed to account for either the MDAFW pump system or the TDAWF pump system being inoperable in MODE 1, 2, or 3.

6. Required Action B.1

Replace:
"Restore turbine driven AFW pump system to OPERABLE status."

With:
"Restore AFW pump system to OPERABLE status."

Basis for the change: The required action is changed to be consistent with Condition B, which addresses both the MDAFW and TDAFW pump systems.

7. Condition C

Replace:
"One motor driven AFW pump system inoperable in MODE 1, 2, or 3."

With:
"Turbine driven AFW pump system inoperable due to one inoperable steam supply.

AND

Motor driven AFW pump system inoperable."

Basis for the change: The new Condition C is revised to address TSTF-412, Revision 3 (Reference 23). The new Condition C addresses the ability of the AFW system to mitigate the most limiting design basis events, excluding a single failure with an inoperable steam supply to a TDAFW pump system and an inoperable MDAFW pump system.

8. Required Action C.1

Replace:
"C.1 Restore motor driven AFW pump system to OPERABLE status."

With:
"C.1 Restore the steam supply to the turbine driven pump system to OPERABLE status.

OR

C.2 Restore the motor driven AFW pump system to OPERABLE status."

Basis for the change: The Required Action is consistent with Condition C to re-establish redundancy by restoring either the inoperable steam supply to the TDAFW pump system to OPERABLE or restore the MDAFW pump system to OPERABLE status.

9. Completion Time for Required Action C.1 and new Required Action C.2

Replace:
"7 days

AND

10 days from Discovery of Failure to meet the LCO"

With:
"24 hours

OR

48 hours if motor driven AFW pump system is available from the opposite unit"

Basis for the change: The new Completion Time is consistent with TSTF-412, Revision 3 (Reference 23). Although the Completion Time stated in TSTF-412 is not directly applicable to two-loop pressurized water reactors, PBNP is atypical in that the MDAFW pump systems for each unit can be cross-tied to feed the SGs on the opposite unit. As such, the 48 hour Completion Time with the MDAFW pump system available on the opposite unit is appropriate.

10. Condition D

Replace:
"Required Action and associated Completion Time of Condition A, B, or C not met.

OR

Two AFW pump systems inoperable in MODE 1, 2, or 3."

With:
"Required Action and associated Completion Time of Condition A, B, or C not met."

Basis for the change: Condition D is revised to delete the Condition of two AFW pump systems, since the modified AFW system consists of only two pump systems (MDAFW and TDAFW pump systems) per unit. Loss of both AFW pump systems is covered by Condition E.

11. Required Action D.1

Replace:
"----------NOTE----------
Each unit may be sequentially placed in MODE 3 within 12 hours when both units are in Condition C concurrently.
---

Be in MODE 3."

With:
"Be in MODE 3.

AND"

Basis for the change: This Note is no longer applicable to the unitized AFW system.

12. Required Action D.2

Replace:
"----------NOTE----------
Entry into MODE 4 is not required unless one motor driven AFW pump system is OPERABLE.
---

Be in MODE 4."

With:
"Be in MODE 4."

Basis for the change: This change is consistent with TSTF-412, Revision 3 (Reference 23) and Condition C of NUREG-1431 (Reference 22), which do not allow the exception from entering MODE 4 when in Condition D.

13. Condition E

Replace:
"Three AFW pump systems inoperable in MODE 1, 2, or 3."

With:
"Two AFW pump systems inoperable in MODE 1, 2, or 3."

Basis for the change: The modified AFW system consists of only two AFW pump systems per unit.

14. Condition F

Replace:
"One or more required AFW pump systems inoperable in MODE 4."

With:
"Motor driven AFW pump system inoperable in MODE 4."

Basis for the change: There is only one MDAFW pump system per unit.

15. Required Action F.1

Replace:
"Initiate action to restore AFW pump system(s) to OPERABLE status."

With:
"Initiate action to restore motor driven AFW pump system to OPERABLE status."

Basis for the change: This is consistent with Condition F in that there is only one MDAFW pump system per unit.

## 3.0 TECHNICAL EVALUATION

PBNP Units 1 and 2 are being modified to include a unitized MDAFW pump system. Details of the system are contained in Section 2.5.4.5, Auxiliary Feedwater, of LAR 261, Attachment 5 (Reference 1), as supplemented by References (3) through (20). New MDAFW pump systems are being installed to increase the capability of the AFW system. The safety-related portions of each unit-specific AFW system are designed as Seismic Class I, and are capable of withstanding design basis earthquake accelerations without a loss of system performance capability.

Each new unit-specific MDAFW pump system and current TDAFW pump system are designed such that a single active failure will not disable more than one MDAFW or TDAFW pump system in each unit. Each of the MDAFW and TDAFW pump systems in each unit has some shared discharge piping with independent instrumentation and controls necessary for operation. The unit-specific MDAFW pump systems share a CST suction header. The unit-specific TDAFW pump systems share a second CST suction header. Each AFW pump suction will automatically transfer from the non-safety related CST to safety-related service water on low suction pressure, reducing required operator actions.

Each MDAFW and TDAFW pump system will automatically start and deliver adequate AFW flow to maintain adequate SG levels during anticipated plant transients that result in a loss of the main feedwater system. These transients include loss of normal feedwater (LONF) and loss of non-vital AC power (LOAC) events. The limiting transient with respect to AFW is a LONF without a concurrent LOAC, since the reactor is not immediately tripped, continuing to add 100% power to the reactor coolant, until a low-low SG level reactor trip occurs. Redundancy is provided by full-capacity MDAFW and full-capacity TDAFW pump systems using different power sources. The design capacity of each pump system ensures that on the limiting LONF event, with a failure of one AFW system, adequate RCS heat removal will be maintained to prevent the pressurizer from going water solid.

The unit-specific MDAFW pump systems eliminate the current manual operator action on dual unit AFW actuations (e.g., LOAC) to balance the MDAFW pump flows between the units. The AFW pump systems will automatically start and deliver sufficient AFW flow to maintain adequate SG levels for other accidents such as the steam generator tube rupture (SGTR) and main steam line break (MSLB). Although operator action is required to isolate the AFW lines to a faulted SG following a MSLB, the addition of flow control valves on the individual MDAFW pump SG discharge headers automatically decreases the maximum flow to the faulted SG, while increasing the flow to the non-faulted SG relative to the pre-EPU system configuration.

Condition C of TS 3.7.5 is being revised to address TSTF-412, Revision 3 (Reference 23), which provides actions when one steam supply to a TDAFW pump is inoperable. The proposed Condition C addresses the ability of the AFW system to mitigate the most limiting design basis events, excluding a single failure, with one inoperable steam supply to the TDAFW pump system and an inoperable MDAFW pump system. The proposed Completion Time of 48 hours is appropriate if the full-capacity MDAFW pump system from the opposite unit is available to meet the required design basis AFW flow. If the full-capacity MDAFW pump system from the opposite unit is not available, the proposed Completion Time of 24 hours is appropriate.

## 4.0 REGULATORY EVALUATION

### 4.1 Applicable Regulatory Requirements/Criteria

NextEra submitted LAR 261 (Reference 1) to the NRC pursuant to 10 CFR 50.90. The proposed license amendment would increase each unit's licensed thermal power level from 1540 megawatts thermal (MWt) to 1800 MWt, and revise the Technical Specifications to support operation at the increased thermal power level. NextEra has determined that the proposed TS changes do not require any exemptions or relief from regulatory requirements and do not affect conformance with any GDC differently than described in the PBNP Final Safety Analysis Report (FSAR).

PBNP was licensed prior to the 1971 publication of 10 CFR 50 Appendix A, General Design Criteria for Nuclear Power Plants (GDC) (ML003674718). As such, PBNP is not licensed to Appendix A GDCs. PBNP FSAR Section 1.3 lists the plant-specific GDCs to which the plant was licensed. The PBNP GDCs are similar in content to the draft GDCs proposed for public comment in 1967. The following discussion addresses the proposed change with respect to meeting the requirements of the applicable draft design criteria to which PBNP is licensed.

PBNP GDC 1 - Quality Standards. Those systems and components of reactor facilities that are essential to the prevention, or the mitigation of the consequences, of nuclear accidents that could cause undue risk to the health and safety of the public shall be identified and then designed, fabricated, and erected to quality standards that reflect the importance of the safety function to be performed. Where generally recognized codes and standards pertaining to design, materials, fabrication, and inspection are used, they shall be identified. Where adherence to such codes or standards does not suffice to assure a quality product in keeping with the safety function, they shall be supplemented or modified as necessary. Quality assurance programs, test procedures, and inspection acceptance criteria to be used shall be identified. An indication of the applicability of codes, standards, quality assurance programs, test procedures, and inspection acceptance criteria used is required. Where such items are not covered by applicable codes and standards, a showing of adequacy is required.

PBNP GDC 2 - Performance Standards. Those systems and components of reactor facilities which are essential to the prevention or to the mitigation of the consequences of nuclear accidents which could cause undue risk to the health and safety of the public shall be designed, fabricated, and erected to performance standards that enable such systems and components to withstand, without undue risk to the health and safety of the public, the forces that might reasonably be imposed by the occurrence of an extraordinary natural phenomenon such as earthquake, tornado, flooding condition, high wind, or heavy ice. The design bases so established shall reflect: (a) appropriate consideration of the most severe of these natural phenomena that have been officially recorded for the site and the surrounding area and (b) an appropriate margin for withstanding forces greater than those recorded to reflect uncertainties about the historical data and their suitability as a basis for design.

PBNP GDC 4 - Sharing of Systems. Reactor facilities may share systems or components if it can be shown that such sharing will not result in undue risk to the health and safety of the public.

PBNP GDC 11 - Control Room. The facility shall be provided with a control room from which actions to maintain safe operational status of the plant can be controlled. Adequate radiation protection shall be provided to permit continuous occupancy of the control room under any credible post-accident condition or as an alternative, access to other areas of the facility as necessary to shut down and maintain safe control of the facility without excessive radiation exposures of personnel.

PBNP GDC 12 - Instrumentation and Control Systems. Instrumentation and controls shall be provided as required to monitor and maintain within prescribed operating ranges essential reactor facility operating variables.

PBNP GDC 37 - Engineered Safety Features Basis for Design. Engineered safety features shall be provided in the facility to back up the safety provided by the core design, the reactor coolant pressure boundary, and their protection systems. Such engineered safety features shall be designed to cope with any size reactor coolant piping break up to and including the equivalent of a circumferential rupture of any pipe in that boundary, assuming unobstructed discharge from both ends.

PBNP GDC 38 - Reliability and Testability of Engineered Safety Features. All engineered safety features shall be designed to provide such functional reliability and ready testability as is necessary to avoid undue risk to the health and safety of the public.

PBNP GDC 40 - Missile Protection. Adequate protection for those engineered safety features, the failures of which could cause an undue risk to the health and safety of the public, shall be provided against dynamic effects and missiles that might result from plant equipment failures other than a rupture of the Reactor Coolant System piping. An original design basis for protection of equipment against the dynamic effects of a rupture of the Reactor Coolant System piping is no longer applicable.

PBNP GDC 41 - Engineered Safety Features Performance Capability. Engineered safety features, such as the emergency core cooling system and the containment heat removal system, shall provide sufficient performance capability to accommodate the failure of any single active component without resulting in undue risk to the health and safety of the public.

PBNP GDC 42 - Engineered Safety Features Components Capability. Engineered safety features shall be designed so that the capability of these features to perform their required function is not impaired by the effects of a loss-of-coolant accident to the extent of causing undue risk to the health and safety of the public.

## 4.2 Precedent

Proposed changes to TS 3.7.5 reflect the new unit-specific MDAFW pump system design. The changes to TS 3.7.5 are generally consistent with TS 3.7.5, Auxiliary Feedwater (AFW) System, contained in NUREG-1431, Standard Technical Specifications, Westinghouse Plants, Revision 3 (Reference 22), as modified by TSTF-412, Revision 3 (Reference 23). Deviations were made due to differences in how PBNP is configured versus the configuration assumed in NUREG-1431 and TSTF-412. The terminology "pump systems" contained in the existing PBNP TS has been retained, rather than adopting the term "train" when referring to the new pumps. During the conversion from PBNP Custom TS to Improved TS, Justification for Deviation (JFD-01) was submitted to the Commission for review in this regard. The rationale for use of the term "pump systems" versus "trains" was that "pump systems" is a more accurate

description of the PBNP AFW system, since the flow paths associated with the AFW pumps are not associated with a specific engineered safety feature safety train. "Pump systems" and "trains" both represent the valves and piping that support the ability of an AFW pump to provide the required accident analysis flow rates. Pump systems more aptly describe the AFW system at two-loop pressurized water reactor plants. The Commission approved this JFD, as documented in the safety evaluation approving the PBNP Improved TS (ML012250504).

Additionally, on July 11, 2007, the NRC published a model safety evaluation for LARs based on TSTF-412, which provides actions for one steam supply to TDAFW pump inoperable (ML071230105) (Reference 21). The proposed changes for PBNP TS are generally consistent with TSTF-412, Revision 3 (Reference 23). As noted above, deviations were necessary to reflect plant configuration. Additionally, the PBNP TS currently do not reflect TSTF-439, "Eliminate Second Completion Times Limiting Time from Discovery of Failure to Meet an LCO," Revision 2 (Reference 24), which is reflected in TSTF-412. Therefore, the Completion Times for TS 3.7.5 Condition A and Condition B shown in the proposed TS markups retain the current PBNP TS second completion times of ten days.

### 4.3 Significant Hazards Consideration

The No Significant Hazards Consideration determination provided in Reference 20, which provided proposed changes to TS 3.7.5 for the AFW system, is not altered by the additional information in this supplement.

### 4.4 Conclusions

In conclusion, 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. The Plant Operations Review Committee has reviewed the proposed changes and concurs with this conclusion.

## 5.0 ENVIRONMENTAL CONSIDERATION

A review has determined that 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) FPL Energy Point Beach, LLC letter to NRC, dated April 7, 2009, License Amendment Request 261, Extended Power Uprate (ML091250564)

(2) NRC electronic mail to NextEra Energy Point Beach, LLC, dated May 19, 2010, Draft – Request for Additional Information Re: AFW (ML101410232)

(3) NextEra Energy Point Beach, LLC, letter to NRC, dated June 17, 2009, License Amendment Request 261, Supplement 1, Extended Power Uprate (ML091690090)

(4) NextEra Energy Point Beach, LLC letter to NRC, dated June 17, 2009, License Amendment Request 261, Supplement 2, Extended Power Uprate (ML091690087)

(5) NextEra Energy Point Beach, LLC letter to NRC, dated September 11, 2009, License Amendment Request 261, Extended Power Uprate, Expedited Review Request (ML092570205)

(6) NextEra Energy Point Beach, LLC letter to NRC, dated September 25, 2009, License Amendment Request 261, Extended Power Uprate, Response to Request for Additional Information (ML092750395)

(7) NextEra Energy Point Beach, LLC letter to NRC, dated October 9, 2009, License Amendment Request 261, Extended Power Uprate, Response to Acceptance Review Questions (ML092860098)

(8) NextEra Energy Point Beach, LLC letter to NRC, dated November 20, 2009, License Amendment Request 261, Extended Power Uprate, Response to Request for Additional Information (ML093270030)

(9) NextEra Energy Point Beach, LLC letter to NRC, dated November 20, 2009, License Amendment Request 261, Extended Power Uprate, Response to Request for Additional Information (ML093270079)

(10) NextEra Energy Point Beach, LLC letter to NRC, dated November 21, 2009, License Amendment Request 261, Extended Power Uprate, Response to Request for Additional Information (ML093270032)

(11) NextEra Energy Point Beach, LLC letter to NRC, dated November 21, 2009, License Amendment Request 261, Extended Power Uprate, Response to Request for Additional Information (ML093270035)

(12) NextEra Energy Point Beach, LLC letter to NRC, dated January 7, 2010, License Amendment Request 261, Extended Power Uprate, Clarification of Response to Request for Additional Information (ML100080013)

(13) NextEra Energy Point Beach, LLC letter to NRC, dated January 8, 2010, License Amendment Request 261, Extended Power Uprate, Auxiliary Feedwater System Pipe Stress Analysis Information (ML100110037)

(14) NextEra Energy Point Beach, LLC letter to NRC, dated January 13, 2010, License Amendment Request 261, Extended Power Uprate, Response to Request for Additional Information (ML100140163)

(15) NextEra Energy Point Beach, LLC letter to NRC, dated January 22, 2010, License Amendment Request 261, Extended Power Uprate, Response to Request for Additional Information (ML100250011)

(16) NextEra Energy Point Beach, LLC letter to NRC, dated February 11, 2010, License Amendment Request 261, Extended Power Uprate, Withdrawal of Expedited Review Request (ML100470786)

(17) NextEra Energy Point Beach, LLC letter to NRC, dated March 3, 2010, License Amendment Request 261, Extended Power Uprate, Response to Request for Additional Information (ML100630133)

(18) NextEra Energy Point Beach, LLC letter to NRC, dated April 15, 2010, License Amendment Request 261, Supplement 4, Extended Power Uprate (ML101050357)

(19) NextEra Energy Point Beach, LLC letter to NRC, dated April 22, 2010, License Amendment Request 261, Extended Power Uprate, Implementation of New Auxiliary Feedwater System at Current Licensed Power Level (ML101130030)

(20) NextEra Energy Point Beach, LLC letter to NRC, dated July 8, 2010, License Amendment Request 261, Supplement 5, Extended Power Uprate (ML101890785)

(21) Nuclear Regulatory Commission, Notice of Availability of Model Application Concerning Technical Specifications Task Force (TSTF) traveler to Provide Actions for One Steam Supply to Turbine Driven AFW/EFW Inoperable Using the Consolidated Line Item Improvement Process, dated July 11, 2007 (ML071230105)

(22) NUREG-1431, Revision 3, dated June 30, 2004, Standard Technical Specifications Westinghouse Plants June 2004 (ML041830612 and ML041830205)

(23) TSTF-412, Revision 3, "Provide Actions for One Steam Supply to Turbine Driven AFW/EFW Pump Inoperable," (ML070100363)

(24) TSTF-439, Revision 2, "Eliminate Second Completion Times Limiting Time from Discovery of Failure to Meet an LCO" (ML051860296)

**ENCLOSURE 2**

**NEXTERA ENERGY POINT BEACH, LLC**
**POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2**

**LICENSE AMENDMENT REQUEST 261 SUPPLEMENT 7**
**EXTENDED POWER UPRATE**

**PROPOSED TECHNICAL SPECIFICATION 3.7.5 CHANGES**

3 pages follow

3.7 PLANT SYSTEMS

3.7.5 Auxiliary Feedwater (AFW)

LCO 3.7.5 The AFW System shall be OPERABLE with; one turbine driven AFW pump system and ~~two~~ one motor driven AFW pump system~~s~~:

---NOTE---
Only the motor driven AFW pump system~~s associated with steam generators relied upon for heat removal are~~ is required to be OPERABLE in MODE 4.
---

APPLICABILITY: MODES 1, 2, and 3,
MODE 4 when steam generator is relied upon for heat removal.

ACTIONS

---NOTE---
LCO 3.0.4.b is not applicable.
---

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|---|---|
| A. ~~One steam supply to turbine driven AFW pump system inoperable.~~ Turbine driven AFW pump system inoperable due to one inoperable steam supply.<br><br>OR<br><br>---NOTE---<br>Only applicable if MODE 2 has not been entered following refueling.<br>---<br>Turbine driven AFW pump system inoperable in MODE 3 following refueling. | A.1 Restore ~~steam supply~~ affected equipment to OPERABLE status. | 7 days<br><br>AND<br><br>10 days from Discovery of Failure to meet the LCO |
| B. One ~~turbine driven~~ AFW pump system inoperable in MODE 1, 2, or 3 for reasons other than Condition A. | B.1 Restore ~~turbine driven~~ AFW pump system to OPERABLE status. | 72 hours<br><br>AND<br><br>10 days from Discovery of Failure to meet the LCO |

(continued)

ACTIONS (continued)

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|---|---|
| C. ~~One motor driven AFW pump system inoperable in MODE 1, 2, or 3~~ Turbine driven AFW pump system inoperable due to one inoperable steam supply.<br><br>AND<br><br>Motor driven AFW pump system inoperable. | C.1 ~~Restore motor driven AFW pump system to OPERABLE status~~ Restore the steam supply to the turbine driven pump system to OPERABLE status.<br><br>OR<br><br>C.2 Restore the motor driven AFW pump system to OPERABLE status. | ~~7 days~~<br><br>AND<br><br>~~10 days from Discovery of Failure to meet the LCO~~<br><br>24 hours<br><br>OR<br><br>48 hours if motor driven AFW pump system is available from the opposite unit |
| D. Required Action and associated Completion Time of Condition A, B, or C not met.<br><br>~~OR~~<br><br>~~Two AFW pump systems inoperable in MODE 1, 2, or 3.~~ | D.1 ~~---------NOTE---------~~<br>~~Each unit may be sequentially placed in MODE 3 within 12 hours when both units are in Condition C concurrently.~~<br>~~----------~~<br>Be in MODE 3.<br><br>AND<br><br>D.2 ~~---------NOTE---------~~<br>~~Entry into MODE 4 is not required unless one motor driven AFW pump is OPERABLE.~~<br>~~----------~~<br>Be in MODE 4. | 6 hours<br><br>18 hours |

(continued)

ACTIONS (continued)

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|---|---|
| E. ~~Three~~ Two AFW pump systems inoperable in MODE 1, 2, or 3. | E.1 ----------NOTE----------<br>LCO 3.0.3 and all other LCO Required Actions requiring MODE changes are suspended until one AFW pump system is restored to OPERABLE status..<br>----------<br>Initiate action to restore AFW pump system to OPERABLE status. | Immediately |
| F. ~~One or more required~~ Motor driven AFW pump system~~s~~ inoperable in MODE 4. | F.1 Initiate action to restore motor driven AFW pump system~~(s)~~ to OPERABLE status. | Immediately |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|---|---|---|
| SR 3.7.5.1 | ----------NOTE----------<br>AFW pump system(s) may be considered OPERABLE during alignment and operation for steam generator level control, if it is capable of being manually realigned to the AFW mode of operation.<br>----------<br>Verify each AFW manual, power operated, and automatic valve in each water flow path, and in both steam supply flow paths to the steam turbine driven pump, that is not locked, sealed or otherwise secured in position, is in the correct position. | 31 days |

(continued)

**ENCLOSURE 3**

**NEXTERA ENERGY POINT BEACH, LLC**
**POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2**

**LICENSE AMENDMENT REQUEST 261, SUPPLEMENT 7**
**EXTENDED POWER UPRATE**

**PROPOSED TECHNICAL SPECIFICATION 3.7.5 BASES CHANGES**

**(FOR INFORMATION ONLY)**

15 pages follow

B 3.7 PLANT SYSTEMS

B 3.7.5 Auxiliary Feedwater (AFW) System

BASES

BACKGROUND

The AFW System automatically supplies feedwater to the steam generators to remove decay heat from the Reactor Coolant System upon the loss of normal feedwater supply. The AFW pumps provide cooling water to the steam generator secondary side via connections to the main feedwater (MFW) piping inside containment. The steam generators function as a heat sink for core decay heat. The heat load is dissipated by releasing steam to the atmosphere from the steam generators via the main steam safety valves (MSSVs) (LCO 3.7.1) or atmospheric dump valves (LCO 3.7.4). If the main condenser is available, steam may be released via the steam bypass valves and recirculated to the CST.

The AFW System consists of ~~three~~ two independent pump systems; ~~two~~ one motor driven AFW pump~~s which are shared between the two units~~, and one ~~dedicated~~ steam turbine driven pump per unit. ~~Each~~ The motor driven and turbine driven pumps are ~~pump is~~ capable of providing 100% of the design AFW flow rate assumed in the accident analysis~~, while the turbine driven pump is capable of providing 200% of the design flowrate~~. Each pump is provided with a recirculation line to maintain pump discharge flow above the minimum required flow rate for pump cooling. ~~Each AFW pump system can be manually aligned to take suction from the service water system.~~ The normal source of water to the AFW pumps is the Condensate Storage Tank (CST) and the safety related supply is the Service Water (SW) System. The pump suctions are automatically transferred to the service water system if the AFW low suction pressure setpoint is reached. CST low level alarms alert personnel that the AFW pump suction supply must be monitored and transferred to the service water system before the low suction pressure setpoint is reached. Motor operated valves are provided to allow the suction supply for the AFW pumps to be ~~manually~~ automatically transferred to the SW system. For an AFW pump system to be considered OPERABLE, its associated service water suction supply valve must be operable. ~~CST low level alarms and AFW pump low suction pressure alarms and trips are provided to alert personnel that the AFW pump suction supply must be manually swapped.~~

~~Each motor driven AFW pump is powered from an independent safeguards power supply and feeds one steam generator in each unit. AFW pump P-38A supplies AFW flow to the Unit 1 and Unit 2 A steam generators, while AFW pump P-38B supplies the Unit 1 and Unit 2 B steam generators. Each motor driven AFW pump's discharge header contains to normally closed automatic motor operated valves. Upon~~

BASES

~~receipt of an AFW actuation signal, the discharge valve associated with the affected unit receives an automatic open signal and the discharge valve associated with the unaffected unit receives an automatic close signal. This feature will ensure that 100% of the motor driven AFW pump flow will be delivered to the affected unit, thereby assuring that~~

BASES

BACKGROUND (continued)

~~the accident analysis flow rates are met. Each motor driven AFW pump is also equipped with a back pressure control valve, which is designed to preclude the motor driven AFW pump from tripping on an overcurrent condition at low steam generator pressures.~~

Although the AFW system is capable of supplying feedwater to the steam generators during non-emergency conditions, its primary function is to allow safe shutdown following an accident or plant trip. The AFW motor driven AFW pump system is powered from safeguards power. The pump's discharge header splits into two branch lines to the unit's two steam generators. The flow control valves on the branch lines are set so each steam generator is provided with approximately one-half of the unit's total required flow. This feature precludes the motor driven AFW pump from tripping on an overcurrent condition at low steam generator pressure.

The motor driven AFW pump system~~s~~ actuate~~s~~ automatically on steam generator water level (low-low) in either steam generator and upon receipt of a safety injection (SI) signal. If offsite power is available, the motor driven AFW pump system~~s~~ actuate~~s~~ ~~immediately.~~ If offsite power is not available, the safeguards buses shed their normal operating loads and are connected to the emergency diesel generators (EDGs). The motor driven AFW pump system~~s~~ ~~are~~ is then actuated per ~~their~~ its programmed time sequence. While not credited in any DBA analysis, the motor driven AFW pump system~~s~~ also actuate~~s~~ on; under voltage on both main feedwater pump buses ~~a trip of all MFW pumps~~, and by the Anticipated Transient Without Scram Mitigating System Actuation Circuit.

Each unit's turbine driven AFW pump receives steam from both steam generator main steam lines upstream of the main steam isolation valves. Each of the two steam ~~feed~~ supply lines can supply 100% of the required steam flow to the turbine driven AFW pump. Both steam supply lines must be OPERABLE to consider ~~the turbine driven~~ AFW system fully ~~pump~~ OPERABLE. All power-operated valves associated with the turbine driven AFW pump system are DC-powered~~, with the exception of the service water suction supply valve (Unit 1 and Unit 2 AF-4006) which is powered from a 480 Volt AC safeguards bus~~.

The turbine driven AFW pump system actuates automatically on a steam generator water level (low-low) in ~~both~~ either steam generator~~s~~. While not credited in any DBA analysis, the turbine driven AFW pump system also actuates on; ~~a trip of all MFW pumps~~, undervoltage on both main feedwater pump buses, and by the Anticipated Transient Without Scram Mitigating System Actuation Circuit.

BASES

~~The AFW system is capable of supplying feedwater to the steam generators during normal unit startup, shutdown, and hot standby conditions.~~

~~One pump~~ Either of the pumps at full flow is sufficient to remove decay heat and cool the unit to residual heat removal (RHR) entry conditions. Thus, the requirement for diversity in motive power sources for the AFW System is met.

The AFW System is designed to supply sufficient water to the steam generator(s) to remove decay heat with steam generator pressure at the setpoint of the MSSVs. Subsequently, the AFW System supplies

BASES

BACKGROUND (continued)

sufficient water to cool the unit to RHR entry conditions, with steam released through the ADVs.

The AFW System is discussed in the FSAR, Section 10.2 (Ref. 1).

APPLICABLE SAFETY ANALYSES

The AFW System mitigates the consequences of any event with loss of normal feedwater.

The design basis of the AFW System is to supply water to the steam generator to remove decay heat and other residual heat by delivering at least the minimum required flow rate to the steam generators at pressures in excess of the steam generator safety valve set pressure.

In addition, the AFW System must supply enough makeup water to replace steam generator secondary inventory lost as the unit cools to MODE 4 conditions.

The AFW system is assumed to function in the mitigation of Design Basis Accidents (DBAs) and transients ~~to~~ that include; Steam Generator Tube Rupture (SGTR), main steam line break, loss of normal feedwater, and loss of all AC power to the station auxiliaries. The AFW system must be capable of isolating AFW to the ruptured steam generator following a SGTR in addition to isolating the steam supply to turbine driven AFW pump associated with the ruptured steam generator. Although the AFW System will be initiated during the Small Break LOCA, the event has been analyzed with no credit for AFW. The Small Break LOCA was analyzed without AFW to be conservative and to limit the modeling required to address all possible combinations and time delays for various AFW system configurations.

The ESFAS automatically actuates the AFW ~~turbine driven~~ pumps and associated power operated valves and controls when required to ensure an adequate feedwater supply to the steam generators ~~during loss of power. DC power operated valves are provided for each AFW line to control the AFW flow to each steam generator~~.

A safety function determination program (SFDP) review per TS 3.0.6 and TS 5.5.14 must be performed for the supported function of Containment Operability if a motor driven AFW (MDAFW) pump discharge valve is inoperable: The review must consider the Operability of Containment Spray and Containment Fan Coolers per the requirements of TS 3.6.6.

The AFW system satisfies the requirements of Criterion 3 of ~~the NRC Policy Statement~~ 10 CFR 50.36(c)2(ii).

BASES

LCO

This LCO provides assurance that the AFW System will perform its design safety function to mitigate the consequences of Design Basis Accidents and transients. ~~Three~~ Two AFW pump systems, consisting of ~~two shared~~ one motor driven pump system~~s~~ and one ~~dedicated~~ turbine driven pump system are required to be OPERABLE to ensure the availability of RHR capability for all events accompanied by a loss of offsite power and a single failure. ~~This is accomplished by powering two of the pumps from independent emergency buses. The third AFW pump is powered by a different means, a steam driven turbine supplied with steam from a source that is not isolated by closure of the MSIVs.~~ This is accomplished by powering the motor driven pump from an emergency AC bus. The other AFW pump system does not rely on AC power. It relies on a steam turbine driven pump with a steam source that is not isolated by closure of the MSIVs and valves powered from DC sources.

The AFW System is configured into ~~three~~ two pump systems. The AFW System is considered OPERABLE when the components and flow paths required to provide redundant AFW flow to the steam generators are OPERABLE, and the components required to ~~manually~~ automatically transfer AFW pump suction supply to the service water system are OPERABLE. This requires that the ~~two~~ motor driven AFW pump~~s~~ be OPERABLE, ~~each~~ and capable of supplying AFW to both steam generators~~to a separate steam generator~~. The turbine driven AFW pump is required to be OPERABLE with redundant steam supplies from each main steam line upstream of the MSIVs, and shall be capable of supplying AFW to both ~~of the~~ steam generators. The piping, valves, instrumentation, and controls in the required flow paths also are required to be OPERABLE. For an AFW pump system to be considered OPERABLE, a minimum recirculation flow path must be available, and the backup pneumatic supply for the minimum recirculation air-operated valve must be OPERABLE.

The LCO is modified by a Note indicating that only the motor driven AFW pump~~s which are associated with steam generators required to be operable for heat removal (per LCO 3.4.6) are~~ system is required to be OPERABLE in MODE 4. This is because of the reduced heat removal requirements and short period of time in MODE 4 during which the AFW is required and the insufficient steam available in MODE 4 to power the turbine driven AFW pump.

APPLICABILITY

In MODES 1, 2, and 3, the AFW System is required to be OPERABLE in the event that it is called upon to function when the MFW is lost. In addition, the AFW System is required to supply enough makeup water to replace the steam generator secondary inventory, lost as the unit cools to MODE 4 conditions.

BASES

In MODE 4 the AFW System may be used for heat removal via the steam generators.

In MODE 5 or 6, the steam generators are not normally used for heat removal, and the AFW System is not required.

BASES

ACTIONS

A Note prohibits the application of LCO 3.0.4.b to an inoperable AFW pump system. There is an increased risk associated with entering a MODE or other specified condition in the Applicability with an AFW pump system inoperable and the provisions of LCO 3.0.4.b, which allow entry into a MODE or other specified condition in the Applicability with the LCO not met after a performance of a risk assessment addressing inoperable systems and components, should not be applied in this circumstance.

A.1

~~If one of the two steam supplies to the turbine driven AFW pump system is inoperable, action must be taken to restore the inoperable steam supply to OPERABLE status within 7 days. The 7 day Completion Time is reasonable, based on the following reasons:~~

~~a. The redundant OPERABLE steam supply to the turbine driven AFW pump;~~

~~b. The availability of redundant OPERABLE motor driven AFW pumps; and~~

~~c. The low probability of an event occurring that requires the inoperable steam supply to the turbine driven AFW pump.~~

With the turbine driven AFW pump system inoperable due to one inoperable steam supply, or if the turbine driven pump is inoperable for any reason 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 Completion Time is reasonable, based on the following reasons:

a. For the inoperability of the turbine driven AFW pump due to one inoperable steam supply, the 7 day Completion Time is reasonable since there is a redundant steam supply to the turbine driven AFW pump and the turbine driven pump system is still capable of performing its specified safety function for most postulated events.

b. For inoperability of a turbine driven pump while in MODE 3 immediately subsequent to a refueling, the 7 day Completion Time is reasonable due to the minimal decay heat in this situation.

c. For both the inoperability of the turbine driven pump due to one inoperable steam supply and an inoperable turbine driven AFW pump while in MODE 3 immediately following a refueling outage, the 7 day Completion Time is reasonable due to the availability of

BASES

a redundant OPERABLE AFW pump, and due to the low probability of an event requiring the use of the inoperable turbine driven AFW pump.

BASES

The second Completion Time for Required Action A.1 establishes a limit on the maximum time allowed for any combination of Conditions to be inoperable during any continuous failure to meet this LCO.

The 10 day Completion Time provides a limitation time allowed in this specified Condition after discovery of failure to meet the LCO. This limit is considered reasonable for situations in which multiple Conditions are entered concurrently. The AND connector between 7 days and 10 days dictates that both Completion Times apply simultaneously, and the more restrictive must be met.

Condition A is modified by a Note which limits the applicability of the Condition for an inoperable turbine driven AFW pump in MODE 3 to when the unit has not entered MODE 2 following a refueling. Condition A allows one AFW train to be inoperable for 7 days vice the 72 hour Completion Time in Condition B. This longer Completion Time is based on the reduced decay heat following refueling and prior to the reactor being critical.

B.1

~~With the turbine driven~~ When one of the required AFW pump systems ~~(e.g., pump, flow path, or turbine)~~ is inoperable in MODE 1, 2, or 3, for reasons other than Condition A, action must be taken to restore the pump system to OPERABLE status within 72 hours. This Condition includes loss of two steam supply lines to the turbine driven AFW pump. The 72 hour Completion Time is reasonable, based on redundant capabilities afforded by the remaining OPERABLE ~~motor driven~~ AFW pump system~~s~~, time needed for repairs, and the low probability of a DBA occurring during this time period.

BASES

ACTIONS (continued) The second Completion Time for Required Action B.1 establishes a limit on the maximum time allowed for any combination of Conditions to be inoperable during any continuous failure to meet this LCO.

The 10 day Completion Time provides a limitation on the time allowed in this specified Condition after discovery of failure to meet the LCO. This limit is considered reasonable for situations in which multiple Conditions are entered simultaneously. The AND connector between the 72 hour and 10 day Completion Times dictates that both Completion Times apply simultaneously, and the more restrictive must be met.

C.1

~~With one of the motor driven AFW pump systems (e.g., pump or flow path) inoperable in MODE 1, 2, or 3, action must be taken to restore the pump system OPERABLE status within 7 day. The 7 day Completion Time is reasonable, based on redundant capabilities afforded by the remaining OPERABLE motor driven and turbine driven AFW pump systems, time needed for repairs, and the low probability of a DBA occurring during this time period.~~

~~The second Completion Time required by Action C.1 establishes a limit on the maximum time allowed for any combination of Conditions to be inoperable during any continuous failure to meet this LCO.~~

~~The 10 day Completion Time provides a limitation on the time allowed in this specified Condition after discovery of failure to meet the LCO. This limit is considered reasonable for situations in which multiple Conditions are entered simultaneously. The AND connector between the 7 day and 10 day Completion Times dictates that both Completion Times apply simultaneously, and the more restrictive must be met.~~

With the turbine driven AFW pump system inoperable due to one inoperable steam supply and the motor driven AFW pump system inoperable, action must be taken to restore the affected equipment to OPERABLE status within 24 or 48 hours as described below. Assuming no single active failures when in this condition, the accident (MSLB) could result in the loss of the remaining steam supply to the turbine driven AFW pump due to the faulted steam generator. In this condition, the AFW system may no longer be able to meet the required flow to the SGs assumed in the safety analysis.

If the motor driven AFW pump system from the opposite unit is not available, the 24 hour Completion Time is reasonable based on the remaining OPERABLE steam supply to the turbine driven AFW pump, and the low probability of an event occurring that would

BASES

require the inoperable steam supply to be available for the turbine driven AFW pump.

The 48 hour Completion Time is reasonable based on the fact that this motor driven AFW pump system is available, the motor driven AFW pump system is capable of providing 100% of the AFW flow requirements, and there is a low probability of an event occurring that would challenge the AFW system.

D.1 and D.2

When Required Action A.1, B.1, ~~or~~ C.1, or C.2 cannot be completed within the required Completion Time, ~~or if two AFW pump systems are inoperable in MODE 1, 2, or 3,~~ the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE 4 within 18 hours.

~~Required Action D.1 is modified by a Note indicating the each unit may be sequentially placed in MODE 3 within 12 hours when both units are in Condition D concurrently. Proper application of this Note requires that no more than 12 hours elapse between the time Condition D.1 is entered for the first unit and entry into MODE 3 for both units. This~~

BASES

ACTIONS (continued) The allowed Completion Times ~~extension is~~ 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.

~~Required Action D.2 is modified by a Note indicating that entry into MODE 4 is not required unless one motor driven AFW pump system is OPERABLE. This Completion Time extension precludes entry into an operational condition where a motor driven AFW pump system may be needed when no motor driven AFW pump systems are available.~~

~~The allowed Completion Times, as modified by the Notes, 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.~~

E.1

If ~~all three~~ both AFW pump systems are inoperable in MODE 1, 2, or 3, the unit is in a seriously degraded condition with no automatically initiated safety related AFW pump systems ~~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 system ~~train~~ to OPERABLE status.

Required Action E.1 is modified by a Note indicating that all required MODE changes or power reductions are suspended until one AFW pump system 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. This Note does not prohibit voluntary MODE changes that may be prudent for safe operation.

F.1

In MODE 4, either the reactor coolant pumps or the RHR loops can be used to provide forced circulation. This is addressed in LCO 3.4.6, "RCS Loops-MODE 4." With ~~one or more required~~ the motor driven pump system~~s~~ inoperable, action must be taken to immediately restore the inoperable pump system~~(s)~~ to OPERABLE status. The immediate Completion Time is consistent with LCO 3.4.6.

SURVEILLANCE REQUIREMENTS

SR 3.7.5.1

Verifying the correct alignment for manual, power operated, and

BASES

SURVEILLANCE REQUIREMENTS (continued)

the steam generators during pump testing. This Note allows suitable test conditions to be established while allowing a reasonable time period to complete the SR during unit startups and low power operation.

SR 3.7.5.3

This SR verifies that AFW can be delivered to the appropriate steam generator in the event of any accident or transient that generates an ESFAS, by demonstrating that ~~each~~ the two motor driven AFW pump discharge flow control valves ~~motor operated valve (AF-4020, 4021, 4022, and 4023)~~ actuate to their correct positions on an actual or simulated actuation signal. This Surveillance is not required for valves that are locked, sealed, or otherwise secured in the required position under administrative controls. The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a unit outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. The 18 month Frequency is acceptable based on operating experience and the design reliability of the equipment.

The SR is modified by a Note that states one or more AFW ~~trains~~ pump systems 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 AFW mode of operation, provided it is not otherwise inoperable. This exception allows the system to be out of its normal standby alignment and temporarily incapable of automatic initiation without declaring the train(s) inoperable. Since AFW 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 AFW system, OPERABILITY (i.e., the intended safety function) continues to be maintained.

SR 3.7.5.4

This SR verifies that the AFW pumps will start in the event of any accident or transient that generates an ESFAS by demonstrating that each AFW pump starts automatically on an actual or simulated actuation signal. The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a unit outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power.

The ability of the Main Steam supply valves for the turbine driven pump to actuate to the correct position on an actual or simulated actuation signal is verified by this SR. The ability of the motor driven AFW pump

BASES

SURVEILLANCE REQUIREMENTS (continued)

discharge flow control valves to actuate to the correct position on a actual or simulated actuation signal is also tested by this SR. ~~The AFW discharge pressure control valves do not receive an automatic actuation signal and are not included in the SR.~~

This SR is modified by two Notes. Note 1 indicates that the SR may be deferred until suitable test conditions are established. This deferral is required because there is insufficient steam pressure to perform the test. Note 2 states one or more AFW ~~trains~~ pump systems 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 AFW mode of operation, provided it is not otherwise inoperable. This exception allows the system to be out of its normal standby alignment and temporarily incapable of automatic initiation without declaring the train(s) inoperable. Since AFW 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 AFW system, OPERABILITY (i.e., the intended safety function) continues to be maintained.

SR 3.7.5.5

This SR verifies that the AFW is properly aligned by verifying the flow paths from the CST to each steam generator supplied by the respective AFW pump system prior to exceeding 2% of RTP after more than 30 days in any combination of MODE 5 or 6 or defueled. OPERABILITY of AFW flow paths must be verified before sufficient core heat is generated that would require the operation of the AFW System during a subsequent shutdown. The Frequency is reasonable, based on engineering judgement and other administrative controls that that ensures that flow paths remain OPERABLE. To further ensure AFW System alignment, flow path OPERABILITY is verified following extended outages to determine no misalignment of valves has occurred. This SR ensures that the flow path from the CST to the steam generators is properly aligned.

REFERENCES

1. FSAR, Section 10.2.
2. ASME OM Code, Code for Operation and Maintenance of Nuclear Power Plants.