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Ref: 10CFR50.90

CPSES-200200192
Log # TXX-02010
File # 00236
10010

March 25, 2002

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

SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION (CPSES)
DOCKET NOS. 50-445 AND 50-446
LICENSE AMENDMENT REQUEST (LAR) 02-02
REVISION TO TECHNICAL SPECIFICATION (TS) 3.7.3
FEEDWATER ISOLATION VALVES

Gentlemen:

Pursuant to 10CFR50.90, TXU Generation Company LP hereby requests an amendment to the CPSES Unit 1 Operating License (NPF-87) and CPSES Unit 2 Operating License (NPF-89) by incorporating the attached change into the CPSES Unit 1 and 2 Technical Specifications. This change request applies to both units.

The proposed change would adopt the NUREG-1431, Standard Technical Specifications for Westinghouse Plants, Revision 2 version of TS 3.7.3.

Attachment 1 provides a detailed description of the proposed changes, a safety analysis of the changes, and TXU Generation Company LP's determination that the proposed changes do not involve a significant hazard consideration. Attachment 2 provides the affected Technical Specification pages marked-up to reflect the proposed changes. Attachment 3 provides an information copy of the affected Technical Specification Bases pages marked-up to reflect the proposed changes. Attachment 4 provides a retyped copy of affected Technical Specification pages with the proposed changes.

TXU Generation Company LP requests approval of the proposed License Amendment by February, 1 2003, to be implemented within 60 days of the issuance of the license amendment. The license amendment does not affect the capability of the units to operate at full power. The approval date was administratively selected.

A001

In accordance with 10CFR50.91(b), TXU Generation Company LP is providing the State of Texas with a copy of this proposed amendment.

This communication contains no new licensing basis commitments regarding CPSES Units 1 and 2.

Should you have any questions, please contact Mr. Bob Dacko at (254) 897-0122 or e-mail bdacko1@txu.com.

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

Executed on March 25, 2002.

Sincerely,

TXU Generation Company LP

By: TXU Generation Management Company LLC
Its General Partner

C. L. Terry
Senior Vice President and Principal Nuclear Officer

By: Roger D. Walker
Roger D. Walker
Regulatory Affairs Manager

BSD/bsd

Attachments
1. Description and Assessment
2. Markup of Technical Specifications pages
3. Markup of Technical Specifications Bases pages (for information)
4. Retyped Technical Specification Pages

c - E. W. Merschoff, Region IV
W. D. Johnson, Region IV
D. H. Jaffe, NRR
Resident Inspectors, CPSES

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ATTACHMENT 1 to TXX-02010

LICENSEE'S EVALUATION

LICENSEE'S EVALUATION

1.0 DESCRIPTION

1.1 Proposed change LAR-02-02 is a request to revise Technical Specifications (TS) 3.7.3, "Feedwater Isolation Valves (FIVs) and Associated Bypass Valves," for Comanche Peak Steam Electric Station (CPSES) Units 1 and 2.

1.2 MARKUP OF EXISTING TECHNICAL SPECIFICATIONS AND BASES

Technical Specifications:	See Attachment 2
Technical Specifications Bases:	See Attachment 3

1.3 PROPOSED TECHNICAL SPECIFICATIONS AND BASES

Technical Specifications:	See Attachment 4

1.4 FINAL SAFETY ANALYSIS REPORT (FSAR) SECTION

The evaluations performed in support of this License Amendment Request do not result in any required changes to the FSAR per 10CFR50.71(e), the guidance provided by Regulatory Guide 1.181 "Content of the Updated Final Safety Analysis Report in Accordance with 10 CFR 50.71(e)," and NEI 98-03, "Guidelines for Updating Final Safety Analysis Reports."

2.0 PROPOSED CHANGE

The proposed change will revise TS 3.7.3 to adopt the NUREG-1431, Standard Technical Specifications for Westinghouse Plants, Revision 2 version of the specification. In addition, a footnote which allowed a one time extension for the Condition A Completion Time, is being deleted because it is no longer valid. No additional justification for the administrative change is provided in this license amendment request.

For Information only, this LAR includes proposed changes to the Technical Specification Bases associated with the proposed Technical Specification.

3.0 BACKGROUND

The NUREG-1431, Standard Technical Specification (STS) for Westinghouse Plants 3.7.3 for Feedwater Isolation Valves (FIVs) provides a Completion Time of 72 hours for one or more FIVs inoperable and an 8 hour Completion Time for two valves in the same flow path inoperable. The extended Completion Time (with respect to the current TS) was based primarily on the addition of the feedwater control valves (FCVs) to the specification and taking credit for the ability of the FCVs to perform the feedwater isolation function. The STS Bases indicates that the 72 hour Completion Time for the FIVs takes into account the redundancy afforded by the feedwater control valves and the low probability of an event occurring during this time period that would require isolation of the MFW flow paths. The Bases states the 72 hours is reasonable based on operating experience. It also states that the 8 hour Completion Time for two valves in the same flow path inoperable is reasonable based on operating experience to complete the actions required to isolate the affected flowpath. The FIVs, FCVs, and associated bypass valves are described in FSAR Section 10.4.7.

The current CPSES Technical Specifications provide only a 4 hour Completion Time for one or more FIVs inoperable. During the TS conversion to the NUREG-1431 STS format, the STS version of TS 3.7.3 was evaluated to determine whether it should be adopted. However, because the STS added new requirements associated with the FCVs and their bypass valves the STS specification was not adopted at that time.

In January of 2000, enforcement discretion was sought and granted to extend the FIV Completion Time in order to repair a degraded FIV hydraulic pump. This experience with the FIVs has prompted TXU Generation Company LP to consider a change to this specification.

4.0 TECHNICAL ANALYSIS

The safety grade FIVs isolate main feedwater (MFW) flow to the secondary side of the steam generators following a high energy line break (HELB). Each FIV has a FIV Bypass Valve (FIBV) and a Feedwater Preheater Bypass Valve (FPBV) which are its associated bypass valves. The associated function of the Feedwater Control valves (FCVs) and their associated bypass valves (FCBVs) is to provide backup isolation of MFW flow to the secondary side of the steam generators following an HELB. The FCVs are not designated as active (i.e., are not full safety grade) but are designed as highly reliable backups to the FIVs. This licensing basis is reflected in FSAR Section 6.2.1.4.3. Closure of the FIVs and associated bypass valves or FCVs and associated bypass valves terminates flow to the steam generators, terminating the event for feedwater line breaks (FLBs) occurring upstream of the FIVs or FCVs. The consequences of events occurring in the main steam lines or in the MFW lines downstream from the FIVs will be mitigated by their closure. Closure of the FIVs and associated bypass valves, or FCVs and associated bypass valves, effectively terminates the addition of feedwater to an affected steam generator, limiting the mass and energy release for steam line breaks (SLBs) or FLBs inside containment, and reducing the cooldown effects for SLBs.

The FIVs and associated bypass valves, and the main feedwater check valves, isolate the non-safety related portions from the safety related portions of the system. In the event of a feedwater pipe rupture in the non-safety portion of the system, the check valves will close to terminate the loss of fluid from the secondary side. In the event of a secondary side pipe rupture inside containment, the FIVs and associated bypass valves limit the quantity of high energy fluid that enters containment through the break. The FIV check valves provide a pressure boundary for the controlled addition of auxiliary feedwater (AFW) to the intact loops.

The FIVs and associated bypass valves, and FCVs and associated bypass valves, close on receipt of a safety injection signal, T_{avg} — Low coincident with reactor trip (P-4) or steam generator water level — high high signal. They may also be actuated manually. Each FIV and associated bypass valves and each FCV and associated bypass valve is a two train valve (i.e., both Train A and Train B controls are independently provided to perform the close function). Single active failure of the FIV and associated bypass valves is not assumed; however, the FCVs and associated bypass valves are provided as a highly reliable backup in the unlikely event a mechanical failure prevented the primary isolation valves from fully closing. The only real difference between the FCVs and FIVs is that the FCVs are not fully seismically qualified or missile protected. The CPSES licensing basis (see FSAR section 3.5.1.4 and TS Bases) does not consider a coincident tornado or seismic event with a Condition III or IV FLB or SLB event inside containment. Therefore, the FCVs and the bypasses are fully capable of mitigating these design basis events.

The GDC-4 design basis of the FIVs is established by the analyses for large SLBs. It is also influenced by the accident analysis for the large FLB. Closure of the FIVs and associated bypass valves may also be relied on to terminate an SLB for core response analysis and the excess feedwater event upon the receipt of a steam generator water level — high high signal.

The current LCO ensures that the FIVs and their associated bypass valves will isolate MFW flow to the steam generators following an FLB or main steam line break. The FCVs, while not credited to perform the nuclear safety function for these events, are nevertheless expected to be available as highly reliable backups to the FIVs. The availability of the FCVs and their bypass valves to perform the backup isolation function is assured by the new requirements contained in the proposed TS change. Because, the TS requirements provide assurance that FCVs and FCV bypass valves can perform the required isolation function, a 72 hour Completion Time for one or more FIVs inoperable is warranted.

The Completion Times (72 hour for one or more FIVs inoperable and 8 hours for two valves in the same flow path inoperable) are reasonable, based on operating experience and the low probability of an event occurring during this time period that would require isolation of the MFW flow paths. The extension of the Completion Time for inoperable FIVs could prevent an unnecessary plant shutdown transient or prevent a feedwater transient due to a less than adequate time allowed for a repair.

In summary, the proposed increases in the Completion Times for inoperable FIVs is justified based on the redundancy afforded by the FCVs to terminate SLB and FLB events. The new TS surveillance requirements for the FCVs and associated bypass valves demonstrate their ability to initiate closure on the same actuation signals and with the same closure time requirements as the FIVs.

5.0 REGULATORY ANALYSIS

5.1 No significant Hazards Determination

TXU Generation Company LP has evaluated whether or not a significant hazards consideration is involved with the proposed changes by focusing on the three standards set forth in 10CFR50.92 as discussed below:

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

   Response: No

   The proposed change extends the Completion Time for one or more Feedwater Isolation Valves (FIVs) inoperable from 4 hours to 72 hours. Extending the Completion Time is not an accident initiator and thus does not change the probability that an accident will occur. However, it could potentially affect the consequences of an accident if an accident occurred during the extended unavailability of the inoperable FIV. The increase in time that the FIV is unavailable is small and the probability of an event occurring during this time period which would require isolation of the MFW flow paths is low. Moreover, the redundancy provided by the FCVs, which have same actuation signals and closure time requirements as the FIVs, provides adequate assurance that automatic feedwater isolation will occur if called upon.

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

2. Do the proposed changes create the possibility of a new or different kind of accident from any accident previously evaluated?

   Response: No

   Closure of the FIVs is required to mitigate the consequences of a Main Steam Line Break and Main Feedwater Line Break accidents. The proposed change does not create the possibility of a new or different kind of accident from any previously evaluated.

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

Response: No

The proposed change does not change any Technical Specification Limit or accident analysis assumption. Therefore it does not involve a reduction in a margin of safety.

Based on the above evaluations, TXU Generation Company LP concludes that the activities associated with the above described changes present no significant hazards consideration under the standards set forth in 10CFR50.92 and accordingly, a finding by the NRC of no significant hazards consideration is justified.

5.2 Regulatory Safety Analysis

Applicable Regulatory Requirements / Criteria

10CFR50, Appendix A, General Design Criteria (GDC) 4, "Structures, systems, and components important to safety shall be designed to accommodate the effects of and to be compatible with the environmental conditions associated with normal operation, maintenance, testing, and postulated accidents, including loss-of-coolant accidents. These structures, systems, and components shall be appropriately protected against dynamic effects, including the effects of missiles, pipe whipping, and discharging fluids, that may result from equipment failures and from events and conditions outside the nuclear power unit. However, dynamic effects associated with postulated pipe ruptures in nuclear power units may be excluded from the design basis when analyses reviewed and approved by the Commission demonstrate that the probability of fluid system piping rupture is extremely low under conditions consistent with the design basis for the piping."

GDC 16, "Reactor containment and associated systems shall be provided to establish an essentially leak-tight barrier against the uncontrolled release of radioactivity to the environment and to assure that the containment design conditions important to safety are not exceeded for as long as postulated accident conditions require."

GDC 50, "The reactor containment structure, including access openings, penetrations, and the containment heat removal system shall be designed so that the containment structure and its internal compartments can accommodate, without exceeding the design leakage rate and, with sufficient margin, the calculated pressure and temperature conditions resulting from any loss-of-coolant accident. This margin shall reflect consideration of (1) the effects of potential energy sources which have not been included in the determination of the peak conditions, such as energy in steam generators and

energy from metal water and other chemical reactions that may result from degraded emergency core cooling functioning, (2) the limited experience and experimental data available for defining accident phenomena and containment responses, and (3) the conservatism of the calculational model and input parameters."

GDC 53, "The reactor containment shall be designed to permit (1) appropriate periodic inspection of all important areas, such as penetrations, (2) an appropriate surveillance program, and (3) periodic testing at containment design pressure of the leaktightness of penetrations which have resilient seals and expansion bellows."

GDC 54, "Piping systems penetrating primary reactor containment shall be provided with leak detection, isolation, and containment capabilities having redundancy, reliability, and performance capabilities which reflect the importance to safety of isolating these piping systems. Such piping systems shall be designed with a capability to test periodically the operability of the isolation valves and associated apparatus and to determine if valve leakage is within acceptable limits."

GDC 57, "Each line that penetrates primary reactor containment and is neither part of the reactor coolant pressure boundary nor connected directly 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. This valve shall be outside the containment and located as close to the containment as practical. A simple check valve may not be used as the automatic isolation valve."

U. S. NRC Regulatory Guide (RG) 1.22 is NRC guidance for ensuring the adequacy of protection system actuation functions through periodic testing.

Analysis

The specification of concern helps assure compliance with GDC 4 such that, in the event of a Main Feedwater Line break or Main Steam Line Break inside containment, the containment will be appropriately isolated to prevent additional mass and energy from being delivered to the steam generators. The containment isolation/integrity provisions of GDC 16, GDC 50, GDC 53, GDC 54 and GDC 57 are not applicable to secondary pipe breaks but to a spectrum of Loss of Coolant Accidents (LOCAs). The extended Completion Time (72 hours) for FIVs and FIV bypass valves is consistent with the containment isolation requirements of TS 3.6.3, Condition C and thus does not impact these GDCs.

The proposed change adopts the NRC approved NUREG-1431 version of TS 3.7.3 which extends the Completion Time for one or more Feedwater Isolation Valves (FIVs) or associated bypass valves inoperable from 4 hours 72 hours. This change does not effect the compliance with any of the above General Design Criteria. The change does not affect the commitment to Regulatory Guide 1.22 as documented in FSAR Section 1A(N).

Conclusion

The technical analysis performed by TXU Generation Company LP demonstrates the availability of the FCVs and their bypass valves to perform the backup isolation function in the event the FIV or FIV bypass valve is inoperable. The change assures that there is sufficient feedwater line isolation capability to remain compliant with the above regulatory requirements.

6.0 ENVIRONMENTAL EVALUATION

TXU Generation Company LP has determined that the proposed amendment would change requirements with respect to the installation or use of a facility component located within the restricted area, as defined in 10CFR20, or would change an inspection or surveillance requirement. TXU Generation Company LP has evaluated the proposed changes and has determined that the changes do not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amount of effluent that may be released offsite, or (iii) a significant increase in the individual or cumulative occupational radiation exposure. Accordingly, the proposed change meets the eligibility criterion for categorical exclusion set forth in 10CFR51.22 (c)(9). Therefore, pursuant to 10CFR51.22 (b), an environmental assessment of the proposed change is not required.

7.0 REFERENCES

None

ATTACHMENT 2 to TXX-02010

MARKUP OF TECHNICAL SPECIFICATION PAGE

Pages 3.7-8 and 3.7-9

3.7 PLANT SYSTEMS

3.7.3 Feedwater Isolation Valves (FIVs) and Feedwater Control Valves (FCVs) and Associated Bypass Valves

LCO 3.7.3 Four FIVs, four FCVs, and associated bypass valves shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3 except when FIV, FCV or associated bypass valve is closed and de-activated or isolated by a closed manual valve

ACTIONS

----------NOTE----------
Separate Condition entry is allowed for each valve.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more FIVs inoperable.	A.1.~~1~~ Close or isolate FIV.	~~4~~ 72 hours
	~~OR*~~	
	~~A.1.2.1 Verify that the Feedwater Control Valve and associated bypass valve in the same flowpath are available to perform feedwater isolation.~~	~~4 hours~~
	~~AND~~	
	~~A.1.2.2 Close or isolate FIV~~	~~24 hours~~
	AND	
	A.2 Verify FIV is closed or isolated.	Once per 7 days

(continued)

~~*Actions A.1.2.1 and A.1.2.2 are only allowed for repair of the FIV hydraulic system through the end of fuel cycle 8 for Unit 1 and fuel cycle 5 for Unit 2.~~

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. One or more FCVs inoperable.	B.1	Close or isolate FCV.	72 hours
	AND		
	B.2	Verify FCV is closed or isolated.	Once per 7 days
~~B~~C. One or more FIV or FCV bypass valves inoperable.	~~B~~C.1	Close or isolate bypass valve.	~~4~~ 72 hours
	AND		
	~~B~~C.2	Verify bypass valve is closed or isolated.	Once per 7 days
D. Two valves in the same flowpath inoperable	D.1	Isolate affected flow path.	8 hours
~~C~~E. Required Action and associated Completion Time not met.	~~C~~E.1	Be in MODE 3.	6 hours
	AND		
	~~C~~E.2	Be in MODE 4.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.3.1	Verify the isolation time of each FIV, FCV, and associated bypass valves is ≤ 5 seconds.	In accordance with the Inservice Testing Program
SR 3.7.3.2	Verify each FIV, FCV, and associated bypass valves actuates to the isolation position on an actual or simulated actuation signal.	18 months

ATTACHMENT 3 to TXX-02010

MARKUP OF TECHNICAL SPECIFICATION BASES PAGES
(For Information Only)

Pages B 3.7-15 thru B 3.7-21

B 3.7 PLANT SYSTEMS

B 3.7.3 Feedwater Isolation Valves (FIVs) and Feedwater Control Valves (FCVs) and Associated Bypass Valves

BASES

BACKGROUND

The safety grade FIVs isolate main feedwater (MFW) flow to the secondary side of the steam generators following a high energy line break (HELB). Each FIV has a FIV Bypass Valve (FIBV) and a Feedwater Preheater Bypass Valve (FPBV) which are its associated bypass valves. The associated function of the Feedwater Control valves (FCVs) and their associated bypass valves (FCBVs) is to provide backup isolation of MFW flow to the secondary side of the steam generators following an HELB. Because an earthquake is not assumed to occur coincident with a spontaneous break of safety related secondary piping, loss of the non-safety grade FCVs is not assumed [Ref. 3]. If the single active failure postulated for a secondary pipe break is the failure of a safety grade FIV to close, then credit is taken for closing the non-safety grade FCV or tripping the feedwater pump in that line. [Ref. 3] Closure of the FIVs and associated bypass valves or FCVs and associated bypass valves terminates flow to the steam generators, terminating the event for feedwater line breaks (FLBs) occurring upstream of the FIVs or FCVs. The consequences of events occurring in the main steam lines or in the MFW lines downstream from the FIVs will be mitigated by their closure. Closure of the FIVs and associated bypass valves, or FCVs and associated bypass valves, effectively terminates the addition of feedwater to an affected steam generator, limiting the mass and energy release for steam line breaks (SLBs) or FLBs inside containment, and reducing the cooldown effects for SLBs.

The FIVs and associated bypass valves, and the main feedwater check valves, isolate the nonsafety related portions from the safety related portions of the system. In the event of a feedwater pipe rupture in the nonsafety portion of the system, the check valves will close to terminate the loss of fluid from the secondary side. In the event of a secondary side pipe rupture inside containment, the FIVS and associated bypass valves limit the quantity of high energy fluid that enters containment

(continued)

BASES

BACKGROUND (continued)

through the break. and The FIV check valves provide a pressure boundary for the controlled addition of auxiliary feedwater (AFW) to the intact loops.

One FIV and an associated bypass valve (FIBV), and one FCV and its associated bypass valve, are located on each MFW line, outside but close to containment. The preheater bypass valve associated with the FIV is located in a branch (preheater bypass) line downstream of the FCV between the feedwater isolation check valve and FIV. The AFW injection point is in the preheater bypass line outside but close to containment. The preheater bypass valves and FCVs are located upstream of the AFW injection point so that AFW may be supplied to the steam generators following preheater bypass valve or FCV closure. The FIVs are located in separate piping from the AFW so that AFW may be supplied to the steam generators following FIV closure. The piping volume from the FIV and associated bypass valves to the steam generators must be accounted for in calculating mass and energy releases, and purged prior to AFW reaching the steam generator following either an SLB or FWLB.

The FIVs and associated bypass valves, and FCVs and associated bypass valves, close on receipt of a safety injection signal, T_{avg}—Low coincident with reactor trip (P-4) or steam generator water level—high high signal. They may also be actuated manually as a group or individually. Each FIV and associated bypass valves and each FCV and associated bypass valve is a two train valve (i.e., both Train A and Train B controls are independently provided to perform the close function. Therefore, single active failure of the FIV and associated bypass valves is not assumed; however, the FCVs and associated bypass valves are provided as a backup in the unlikely event a mechanical failure prevented the primary isolation valves from fully closing.

A description of the FIVs and associated bypass valves and the FCVs and associated bypass valves is found in the FSAR, Chapters 6, 7, 10 and 15 (Ref. 1).

(continued)

BASES (continued)

APPLICABLE SAFETY ANALYSES

The design basis of the FIVs is established by the analyses for the large SLB. It is also influenced by the accident analysis for the large FLB. Closure of the FIVs and associated bypass valves may also be relied on to terminate an SLB for core response analysis and excess feedwater event upon the receipt of a steam generator water level—high high signal .

Failure of an FIV, or the associated bypass valves to close following an SLB or FLB can result in additional mass and energy being delivered to the steam generators, contributing to cooldown. This failure also results in additional mass and energy releases following an SLB or FLB event.

The FIVs and associated bypass valves satisfy Criterion 3 of 10CFR50.36(c)(2)(ii).

The associated function of the Feedwater Control valves (FCVs) and their associated bypass valves is to provide backup isolation of MFW flow to the secondary side of the steam generators following an HELB.

The FCVs and associated bypass valves satisfy Criterion 4 of 10CFR50.36(c)(2)(ii).

LCO

This LCO ensures that the FIVs, FCVs, and their associated bypass valves will isolate MFW flow to the steam generators, following an FLB or main steam line break. The associated bypass valves for each FIV are the feedwater isolation bypass valve and the associated feedwater preheater bypass valve.

This LCO requires that four FIVs and associated bypass valves and four FCVs and associated bypass valves be OPERABLE. The FIVs and FCVs and the associated bypass valves are considered OPERABLE when isolation times are within limits and they close on an isolation actuation signal.

Failure to meet the LCO requirements can result in additional mass and energy being released to containment following an SLB or FLB inside containment. Because a feedwater isolation signal on high steam generator level is relied on to terminate an excess feedwater flow event, failure to meet the LCO may result in the introduction of water into the main steam lines.

(continued)

BASES

APPLICABILITY

The FIVs and FCVs and the associated bypass valves must be OPERABLE whenever there is significant mass and energy in the Reactor Coolant System and steam generators. ~~This~~ The FIV and associated bypass valve operability ensures that, in the event of an HELB, a single failure cannot result in the blowdown of more than one steam generator. The FCV and associated bypass valve operability ensures that, in the event of a FIV or associated bypass valve inoperability, the safety function would still be maintained. In MODES 1, 2, and 3, the FIVs and FCVs and the ~~associated bypass~~ valves are required to be OPERABLE to limit the amount of available fluid that could be added to containment in the case of a secondary system pipe break inside containment. When the valves are closed and de-activated or isolated by a closed manual valve, they are already performing their safety function.

In MODES 4, 5, and 6, steam generator energy is low. Therefore, the FIVs, FCVs, and the associated bypass valves are normally closed since MFW is not required.

ACTIONS

The ACTIONS table is modified by a Note indicating that separate Condition entry is allowed for each valve.

A.1 and A.2

With one FIV in one or more flow paths inoperable, action must be taken to restore the affected valves to OPERABLE status, or to close or isolate inoperable affected valves within ~~4~~ 72 hours. When these valves are closed or isolated, they are performing their required safety function.

~~Alternately, for the repair of the FIV hydraulic system only, if within 4 hours the FCV and associated FCV bypass valve in the same flowpath are verified to be capable of performing the isolation function, the closure/isolation of inoperable affected valves can be extended to 24 hours. If the FCV or associated bypass valve in the same flowpath are not capable of performing the isolation function then the inoperable FIVs must be closed or isolated within 4 hours. The FCV and associated FCV bypass valve are considered to be capable of performing the isolation function when TRM SRs 13.7.40.1 and 13.7.40.2 have been performed within the required testing interval.~~

The ~~24~~ 72 hour Completion Time takes into account the redundancy afforded by the remaining OPERABLE valves and ~~FCV and associated bypass valve which are capable of performing the isolation function. The 24 hour and the 4 hour Completion Times take into account~~ the low probability of an event occurring during this time period that would require isolation of the MFW flow paths. The 72 hour Completion Time~~s are~~ is reasonable, based on operating experience.

(continued)

BASES

ACTIONS (continued)

Inoperable FIVs that are closed or isolated must be verified on a periodic basis that they are closed or isolated. This is necessary to ensure that the assumptions in the safety analysis remain valid. The 7 day Completion Time is reasonable, based on engineering judgment, in view of valve status indications available in the control room, and other administrative controls, to ensure that these valves are closed or isolated. LCO 3.0.5 allows the FIVs to be opened as needed for post maintenance testing to demonstrate operability.

B.1 and B.2

With one FCV in one or more flow paths inoperable, action must be taken to restore the affected valves to OPERABLE status, or to close or isolate inoperable affected valves within 72 hours. When these valves are closed or isolated, they are performing their required backup safety function.

The 72 hour Completion Time takes into account the redundancy afforded by the remaining OPERABLE valves and the low probability of an event occurring during this time period that would require isolation of the MFW flow paths. The 72 hour Completion Time is reasonable, based on operating experience.

Inoperable FCVs, that are closed or isolated, must be verified on a periodic basis that they are closed or isolated. The 7 day Completion Time is reasonable, based on engineering judgment, in view of valve status indications available in the control room, and other administrative controls, to ensure that these valves are closed or isolated. LCO 3.0.5 allows the FIVs to be opened as needed for post maintenance testing to demonstrate operability.

BC.1 and BC.2

With one associated bypass valve in one or more flow paths inoperable, action must be taken to restore the affected valves to OPERABLE status, or to close or isolate inoperable affected valves within 72 ~~4~~ hours. When these valves are closed or isolated, they are performing their required safety function.

The 72 ~~4~~ hour Completion Time takes into account the redundancy afforded by the remaining OPERABLE valves and the low probability of an event occurring during this time period that would require isolation of the MFW flow paths. The 72 ~~4~~ hour Completion Time is reasonable, based on operating experience.

(continued)

BASES

Inoperable associated bypass valves that are closed or isolated must be verified on a periodic basis that they are closed or isolated. This is necessary to ensure that the assumptions in the safety analysis remain valid. The 7 day Completion Time is reasonable, based on engineering judgment, in view of valve status indications available in the control room, and other administrative controls, to ensure that these valves are closed or isolated. LCO 3.0.5 allows the FIV bypass valves to be opened as needed for post maintenance testing to demonstrate operability.

D.1

With two inoperable valves in the same flow path, there may be no redundant system to operate automatically and perform the required safety function. Although the containment can be isolated with the failure of two valves in parallel in the same flow path, the double failure can be an indication of a common mode failure in the valves of this flow path, and as such, is treated the same as a loss of the isolation capability of this flow path. Under these conditions, affected valves in each flow path must be restored to OPERABLE status, or the affected flow path isolated within 8 hours. This action returns the system to the condition where at least one valve in each flow path is performing the required safety function. The 8 hour Completion Time is reasonable, based on operating experience, to complete the actions required to close the FIV or FCV, or otherwise isolate the affected flow path.

~~C~~E.1 and ~~C~~E.2

If the FIVs and FCVs and the associated bypass valve(s) cannot be restored to OPERABLE status, or closed, or isolated within the associated Completion Time, 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 12 hours. The allowed Completion Times 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.

(continued)

BASES (continued)

SURVEILLANCE REQUIREMENTS

SR 3.7.3.1

This SR verifies that the closure time of each FIV, FCV, and associated bypass valves is ≤ 5 seconds. The FIV and FCV isolation times are assumed in the accident and containment analyses. This Surveillance is normally performed upon returning the unit to operation following a refueling outage. This is consistent with RG 1.22 (Ref. 4).

The Frequency for this SR is in accordance with the Inservice Testing Program. Per Ref. 5, if it is necessary to adjust stem packing to stop packing leakage and if a required stroke test is not practical in the current plant mode, it should be shown by analysis that the packing adjustment is within torque limits specified by the manufacturer for the existing configuration of packing, and that the performance parameters of the valve are not adversely affected. A confirmatory test must be performed at the first available opportunity when plant conditions allow testing. Packing adjustments beyond the manufacturer's limits may not be performed without (1) an engineering analysis and (2) input from the manufacturer, unless tests can be performed after adjustments.

SR 3.7.3.2

This SR verifies that each FIV, FCV, and associated bypass valve can close on an actual or simulated actuation signal. This Surveillance is normally performed upon returning the unit to operation following a refueling outage.

The frequency of this surveillance is every 18 months. The 18 month Frequency for testing is based on the refueling cycle. Operating experience has shown that these components usually pass the Surveillance when performed at the 18 month Frequency. Therefore, this Frequency is acceptable from a reliability standpoint.

REFERENCES

1. FSAR, Chapters 6, 7, 10 and 15.

2. Not used

3. NUREG-0138, "Staff Discussion of Fifteen Technical Issues Listed in Attachment to November 3, 1076 Memorandum from Director, NRR to NRR Staff," November 1976.

4. RG 1.22, A Periodic Testing of Protection System Actuation Functions, (2/17/72).

5. NUREG-1482, "Guidelines for Inservice Testing at Nuclear Power Plants,"

ATTACHMENT 4 to TXX-02010

CLEAN TECHNICAL SPECIFICATION PAGES

Pages 3.7-8 and 3.7-9

3.7 PLANT SYSTEMS

4.0.1 Feedwater Isolation Valves (FIVs) and Feedwater Control Valves (FCVs) and Associated Bypass Valves

LCO 3.7.3 Four FIVs, four FCVs, and associated bypass valves shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3 except when FIV, FCV or associated bypass valve is closed and de-activated or isolated by a closed manual valve

ACTIONS

----------NOTE----------
Separate Condition entry is allowed for each valve.

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One or more FIVs inoperable.	A.1	Close or isolate FIV.	72 hours
	AND		
	A.2	Verify FIV is closed or isolated.	Once per 7 days
B. One or more FCVs inoperable.	B.1	Close or isolate FCV.	72 hours
	AND		
	B.2	Verify FCV is closed or isolated.	Once per 7 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. One or more FIV or FCV bypass valves inoperable.	C.1	Close or isolate bypass valve.	72 hours
	AND		
	C.2	Verify bypass valve is closed or isolated.	Once per 7 days
D. Two valves in the same flowpath inoperable	D.1	Isolate affected flow path.	8 hours
E. Required Action and associated Completion Time not met.	E.1	Be in MODE 3.	6 hours
	AND		
	E.2	Be in MODE 4.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.3.1	Verify the isolation time of each FIV, FCV, and associated bypass valves is ≤ 5 seconds.	In accordance with the Inservice Testing Program
SR 3.7.3.2	Verify each FIV, FCV, and associated bypass valves actuates to the isolation position on an actual or simulated actuation signal.	18 months