



Crystal River Nuclear Plant
Docket No. 50-302
Operating License No. DPR-72

Ref: 10 CFR 50.90

January 17, 2008
3F0108-03

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

Subject: Crystal River Unit 3 – License Amendment Request #302, Revision 0,
Surveillance Requirement (SR) 3.7.5.2: Emergency Feedwater System

Reference: United States Nuclear Regulatory Commission Regulation (NUREG)-1430,
Volume 1, Revision 3 Published June 2004, “Standard Technical Specifications
Babcock and Wilcox Plants - Specifications”

Dear Sir:

In accordance with the provisions of 10 CFR 50.90, Florida Power Corporation (FPC), doing business as Progress Energy Florida, Inc., hereby submits License Amendment Request #302, Revision 0. The proposed amendment would revise the Crystal River Unit 3 (CR3) Improved Technical Specification (ITS) SR 3.7.5.2, Emergency Feedwater System, and would align the text for the surveillance test frequency with the text in the referenced document.

Attachment A provides a description of the proposed change. Attachment B provides existing pages from the CR3 ITS and Bases marked-up to show the proposed change, and Attachment C shows the change presented more formally with revision bars.

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

The CR3 Plant Nuclear Safety Committee has reviewed this request and recommended it for approval.

No new regulatory commitments are made in this letter.

If you have any questions regarding this submittal, please contact Mr. Dennis Herrin, Acting Supervisor, Licensing and Regulatory Programs at (352) 563-4633.

Sincerely,

Dale E. Young
Vice President
Crystal River Nuclear Plant

DEY/dar

Progress Energy Florida, Inc.
Crystal River Nuclear Plant
15760 W. Powerline Street
Crystal River, FL 34428

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- Attachments:
- A. Description and Assessment
 - B. Proposed Improved Technical Specification and Bases Changes (Mark-up)
 - C. Proposed Improved Technical Specification and Bases Changes (Revision Bar Format)

xc: NRR Project Manager
Regional Administrator, Region II
Senior Resident Inspector
State Contact

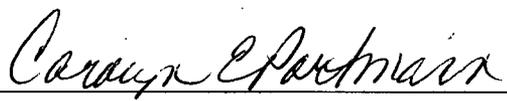
STATE OF FLORIDA
COUNTY OF CITRUS

Dale E. Young states that he is the Vice President, Crystal River Nuclear Plant for Florida Power Corporation, doing business as Progress Energy Florida, Inc.; that he is authorized on the part of said company to sign and file with the Nuclear Regulatory Commission the information attached hereto; and that all such statements made and matters set forth therein are true and correct to the best of his knowledge, information, and belief.

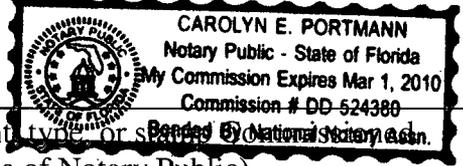


Dale E. Young
Vice President
Crystal River Nuclear Plant

The foregoing document was acknowledged before me this 17 day of January, 2008, by Dale E. Young.



Signature of Notary Public
State of Florida



(Print type or stamp by National Notary Assn.
Name of Notary Public)

Personally Known _____ -OR- Produced Identification _____

PROGRESS ENERGY FLORIDA, INC.

CRYSTAL RIVER UNIT 3

DOCKET NUMBER 50-302 / LICENSE NUMBER DPR-72

LICENSE AMENDMENT REQUEST #302, REVISION 0

**Surveillance Requirement (SR) 3.7.5.2:
Emergency Feedwater System**

ATTACHMENT A

Description and Assessment

Description and Assessment

1.0 DESCRIPTION

The current language in Surveillance Requirement (SR) 3.7.5.2 test frequency was introduced to the Crystal River Unit 3 (CR3) Improved Technical Specifications (ITS) in Amendment 149 when the CR3 Technical Specifications were converted to the ITS. When this amendment was first proposed in 1989 (Reference 8.9), CR3 based the language for SR 3.7.5.2 on the Babcock and Wilcox (B&W) Topical Report for Standardized Technical Specifications (STS) for B&W plants (Reference 8.2). This document later became the basis for United States Nuclear Regulatory Commission Regulation (NUREG)-1430, Standard Technical Specifications Babcock and Wilcox Plants (Reference 8.1) issued in 1992. Because Amendment 149 was granted to CR3 in 1993 (Reference 8.10) just after Revision 0 of NUREG-1430 was issued, the language for SR 3.7.5.2 was also consistent with this NUREG. After this, NUREG-1430 evolved and the language for this SR changed. The change, proposed by Technical Specification Task Force (TSTF) Change Traveler TSTF-101, revised the Auxiliary Feedwater (AFW, or Emergency Feedwater [EFW] for CR3) Pump test frequency to be "In accordance with the Inservice Testing Program." This revision was approved in 1996 and incorporated into Revision 2 of NUREG-1430 (and remains unchanged in the current version, Revision 3), after Amendment 149 was granted to CR3. Since NUREG-1430, which is the basis for CR3 SR 3.7.5.2, has changed since CR3 was granted its amendment, CR3 SR 3.7.5.2 no longer reflects the current revision of NUREG-1430.

This License Amendment Request (LAR) proposes to revise CR3 SR 3.7.5.2, EFW System, to make the test frequency consistent with the current revision of NUREG-1430. This will align CR3 SR 3.7.5.2 with current NRC-approved language for B&W STS. Changes are also proposed to revise the Bases for SR 3.7.5.2 to describe the SR tests and their frequency.

2.0 PROPOSED CHANGE

The proposed change replaces the existing text in the CR3 ITS for the test frequency of SR 3.7.5.2, "45 days on a STAGGERED TEST BASIS," with text for the same SR from the current version (Revision 3) of Reference 8.1, "In accordance with the Inservice Testing Program." Similarly, a proposed revision of the Bases will describe the SR tests and their frequency.

This change is illustrated in Attachment B.

3.0 BACKGROUND

CR3 ITS 3.7.5 addresses operability of the EFW System. SR 3.7.5.2 is as follows:

SURVEILLANCE	FREQUENCY
<p>SR 3.7.5.2 -----NOTE----- Not required to be performed for the turbine driven EFW pump, until 24 hours after entering MODE 3. ----- Verify the developed head of each EFW pump at the flow test point is greater than or equal to the required developed head.</p>	<p>45 days on a STAGGERED TEST BASIS</p>

CR3 ITS, SR 3.7.5.2

CR3 Surveillance Procedure (SP)-640B, "EFP2 Full-Flow Test," satisfies this SR during a refueling outage for Emergency Feedwater Pump (EFP)-2 by performing a full flow test. Performance of this type of test would not be practical at full power. A full flow test under full power conditions would introduce cold EFW into operating Once-Through Steam Generators (OTSGs) which could cause a plant transient and trip the reactor. To avoid this, SP-349B, "EFP-2 and Valve Surveillance," is performed when the plant is at power to satisfy this SR. Rather than perform a full flow test, SP-349B determines a pressure drop across part of the minimum flow recirculation line to assess pump operability. Because this does not involve adding cold EFW to operating OTSGs, a statement is included in the Bases acknowledging this to be the appropriate type of test at power.

Determining operability at power by measuring the pressure drop across a minimum flow recirculation line rather than doing a full flow test was presented in guidance provided by Generic Letter 89-04, "Guidance on Developing Acceptable Inservice Testing Programs" (Reference 8.3). While it was recognized as an acceptable alternative to American Society of Mechanical Engineers (ASME) Code requirements, it represented a deviation from the Code and therefore, needed to be documented in the CR3 Inservice Testing Program (IST) Program. Reference 8.4 granted relief for this deviation stating that this alternative test provided reasonable assurance of operational readiness of the pump.

Although the Bases recognizes a test performed on recirculation at a reduced flow rate to be the appropriate test to satisfy SR 3.7.5.2 at power conditions, this type of test is not consistent with the language in the surveillance. The SR requires the EFW pump to be operated at a specific flow test point so the developed head can be verified to be greater than or equal to an acceptable value. This is not an accurate description of the flow test performed using SP-349B.

When CR3 converted to the ITS in Amendment 149, the content of the specifications was based on BAW-2076 (Reference 8.2) and NUREG-1430 (Reference 8.1). This is evident for SR 3.7.5.2 when comparing the language from the current CR3 ITS (above) with that from Revision 0 of NUREG-1430 (on the following page):

SURVEILLANCE	FREQUENCY
<p>SR 3.7.5.2 -----NOTE----- Not required to be performed for the turbine driven EFW pumps, until [24] hours after reaching [800] psig in the steam generators. ----- Verify the developed head of each EFW pump at the flow test point is greater than or equal to the required developed head.</p>	<p>[31] days on a STAGGERED TEST BASIS</p>

NUREG-1430, Revision 0, SR 3.7.5.2

After CR3 converted to the ITS in Amendment 149 (which implemented the current CR3 version of SR 3.7.5.2), the test frequency for this surveillance in NUREG-1430 was revised during Revision 2. While the surveillance for SR 3.7.5.2 has remained generally the same in the NUREG, the test frequency has evolved from its Revision 0 and Revision 1 language, “[31] days on a STAGGERED TEST BASIS,” to what is found in Revisions 2 and 3, “In accordance with the Inservice Testing Program.” TSTF-101-A introduced this change to eliminate any potential ambiguity caused by ASME Code changes.

The proposed change to CR3 SR 3.7.5.2 is consistent with TSTF-101-A.

4.0 TECHNICAL ANALYSIS

The proposed change will replace the current language for the Frequency of CR3 ITS SR 3.7.5.2, “45 days on a STAGGERED TEST BASIS,” to that found in the current revision of NUREG-1430, “In accordance with the Inservice Testing Program.” Similarly, a proposed revision of the Bases will describe the SR tests and their frequency.

There is no technical analysis needed to support this change.

5.0 REGULATORY ANALYSIS

5.1 No Significant Hazards Consideration

Florida Power Corporation (FPC), doing business as Progress Energy Florida, Inc., has evaluated the proposed LAR against the criteria of 10 CFR 50.92(c) to determine if any significant hazards consideration is involved. FPC has concluded that this proposed LAR does not involve a significant hazards consideration. The following is a discussion of how each of the 10 CFR 50.92(c) criteria is satisfied.

1. *Does not involve a significant increase in the probability or consequences of an accident previously evaluated.*

Changing the test frequency of SR 3.7.5.2 from “45 days on a STAGGERED TEST BASIS” to “In accordance with the Inservice Testing Program” will not affect any CR3 structure, system or component (SSC). As such, there will be no effect on plant operation, to any design function or analysis that verifies the capability of a SSC to perform a design function, or to any of the previously evaluated accidents in the CR3 Final Safety Analysis Report (FSAR).

The proposed amendment will not change any operating procedure or administrative control. Since the proposed amendment does not involve a change to any SSC, their operation or design, and since the proposed amendment will not change any of the previously evaluated accident in the CR3 FSAR, the probability and consequences of any accident or operating scenario will be unchanged by its implementation.

Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. *Does not create the possibility of a new or different kind of accident from any accident previously evaluated.*

The proposed change will not involve a physical alteration of the plant (i.e., no new or different type of equipment will be installed) or a change in the methods governing normal plant operation. The proposed change will not alter any assumptions made in the safety analysis.

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

3. *Does not involve a significant reduction in a margin on safety.*

The proposed change will not alter the manner in which safety limits, limiting safety system settings or Limiting Conditions for Operation are determined. The safety analysis acceptance criteria are not affected by this change. The proposed change will not result in plant operation in a configuration outside of the accepted design basis. As such, the proposed change does not involve a significant reduction in a margin of safety.

Based on the above, FPC concludes that the proposed change to the CR3 ITS presents no significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of “no significant hazards consideration” is justified.

5.2 Applicable Regulatory Requirements / Criteria

10 CFR 50.36, "Technical Specifications." Paragraph 50.36(c)(3) states, "Surveillance requirements are requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the limiting conditions for operation will be met." Changing the test frequency for SR 3.7.5.2 from "45 days on a STAGGERED TEST BASIS" to "In accordance with the Inservice Testing Program" will not change the ability of this SR to satisfy the definition above.

10 CFR 50.55a, "Codes and Standards." Paragraph 50.55a(g) requires that certain ASME Code Class 1, 2, and 3 pumps and valves be designed to enable inservice testing and that testing be performed to assess operational readiness in accordance with the Section XI requirements of the ASME Boiler and Pressure Vessel Code. This is to help ensure operational readiness of equipment through the detection of degradation and the verification that adequate margins are maintained. Changing the test frequency for SR 3.7.5.2 from "45 days on a STAGGERED TEST BASIS" to "In accordance with the Inservice Testing Program" will not change CR3's IST Program or its effectiveness in meeting this goal.

Based on the considerations discussed above for the requested change, (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 approval of the proposed change will not be inimical to the common defense and security or to the health and safety of the public.

6.0 ENVIRONMENTAL CONSIDERATION

10 CFR 51.22(c)(9) provides criteria for identification of licensing and regulatory actions eligible for categorical exclusion from performing an environmental assessment. A proposed amendment to an Operating License for a facility requires no environmental assessment if operation of the facility in accordance with the proposed amendment would not:

- (i) involve a significant hazards consideration,
- (ii) result in a significant change in the types or significant increase in the amounts of any effluents that may be released offsite, and
- (iii) result in a significant increase in individual or cumulative occupational radiation exposure.

FPC has reviewed proposed License Amendment Request #302, Revision 0, and concludes it meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(c), no environmental impact statement or environmental assessment needs to be prepared in connection with this request.

7.0 PRECEDENTS

This change was the subject of TSTF-101-A, Revision 0, requested on July 17, 1996 and granted on September 18, 1996, with approval documented in a letter dated September 27, 1996 (Reference 8.11). That request changed AFW (or EFW for CR3) pump test frequency to be "In accordance with the Inservice Testing Program." This was requested to make all technical specification surveillance tests consistent in referencing the IST Program for performance of pump testing. The intention was to eliminate any potential ambiguity associated with AFW Pump testing created by changes with ASME code requirements. It resulted in a consistent presentation of pump testing throughout the technical specifications. This frequency for testing AFW pumps is consistent with ASME Code Requirements and other similar pump testing frequencies important to safety (e.g., Emergency Core Cooling System pumps). Such inservice tests confirm component operability, trend performance, and detect incipient failures by indicating abnormal performance. This change was implemented as part of Revision 2 to NUREG-1430 and remains unchanged in the current revision. The change to the surveillance frequency matches that requested by this amendment.

Florida Power and Light (FPL) referenced TSTF-101-A to revise St. Lucie Technical Specification 3/4.7.1.2, "Auxiliary Feedwater System," in a submittal adopting selected Improved STS. Application for this change was made on April 21, 2005 (Reference 8.5), with approval granted on June 19, 2006 (Reference 8.6) as Amendments 199 and 146. Before the amendment, the specification identified pump head requirements and a test frequency of 31 days. The proposed changes removed the specific pump head requirements from the specification and required both pump performance measurement and test frequency to be in accordance with the IST Program. These revisions brought the pump testing requirements for the AFW pumps in line with the testing requirements of other pumps. The new test frequency was also made consistent with ASME Code requirements. The change to the surveillance frequency of St. Lucie Technical Specification 3/4.7.1.2 is consistent with that requested by this amendment.

Other plants that have converted to Improved STSs have adopted TSTF-101-A during conversion. For example, Virginia Electric and Power Company (VEPCO) submitted a license amendment request for North Anna Units 1 and 2 on December 11, 2000 (Reference 8.7), with approval granted on April 5, 2002 (Reference 8.8) as Amendments 231 and 212. This revised AFW pump test frequency to be "In accordance with the Inservice Testing Program." This change is consistent with that requested for the test frequency of CR3 SR 3.7.5.2 by this amendment.

8.0 REFERENCES

- 8.1 NUREG-1430, Volume 1 (Revision 0, September 28, 1992; Revision 1, April 7, 1995; Revision 2, April 30, 2001; Revision 3, March 31, 2004), "Standard Technical Specifications Babcock and Wilcox Plants – Specifications"
- 8.2 BAW-2076, 1989, "B&WOG Revised Standard Technical Specifications"
- 8.3 Generic Letter 89-04 dated April 3, 1989, "Guidance on Developing Acceptable Inservice Testing Programs"
- 8.4 NRC Letter to CR3 dated January 22, 1999, "Safety Evaluation for Third 10-Year Interval Inservice Testing Program for Pumps and Valves – Crystal River Unit 3 (TAC No. MA1794)"
- 8.5 FPL Letter to NRC dated April 21, 2005 ([ML051160368](#)), "Adoption of Selected Improved Standard Technical Specification (ISTS) Travelers and Selected ISTS Requirements"
- 8.6 NRC Letter to FPL dated June 19, 2006 ([ML061440090](#)), "St. Lucie Units 1 and – Issuance of Amendments Regarding Adoption of Selected Standard Technical Specifications Requirements (TAC Nos. MC6858, MC6859, MC6861 through MC6873)"
- 8.7 VEPCO Letter to NRC dated December 11, 2000 ([ML003780732](#)), "Virginia Electric and Power Company North Anna Power Station Units 1 and 2 Proposed Technical Specification Changes Improved Technical Specifications"
- 8.8 NRC Letter to VEPCO dated April 5, 2002 ([ML021200265](#) and [ML021220166](#)), "North Anna Power Station, Units 1 and 2 – Issuance of Amendments Re: Conversion to Improved Technical Specifications (TAC Nos. MB0799 and MB0800)"
- 8.9 FPC Letter to NRC dated August 25, 1989, "Crystal River Unit 3 Docket No. 50-302 Operating License No. DPR-72 Technical Specification Change Request No. 171 Technical Specification Improvement"
- 8.10 NRC Letter to FPC dated December 20, 1993 ([ML020710149](#)), "Crystal River Unit 3 – Issuance of Amendment Re: Improved Technical Specifications (TAC No. M74563)"
- 8.11 NRC Letter to Nuclear Energy Institute dated September 27, 1996, Status of Traveler Packages

PROGRESS ENERGY FLORIDA, INC.

CRYSTAL RIVER UNIT 3

DOCKET NUMBER 50-302 / LICENSE NUMBER DPR-72

LICENSE AMENDMENT REQUEST #302, REVISION 0

**Surveillance Requirement (SR) 3.7.5.2:
Emergency Feedwater System**

ATTACHMENT B

**Proposed Improved Technical Specification and Bases Changes
(Mark-up)**

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Required Action and associated Completion Time of Condition A or B not met.	C.1 Be in Mode 3.	6 hours
	<u>AND</u>	
	C.2 Be in Mode 4.	12 hours
D. Two EFW trains inoperable.	D.1 Initiate action to restore one EFW train to OPERABLE status.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.5.1 Verify each EFW manual, power operated, and automatic valve in each water flow path, in both steam supply flow paths to the turbine driven pump, and starting air and fuel oil flow path for the diesel driven EFW pump that is not locked, sealed, or otherwise secured in position, is in the correct position.	45 days
SR 3.7.5.2 -----NOTE----- Not required to be performed for the turbine driven EFW pump, until 24 hours after entering MODE 3. ----- Verify the developed head of each EFW pump at the flow test point is greater than or equal to the required developed head.	45 days on a STAGGERED TEST BASIS In accordance with the <u>Inservice Testing Program</u>

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BASES

SURVEILLANCE
REQUIREMENTS

SR 3.7.5.1

Verifying the correct alignment for manual, power operated, and automatic valves in the EFW water, steam supply flow, diesel starting air and fuel oil paths provides assurance that the proper flow paths exist for EFW operation. This SR does not apply to valves that are locked, sealed, or otherwise secured in position, since those valves are verified to be in the correct position prior to locking, sealing, or securing. These valves include valves in the main flow paths and the first normally closed valve in a branch line. In lieu of the first normally closed valve in the branch line, credit may be taken for verifying valve position of another valve downstream, providing the isolation of the flow path is achieved. Verifying correct valve alignment of valves immediately downstream of an unsecured valve still assures isolation of the flow path. There are several exceptions for valve position verification due to the low potential for these types of valves to be mispositioned. The valve types which are not verified as part of this SR include vent or drain valves, relief valves, instrumentation valves, check valves, sample line valves. A valve that receives an actuation signal is allowed to be in a non-accident position provided the valve will automatically reposition within the proper stroke time. For a power operated valve to be considered "locked, sealed, or otherwise secured", the component must be electrically and physically restrained.

This Surveillance does not require any testing or valve manipulation; rather, it involves verification that those valves capable of being mispositioned are in the correct position.

The 45 day frequency is based on engineering judgment and is consistent with the frequency established for SR 3.7.5.2. SR 3.7.5.2 requires extensive EFW valve manipulation in order to perform the pump flow rate verification, such that a flow path verification is necessary following each performance.

SR 3.7.5.2

This SR verifies that the EFW pumps develop sufficient discharge pressure to deliver the required flow at the full open pressure of the MSSVs. Because it is undesirable to

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BASES

SURVEILLANCE
REQUIREMENTS

SR 3.7.5.2 (continued)

introduce cold EFW into the OTSGs while they are operating, this test is normally performed on recirculation at a reduced flow rate.

On a refueling outage basis, the EFW pumps will be tested at full or substantial flow conditions with flow, differential pressure and bearing vibration measurements taken. Quarterly testing of the EFW pumps is performed through the uninstrumented minimum flow recirculation lines with pump vibration and differential pressure measurements taken. Evaluations of pump operability and available margin can be performed based upon these test results.

Periodically comparing the reference differential pressure developed at this reduced flow detects trends that might be indicative of degrading pump performance. Performance of inservice testing discussed in the ASME Code, Section XI (Ref. 5), at 3 month intervals, is satisfied by this SR. ~~The 45 day Frequency on a STAGGERED TEST BASIS results in testing each pump once every 3 months, as required by Reference 5.~~

This SR is modified by a Note indicating that the SR may be deferred until suitable test conditions are established. This SR 3.0.4 type exception may be necessary during any plant start-up because there is insufficient steam pressure in the secondary side of the OTSGs to perform this SR on the turbine-driven pump.

SR 3.7.5.3

This SR verifies that EFW can be delivered to the appropriate OTSG in the event of any accident or transient that generates an EFIC signal by demonstrating that each automatic valve in the flow path, that is not locked, sealed, or otherwise secured in position, actuates to its correct position on an actual or simulated actuation signal.

Valves secured in the correct position need not demonstrate the capability to achieve this configuration. ADVs also need not demonstrate the capability to satisfy this SR since their operation is not credited as part of any DBA.

The SR also verifies the EFW control and block valves actuate to the isolation position on a simulated or actual vector valve control signal.

This SR is a test of the integrated system response to an actuation signal and as such, it is not necessary to verify the EFW System actuates on each EFIC signal. Any of the initiation signals described in the Background Section of these Bases is adequate, given that the various EFIC

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PROGRESS ENERGY FLORIDA, INC.

CRYSTAL RIVER UNIT 3

DOCKET NUMBER 50-302 / LICENSE NUMBER DPR-72

LICENSE AMENDMENT REQUEST #302, REVISION 0

**Surveillance Requirement (SR) 3.7.5.2:
Emergency Feedwater System**

ATTACHMENT C

**Proposed Improved Technical Specification and Bases Changes
(Revision Bar Format)**

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Required Action and associated Completion Time of Condition A or B not met.	C.1 Be in Mode 3.	6 hours
	<u>AND</u> C.2 Be in Mode 4.	12 hours
D. Two EFW trains inoperable.	D.1 Initiate action to restore one EFW train to OPERABLE status.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.5.1 Verify each EFW manual, power operated, and automatic valve in each water flow path, in both steam supply flow paths to the turbine driven pump, and starting air and fuel oil flow path for the diesel driven EFW pump that is not locked, sealed, or otherwise secured in position, is in the correct position.	45 days
SR 3.7.5.2 -----NOTE----- Not required to be performed for the turbine driven EFW pump, until 24 hours after entering MODE 3. ----- Verify the developed head of each EFW pump at the flow test point is greater than or equal to the required developed head.	In accordance with the Inservice Testing Program

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BASES

SURVEILLANCE
REQUIREMENTS

SR 3.7.5.1

Verifying the correct alignment for manual, power operated, and automatic valves in the EFW water, steam supply flow, diesel starting air and fuel oil paths provides assurance that the proper flow paths exist for EFW operation. This SR does not apply to valves that are locked, sealed, or otherwise secured in position, since those valves are verified to be in the correct position prior to locking, sealing, or securing. These valves include valves in the main flow paths and the first normally closed valve in a branch line. In lieu of the first normally closed valve in the branch line, credit may be taken for verifying valve position of another valve downstream, providing the isolation of the flow path is achieved. Verifying correct valve alignment of valves immediately downstream of an unsecured valve still assures isolation of the flow path. There are several exceptions for valve position verification due to the low potential for these types of valves to be mispositioned. The valve types which are not verified as part of this SR include vent or drain valves, relief valves, instrumentation valves, check valves, sample line valves. A valve that receives an actuation signal is allowed to be in a non-accident position provided the valve will automatically reposition within the proper stroke time. For a power operated valve to be considered "locked, sealed, or otherwise secured", the component must be electrically and physically restrained.

This Surveillance does not require any testing or valve manipulation; rather, it involves verification that those valves capable of being mispositioned are in the correct position.

The 45 day frequency is based on engineering judgment and is consistent with the frequency established for SR 3.7.5.2. SR 3.7.5.2 requires extensive EFW valve manipulation in order to perform the pump flow rate verification, such that a flow path verification is necessary following each performance.

SR 3.7.5.2

This SR verifies that the EFW pumps develop sufficient discharge pressure to deliver the required flow at the full open pressure of the MSSVs. Because it is undesirable to introduce cold EFW into the OTSGs while they are operating, this test is normally performed on recirculation at a reduced flow rate.

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BASES

SURVEILLANCE
REQUIREMENTS

SR 3.7.5.2 (continued)

On a refueling outage basis, the EFW pumps will be tested at full or substantial flow conditions with flow, differential pressure and bearing vibration measurements taken. Quarterly testing of the EFW pumps is performed through the uninstrumented minimum flow recirculation lines with pump vibration and differential pressure measurements taken. Evaluations of pump operability and available margin can be performed based upon these test results.

Periodically comparing the reference differential pressure developed at this reduced flow detects trends that might be indicative of degrading pump performance. Performance of inservice testing discussed in the ASME Code, Section XI (Ref. 5), at 3 month intervals, is satisfied by this SR.

This SR is modified by a Note indicating that the SR may be deferred until suitable test conditions are established. This SR 3.0.4 type exception may be necessary during any plant start-up because there is insufficient steam pressure in the secondary side of the OTSGs to perform this SR on the turbine-driven pump.

SR 3.7.5.3

This SR verifies that EFW can be delivered to the appropriate OTSG in the event of any accident or transient that generates an EFIC signal by demonstrating that each automatic valve in the flow path, that is not locked, sealed, or otherwise secured in position, actuates to its correct position on an actual or simulated actuation signal.

Valves secured in the correct position need not demonstrate the capability to achieve this configuration. ADVs also need not demonstrate the capability to satisfy this SR since their operation is not credited as part of any DBA.

The SR also verifies the EFW control and block valves actuate to the isolation position on a simulated or actual vector valve control signal.

This SR is a test of the integrated system response to an actuation signal and as such, it is not necessary to verify the EFW System actuates on each EFIC signal. Any of the initiation signals described in the Background Section of these Bases is adequate, given that the various EFIC

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