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Ref: 10CFR50.90

CPSES-200301612
Log # TXX-003078
File # 00236

September 23, 2003

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) 03-004
REVISION TO TECHNICAL SPECIFICATION (TS) 3.6.3 TO
EXTEND SURVEILLANCE REQUIREMENT (SR) 3.6.3.7
FREQUENCY FOR CONTAINMENT PURGE, HYDROGEN PURGE
AND CONTAINMENT PRESSURE RELIEF VALVES
WITH RESILIENT SEATS

Gentlemen:

Pursuant to 10CFR50.90, TXU Generation Company LP (TXU Energy) 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 (TS). This change request applies to both units.

The proposed change will revise TS 3.6.3 entitled "Containment Isolation Valves," to extend the frequency of Surveillance Requirement (SR) 3.6.3.7 for the containment purge, hydrogen purge and containment pressure relief valves with resilient seats.

Attachment 1 provides a detailed description of the proposed changes, a safety analysis of the proposed changes, TXU Energy's determination that the proposed changes do not involve a significant hazard consideration, a regulatory analysis of the proposed changes and an environmental evaluation. Attachment 2 provides the affected Technical Specification pages marked-up to reflect the proposed changes. Attachment 3 provides proposed changes to the Technical Specification Bases for information only. The Bases changes will be processed per CPSES site procedures. Attachment 4 provides retyped Technical Specification pages which incorporate the requested changes. Attachment 5 provides retyped Technical Specification Bases pages for information only.

D029

TXU Energy requests approval of the proposed License Amendment by September 1, 2004 to be implemented within 60 days of the issuance of the license amendment. The approval date was administratively selected to allow for NRC review but the plant does not require this amendment to allow continued safe full power operations.

TXU Energy is submitting this license amendment application as a result of a mutual agreement by an industry consortium of six plants known as Strategic Teaming and Resource Sharing (STARS). The STARS group consists of the six plants operated by TXU Energy, AmerenUE, Wolf Creek Operating Corporation, Pacific Gas and Electric Company, STP Nuclear Operating Company, and Arizona Public Service Company. Diablo Canyon will be submitting a similar license amendment application in parallel with Comanche Peak.

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

This communication contains no new or revised commitments.

Should you have any questions, please contact Mr. Jack Hicks at (254) 897-6725 or e-mail (jhicks1@txu.com).

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

Executed on September 23, 2003.

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

JCH/jch
Attachments
1. Description and Assessment
2. Markup of Technical Specifications pages
3. Markup of Technical Specifications Bases pages (for information)
4. Retyped Technical Specifications pages
5. Retyped Technical Specifications Bases pages (for information)

c - B. S. Mallett, Region IV
W. D. Johnson, Region IV
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ATTACHMENT 1 to TXX-03078

DESCRIPTION AND ASSESSMENT

LICENSEE'S EVALUATION

1.0 DESCRIPTION

By this letter, TXU Energy 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. Proposed change, LAR-03-04, is a request to revise Technical Specifications (TS) 3.6.3, entitled "Containment Isolation Valves," extending the frequency of Surveillance Requirement (SR) 3.6.3.7 for the containment purge, hydrogen purge and containment pressure relief valves with resilient seats. Currently, the containment purge, containment hydrogen purge and containment pressure relief valves are tested every 184 days and within 92 days after opening the valves. The proposed interval for all three is 18 months.

No changes to the CPSES Final Safety Analysis Report are anticipated at this time as a result of this License Amendment Request.

2.0 PROPOSED CHANGE

The proposed change would revise SR 3.6.3.7 to extend the testing frequency of the containment purge, hydrogen purge and containment pressure relief valves with resilient seats.

Currently SR 3.6.3.7 requires leakage rate testing of the containment purge, hydrogen purge and containment pressure relief valves with resilient seals every 184 days and within 92 days after opening the valves. The surveillance verifies that the measured leakage rate is less than 0.05 L_a (0.06 L_a for containment pressure relief) when pressurized to P_a.

The proposed change extends the interval to 18 months between tests and deletes the "within 92 days after opening the valves" requirement.

These changes will allow the required leakage testing to be performed no more frequently than once per refueling outage.

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

3.0 BACKGROUND

The containment purge system, hydrogen purge system and the containment pressure relief system are described in FSAR Section 9.4A and in FSAR Figures 9.4-5, 9.4-6 and 9.4-9.

Containment Purge System (48 inch purge valves)

The containment purge system operates to supply outside air into the containment for ventilation and cooling or heating needed for prolonged containment access following a shutdown and during refueling. The system may also be used to reduce the concentration of noble gases within containment prior to and during personnel access. The supply and exhaust lines each contain two isolation valves. Because of their large size, the 48 inch containment purge valves are not qualified for automatic closure from their open position under DBA conditions. Therefore, the 48 inch containment purge supply and exhaust isolation valves are required by TS 3.6.3 to be maintained closed in Modes 1, 2, 3, and 4 to ensure the containment boundary is maintained.

Hydrogen Purge System (12 inch purge valves)

The hydrogen purge system is a supplementary system for the electric hydrogen recombiners and operated for hydrogen dilution in the containment following a Loss of Coolant Accident (LOCA) once pressure is below 5 psig. Because the 12 inch containment hydrogen purge supply and exhaust valves are not qualified for automatic closure from their open position under initial Design Basis Accident (DBA) conditions, they are normally maintained closed in Modes 1, 2, 3, and 4 to ensure the containment boundary is maintained.

Containment Pressure Relief System (18 inch discharge isolation valves)

The containment pressure relief valves are operated to equalize containment internal and external pressures. The penetration has a effective diameter of three inches provided by the installation of a debris screen cover inside containment. Since the 18 inch containment pressure relief valves are designed to meet the requirements for automatic containment purge isolation valves and have an effective opening of only 3 inches, these valves may be opened as needed in Modes 1, 2, 3, and 4.

History of Containment Purge Valves

In the late 1980s, 10CFR50, Appendix J, "Primary Reactor Containment Leakage Testing for Water-Cooled Power Reactors," required containment isolation valves, including containment purge and vent valves, to be subjected to local leakage rate tests at every refueling outage, but not to exceed two year intervals. Compliance with Appendix J provides assurance that the leakage rate of the containment, including those systems and components which penetrate the containment, does not exceed the allowable leakage rate specified in the TS and Bases. The allowable leakage rate is determined so that the leakage rate assumed in the safety analyses is not exceeded.

However, in the 1970s, the NRC staff had determined that containment purge and vent valves were, as a class, a special problem in terms of leakage rate. Experience had shown that

containment purge and vent valves with resilient seals were more susceptible than other containment isolation valves to degradation caused by environmental factors (such as temperature extremes, and changes in humidity and barometric pressure) and mechanical factors (such as wear and tear, and hardening of resilient seats due to aging and exposure to radiation). This degradation not only could cause high and rapidly increasing leakage rates, but the radiological consequences of such leaks were more significant than for other valves because of the containment purge and vent valves' typically large diameters and the direct connection they provided between the containment atmosphere and the outside environment.

As part of the resolution of Generic Issue B-20 (later renamed Multi-Plant Action MPA-B020), "Containment Leakage Due to Seal Deterioration," the NRC staff decided to increase the frequency of local leakage rate testing of containment purge and vent valves, beyond the frequency required by Appendix J. This would limit the time in which the valves might be inoperable due to excessive leakage, and made it more likely that a licensee would catch and correct advancing degradation before it became extreme. Although there was some variation a typical testing arrangement was to have "passive" valves (those not opened during plant operation) tested every 6 months and "active" valves (those opened during plant operation) tested within 3 months of being operated. This is the current testing arrangement at CPSES, Units 1 and 2, where the containment and hydrogen purge valves are sealed closed during plant operation and the containment pressure relief valves are sometimes opened during plant operation.

The increased test frequencies were not imposed through regulation but through plant Technical Specifications. Appendix J does not contain any special requirements (i.e., 3 and 6 month tests) for containment purge and vent valves, although the same tests are usually used to fulfill Appendix J requirements when they come due.

In 1995, the NRC revised Appendix J to add a new, performance-based option for testing, called Option B. The NRC also published Regulatory Guide (RG) 1.163, "Performance-Based Containment Leak-Test Program," dated September 1995, which was developed as a method acceptable to the NRC staff for implementing Option B. This RG states that the Nuclear Energy Institute (NEI) guidance document NEI 94-01, Rev. 0, "Industry Guideline for Implementing Performance-Based Option of 10 CFR Part 50, Appendix J," dated July 26, 1995, provides methods acceptable to the NRC staff for complying with Option B. RG 1.163 allows an extension in Type A (integrated leakage rate) test frequency to at least one test in 10 years based upon two consecutive successful tests. Type B tests (local leakage rate tests of containment penetrations such as electrical penetrations) may be extended up to a maximum interval of 10 years based upon completion of two consecutive successful tests. Type C tests (local leakage rate tests of containment isolation valves) may be extended up to 5 years based on two consecutive successful tests.

However, despite the fact that most other containment isolation valves may have test intervals of up to 5 years, RG 1.163 does not let the containment purge and vent valves go to an extended interval. This is in consideration of their past poor operating experience and the safety significance of their large diameter and direct connection between the containment atmosphere and the outside environment. Also, this still did not directly affect the more frequent (3 and 6 month) tests contained in plant TSs, which, as stated before, go beyond the requirements of Appendix J.

Subsequent to the problems observed in the 1970s, the industry has made considerable strides in correcting the deficiencies of containment purge and vent valves with resilient seals. Improved seal materials, quality control, and modifications of equipment and environmental conditions

have largely corrected valve deficiencies in many plants. Several plants have requested, and the NRC staff has granted, TS changes to eliminate the more frequent testing requirements, allowing testing at what is essentially a refueling outage interval. The NRC staff has granted these reliefs on the basis of good valve performance demonstrated by plant-specific historical leakage rate testing results. Each plant must show that their containment purge and vent valves have had consistently good performance and are thus unlikely to experience significant degradation between tests when the test interval is lengthened.

4.0 TECHNICAL ANALYSIS

4.1 Containment Purge System Design

The containment purge isolation valves, penetrations, and supports are Safety Class 2, seismic category I.

Containment Purge

There are two isolation valves included in the containment purge supply subsystem, and two on the containment purge exhaust subsystem. For each subsystem, one air operated isolation valve is inside the containment and one is outside the containment. Containment purge isolation valves are designed to fail closed on loss of power. Each is a butterfly valve with resilient seals.

Interlocks are provided to automatically close the valves upon containment ventilation isolation signal. The containment purge system isolation valves are kept closed during operational conditions other than cold shutdown and refueling.

The exhaust from containment purge goes through high efficiency HEPA filters which are designed for greater than 95 percent efficiency. Charcoal filters are also provided for all exhaust from containment.

The containment purge system operates during refueling operations. Should a fuel handling accident occur inside containment, the containment radiation monitor will sense the increased radiation levels and generate the containment ventilation isolation signal to isolate the containment. This prevents further release of radioactive materials to the environment, and ensures that resulting accident doses are minimized; however, this function is not required to ensure that the doses are well within the limits prescribed by 10CFR100.

Hydrogen Purge

At each hydrogen purge penetration one isolation valve is located outside of containment and two isolation valves, in parallel, are located inside containment. The hydrogen purge isolation motor operated valves are designed to fail as-is on loss of power. Each is a butterfly valve with resilient seals. Interlocks are provided to automatically close the valves upon containment ventilation isolation signal. The containment purge system isolation valves are required by TS 3.6.3 to be kept closed during Modes 1, 2, 3 and 4.

Containment Pressure Relief System

The containment pressure relief system is designed to relieve containment pressure of up to

1.5 psig. There are two isolation valves included in the containment pressure relief system. Both valves have air operators that fail closed on loss of power. Interlocks are provided to automatically close the valves upon containment ventilation isolation signal. In the event of a LOCA or other Design Basis Accident (DBA) while the containment pressure relief system is in operation, containment isolation occurs such that resultant offsite doses are kept within the limits prescribed by 10CFR100.

Filters are provided in the exhaust from the containment purge, hydrogen purge and containment pressure relief systems. High efficiency HEPA and charcoal filters are provided to filter the air coming from the containment prior to being exhausted through the plant vent.

4.2 Operability Testing

Method

The containment purge, hydrogen purge and pressure relief isolation valves are tested as Type C valves against the criteria of 10CFR50 Appendix J. These valves are locally leak-tested by local pressurization to the maximum calculated accident containment pressure. Each valve to be tested is closed by normal operation without any preliminary exercising or adjustments (e.g., no tightening of the valve after closure by the valve actuator).

The administrative limit for measured leakage through the containment purge valves is 12,500 sccm per penetration when pressurized to the peak accident containment pressure.

The administrative limit for measured leakage through the hydrogen purge valves is 12,500 sccm per penetration when pressurized to the peak accident containment pressure.

The administrative limit for measured leakage through the containment pressure relief valves is 15,100 sccm per penetration when pressurized to the peak accident containment pressure.

Test Results

Review of results of tests performed beginning 1993, identified one instance of unacceptable seat leakage on September 23, 1999, out of over 200 tests performed. One of the Unit 1 containment normal purge penetrations (MV-2) was found to have leakage exceeding the acceptance criteria. It was corrected by adjusting the valve stop nut which fully engaged the valve disk into the seat, followed by a satisfactory retest. The one failure that did occur was found to have been in one of two valves and that the other valve did maintain pressure. There have been no other failures of these valves during this period.

4.3 Radiological Consequences

Refueling

CPSES has an adequate system for mitigation of the radiological consequences of a postulated fuel handling accident inside the containment. Should an accident occur inside containment during refueling, the containment purge system would be in operation; the activity escaping the water in the refueling cavity would be exhausted to the environment until containment isolation is achieved. The analysis of the radiological consequences of a fuel handling accident inside the containment would use the same assumptions and yield the same results as those of a fuel handling accident outside containment. Based on the assumptions for a fuel handling accident outside the containment as described in FSAR Section 15.7.4.3.1, the thyroid and whole body doses at the Exclusion Area Boundary (EAB) are conservatively calculated to be 53.9 rem and 0.44 rem, respectively. The corresponding doses at the Low Population Zone (LPZ) are conservatively calculated to be 7.75 rem and 6.29×10^{-2} rem. The calculated doses are well within the values set forth in 10CFR100.

Design Basis Loss-of-Coolant Accident

LOCA analyses assume containment leakage of 0.1% of the containment volume per day for the first 24 hours and 0.05% per day for the duration of the accident.

4.4 Risk Assessment

The major contributors to LERF are loss of offsite power, Interfacing System LOCAs and other by-pass scenarios, and steam generator tube rupture. The containment ventilation valves of interest here, namely the 48-inch containment purge valve, the 12-inch hydrogen purge valves, and the containment pressure relief valves, do not contribute significantly to Large Early Release Frequency (LERF). The 48-inch containment purge and the 12-inch hydrogen purge valves are not explicitly modeled in the CPSES PRA because they are normally locked closed and not manipulated during power (Mode 1). The containment pressure relief valves are manipulated at power and therefore they are modeled. to represent the containment ventilation system. The potential failure of these containment pressure relief valves to close when required contributes a very small measure to the LERF. Since extending the intervals between leakage rate tests on the containment purge valves, hydrogen purge valves, and the containment pressure relief valves does not impact the failure of these valves to close, the proposed change will not increase LERF for this failure mode.

The impact of this proposed change in interval could potentially be seen in the capability of these valves to maintain their leak tightness throughout the extended interval. The risk significance of this aspect of the proposed change in interval was evaluated using two accepted methods. Each method has been previously used at CPSES in support of risk informed applications. These are the ISLOCA methodology (mathematical equations to evaluate the change in test interval) and the RI-IST methodology (applying a proportional increase in failure rate to affected components). Both methods provide insight into the potential increase in penetration leak rate that may occur with an extension in test interval. The results of these evaluations concluded that the proposed change is not risk significant (LERF/CLERP $< 5 \times 10^{-8}$) and therefore, the increased test intervals (from the current 3 month or 6 month to each refueling outage) are supported.

4.5 Reliability

Containment Purge Valves

The containment purge system valves used for containment isolation are 48 inches in diameter. Containment purge supply and exhaust isolation valves cannot be exercised during power operation because of the Technical Specification requirement that these valves remain closed. The valves are normally left undisturbed between refueling outages. Leakage at the exhaust and supply penetrations is measured prior to plant startup. LOCA analyses assume containment leakage of 0.1% of the containment volume per day for the first 24 hours and 0.05% per day for the duration of the accident.

Hydrogen Purge Valves

The hydrogen purge system is a supplementary system for the electric recombiners and operated for hydrogen dilution in the containment following a LOCA once pressure is below 5 psig. Because the 12 inch containment hydrogen purge supply and exhaust valves are not qualified for automatic closure from their open position under initial DBA conditions, they are normally maintained closed in Modes 1, 2, 3, and 4 to ensure the containment boundary is maintained.

Containment Pressure Relief Valves

During power operation, release of instrument air from air-operated valves inside containment pressurizes the containment building. Containment pressure is monitored and conditions approaching the limits allowed by the Technical Specifications are annunciated. The increase in the containment pressure is reduced by periodic operation of the containment pressure relief valves. The recurring need to relieve containment pressure through purging indicates that the seals are effective in maintaining containment isolation. LOCA analyses assume containment leakage of 0.1% of the containment volume per day for the first 24 hours and 0.05% per day for the duration of the accident.

4.6 Summary

Previous test results performed at the current three month and six month intervals confirm that the containment purge, hydrogen purge and containment pressure relief isolation valves experience a very low incidence of leakage exceeding allowable limits. 10CFR100.11(a)(1) and (2) specify the thyroid dose limit of 300 rem at the exclusion area boundary and the low population zone outer boundary. The redundant valve arrangement provides assurance that the 10CFR100 dose limits will not be exceeded. Based upon the above, extending the interval between operability tests of the containment purge, hydrogen purge and containment pressure relief isolation valves to 18 months is justified.

5.0 REGULATORY SAFETY ANALYSIS

5.1 No Significant Hazards Consideration

TXU Energy has evaluated whether or not a significant hazards consideration is involved with the proposed amendment(s) by focusing on the three standards set forth in 10CFR50.92, "Issuance of amendment," as discussed below:

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

   Response: No

   Operability and leakage control effectiveness of the containment purge, hydrogen purge and containment pressure relief system isolation valves have no effect on whether or not an accident occurs. Consequently, increasing the interval between surveillances of isolation valve leakrate does not involve a significant increase in the probability of an accident previously evaluated. The consequences of a non-isolated reactor containment building at the time of a fuel-handling accident or LOCA is release of radionuclides to the environment. Analyses have conservatively assumed that a containment pressure relief system line is open at the time of an accident, and release to the environment continues until the isolation valves are closed. In addition, LOCA analyses assume containment leakage of 0.1% of the containment volume per day for the first 24 hours and 0.05% per day for the duration of the accident. Consequently, increasing the interval between surveillances of isolation valve leakrate does not involve a significant increase in the 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

   The proposed changes do not involve a modification to the physical configuration of the plant (i.e., no new equipment will be installed) or change in the methods governing normal plant operation. The proposed change will not impose any new or different requirements or introduce a new accident initiator, accident precursor, or malfunction mechanism. The functions of the containment purge, hydrogen purge and containment pressure relief systems are not altered by this change. Therefore, this proposed change does not create the possibility of an accident of a different kind than previously evaluated.

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

   Response: No

   This proposed change only increases the interval between surveillance tests of the containment purge, hydrogen purge and containment pressure relief system valves. Analyses have conservatively assumed that the containment purge valves are open at the time of a fuel handling accident, and that containment pressure relief valve is open at the time of a loss of coolant accident. In addition, LOCA analyses assume containment leakage of 0.1% of the containment volume per day

for the first 24 hours and 0.05% per day for the duration of the accident. The radiological consequences of both a fuel handling accident and a LOCA are unchanged and remain within the 10CFR100 limits. Therefore, the proposed change does not involve a significant reduction in the margin of safety. Therefore the proposed change does not involve a reduction in a margin of safety.

Based on the above evaluations, TXU Energy concludes that the proposed amendment(s) present no significant hazards consideration under the standards set forth in 10CFR50.92(c) and, accordingly, a finding of "no significant hazards consideration" is justified.

5.2 Applicable Regulatory Requirements/Criteria

The CPSES has implemented the performance-based Option B of 10CFR50 Appendix J for containment leakage rate testing. However, the current test intervals, six months for containment purge, hydrogen purge and containment pressure relief valves with resilient seals and within 92 days after opening the valves, are not based on 10CFR50 Appendix J considerations. Generic Issue B-20, "Containment Leakage Due to Seal Deterioration," provides the basis for the determination that valves with resilient seals should be tested more frequently than required by Appendix J. Excessive leakage past the resilient seats of isolation valves in purge vent lines is typically caused by severe environmental conditions and/or wear due to frequent use. This led to the conclusion that leakage test frequency for these valves should be keyed to the occurrence of severe environmental conditions and the use of the valves, rather than the current requirements of 10CFR50, Appendix J. The background for this conclusion is discussed in IE Circular 77-11, "Leakage of Containment Isolation Valves With Resilient Seats," issued on September 6, 1977. However, the industry has made considerable strides in correcting the deficiencies of containment purge and vent valves with resilient seals. Improved seal materials, quality control, and modifications of equipment and environmental conditions have largely corrected valve deficiencies. For CPSES, the historical testing record for these valves has demonstrated a very low failure rate for the required leakage rate testing.

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.

6.0 ENVIRONMENTAL CONSIDERATION

TXU Energy 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 Energy 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

The NRC has approved similar changes for a number of plants (e.g., see Amendment Nos. 169 and 173 for Point Beach Nuclear Plant, Units 1 and 2, dated October 9, 1996; Amendment No. 49 for Seabrook Station, Unit 1, dated February 24, 1997; Amendment Nos. 207 and 188 for McGuire Nuclear Station, Units 1 and 2, dated September 4, 2002; and Amendment Nos. 147 and 135 for South Texas Project, Units 1 and 2, dated January 7, 2003). The NRC granted approval on the basis of good valve performance demonstrated by plant-specific historical leakage rate testing results. Each plant showed that their containment purge and vent valves have had consistently good performance and are thus unlikely to experience significant degradation between tests when the test interval is lengthened.

ATTACHMENT 2 to TXX-03078

PROPOSED TECHNICAL SPECIFICATION CHANGES (MARK-UP)

Page 3.6-14

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.3.6	Not used.	
SR 3.6.3.7	----------NOTE---------- This surveillance is not required when the penetration flow path is isolated by a leak tested blank flange. --- Perform leakage rate testing for containment purge, hydrogen purge and containment pressure relief valves with resilient seals.	18 months~~184 days~~ ~~AND~~ ~~Within 92 days after opening the valve~~
SR 3.6.3.8	Verify each automatic containment isolation valve that is not locked, sealed or otherwise secured in position, actuates to the isolation position on an actual or simulated actuation signal.	18 months
SR 3.6.3.9	Not used.	
SR 3.6.3.10	Not used.	
SR 3.6.3.11	Not used.	

(continued)

ATTACHMENT 3 to TXX-03078

PROPOSED TECHNICAL SPECIFICATION BASES CHANGES (MARK-UP)
(For Information Only)

Pages B3.6-22, B3.6-23, B3.6-27 & B3.6-30

BASES

ACTIONS

C.1 and C.2 (continued)

Required Action C.2 is modified by two Notes. Note 1 applies to valves and blind flanges located in high radiation areas and allows these devices to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since access to these areas is typically restricted. Note 2 applies to isolation devices that are locked, sealed, or otherwise secured in position and allows these devices to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since the function of locking, sealing, or securing components is to ensure that these devices are not inadvertently repositioned. Therefore, the probability of misalignment of these valves, once they have been verified to be in the proper position, is small.

D.1, D.2 and D.3

In the event one or more Containment Purge, Hydrogen Purge, or Containment Pressure Relief isolation valves in one or more penetration flow paths are not within leakage limits, leakage must be reduced to within limits, or the affected penetration flow path must be isolated. The method of isolation must be by the use of at least one isolation barrier that cannot be adversely affected by a single active failure. Isolation barriers that meet this criterion are a closed and de-activated automatic valve, closed manual valve (this includes power operated valves with power removed), or blind flange. A Containment Purge, Hydrogen Purge, or Containment Pressure Relief isolation valve with resilient seals utilized to satisfy Required Action D.1 must have been demonstrated to meet the leakage requirements of SR 3.6.3.7. The specified Completion Time is reasonable, considering that one valve remains closed so that a gross breach of containment does not exist.

In accordance with Required Action D.2, this penetration flow path must be verified to be isolated on a periodic basis. The periodic verification is necessary to ensure that containment penetrations required to be isolated following an accident, which are no longer capable of being automatically isolated, will be in the isolation position should an event occur. This Required Action does not require any testing or valve

(continued)

BASES

ACTIONS D.1, D.2 and D.3 (continued)

manipulation. Rather, it involves verification through a system walkdown (which may include the use of local or remote indicators), that those isolation devices outside containment capable of being mispositioned are in the correct position. For the isolation devices inside containment, the time period specified as "prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days" is based on engineering judgment and is considered reasonable in view of the inaccessibility of the isolation devices and other administrative controls that will ensure that isolation device misalignment is an unlikely possibility.

For the Containment Purge, Hydrogen Purge, or Containment Pressure Relief isolation valve with resilient seal that is isolated in accordance with Required Action D.1, SR 3.6.3.7 must be performed at least once every 92 days. This assures that degradation of the resilient seal is detected and confirms that the leakage rate of the containment purge valve does not increase during the time the penetration is isolated. The normal Frequency for SR 3.6.3.7 is 18 months per the Containment Leakage Rate Testing Program ~~184 days, is based on an NRC initiative, Multi-Plant Action No. B-20 (Ref. 4)~~. Since more reliance is placed on a single valve while in this Condition, it is prudent to perform the SR more often. Therefore, a Frequency of once per 92 days was chosen and has been shown to be acceptable based on operating experience. Required Action D.2 is modified by two Notes. Note 1 applies to isolation devices located in high radiation areas and allows these devices to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since access to these areas is typically restricted. Note 2 applies to isolation devices that are locked, sealed, or otherwise secured in position and allows these devices to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since the function of locking, sealing, or securing components is to ensure that these devices are not inadvertently repositioned.

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.3.5

Verifying that the isolation time of each automatic power operated containment isolation valve is within limits is required to demonstrate OPERABILITY. An automatic power operated containment isolation valve is a containment isolation valve which is required to be closed by an automatic (i.e., other than operator manual) actuation signal and is powered by other than manual actuation (e.g., by an air or motor operator). The isolation time test ensures the valve will isolate in a time period less than or equal to that assumed in the FSAR [Ref. 2]. The isolation time and Frequency of this SR are in accordance with the Technical Requirements Manual and the Inservice Testing Program.

SR 3.6.3.6

Not used.

SR 3.6.3.7

~~For~~The Containment Purge, Hydrogen Purge, and Containment Pressure Relief valves with resilient seals, ~~additional~~are leakage rate ~~testing~~tested ~~beyond the test~~per the requirements of 10 CFR 50, Appendix J, Option B ~~is required~~ to ensure OPERABILITY. ~~Operating experience has demonstrated that this type of seal has the potential to degrade in a shorter time period than do other seal types. Based on this observation and the importance of maintaining this penetration leak tight (due to the direct path between containment and the environment), a Frequency of 184 days was established as part of the NRC resolution of Multi Plant Action No. B-20, "Containment Leakage Due to Seal Deterioration" (Ref. 4).~~

~~Additionally, this SR must be performed within 92 days after opening the valve. The 92 day Frequency was chosen recognizing that cycling the valve could introduce additional seal degradation (beyond that occurring to a valve that has not been opened). Thus, decreasing the interval (from 184 days) is a prudent measure after a valve has been opened.~~

(continued)

BASES (continued)

REFERENCES

1. FSAR, Section 15.
2. FSAR, Section 6.2.
3. Standard Review Plan 6.2.4.
4. ~~Multi-Plant Action MPA-B020, "Containment Leakage Due to Seal Deterioration."~~ Not used
5. Multi-Plant Action MPA-B024, "Venting and Purging Containments While at Full Power and Effect of LOCA."
6. Technical Requirements Manual.
7. NUREG-0737, II.E.4.
8. BTP CSB 6-4.
9. DBD-ME-013.
10. 10 CFR 50, Appendix J, Option B.
11. Regulatory Guide 1.163 (September 1995).

ATTACHMENT 4 to TXX-03078

RETYPED TECHNICAL SPECIFICATION PAGES

Page 3.6-14

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.3.6	Not used.	
SR 3.6.3.7	----------NOTE---------- This surveillance is not required when the penetration flow path is isolated by a leak tested blank flange. ---------- Perform leakage rate testing for containment purge, hydrogen purge and containment pressure relief valves with resilient seals.	18 months
SR 3.6.3.8	Verify each automatic containment isolation valve that is not locked, sealed or otherwise secured in position, actuates to the isolation position on an actual or simulated actuation signal.	18 months
SR 3.6.3.9	Not used.	
SR 3.6.3.10	Not used.	
SR 3.6.3.11	Not used.	

(continued)

ATTACHMENT 5 to TXX-03078

RETYPED TECHNICAL SPECIFICATION BASES PAGES
(For Information Only)

Pages B3.6-22, B3.6-233, B3.6-27 & B3.6-30

BASES

ACTIONS

C.1 and C.2 (continued)

Required Action C.2 is modified by two Notes. Note 1 applies to valves and blind flanges located in high radiation areas and allows these devices to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since access to these areas is typically restricted. Note 2 applies to isolation devices that are locked, sealed, or otherwise secured in position and allows these devices to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since the function of locking, sealing, or securing components is to ensure that these devices are not inadvertently repositioned. Therefore, the probability of misalignment of these valves, once they have been verified to be in the proper position, is small.

D.1, D.2 and D.3

In the event one or more Containment Purge, Hydrogen Purge, or Containment Pressure Relief isolation valves in one or more penetration flow paths are not within leakage limits, leakage must be reduced to within limits, or the affected penetration flow path must be isolated. The method of isolation must be by the use of at least one isolation barrier that cannot be adversely affected by a single active failure. Isolation barriers that meet this criterion are a closed and de-activated automatic valve, closed manual valve (this includes power operated valves with power removed), or blind flange. A Containment Purge, Hydrogen Purge, or Containment Pressure Relief isolation valve with resilient seals utilized to satisfy Required Action D.1 must have been demonstrated to meet the leakage requirements of SR 3.6.3.7. The specified Completion Time is reasonable, considering that one valve remains closed so that a gross breach of containment does not exist.

In accordance with Required Action D.2, this penetration flow path must be verified to be isolated on a periodic basis. The periodic verification is necessary to ensure that containment penetrations required to be isolated following an accident, which are no longer capable of being automatically isolated, will be in the isolation position should an event occur. This Required Action does not require any testing or valve

(continued)

BASES

ACTIONS D.1, D.2 and D.3 (continued)

manipulation. Rather, it involves verification through a system walkdown (which may include the use of local or remote indicators), that those isolation devices outside containment capable of being mispositioned are in the correct position. For the isolation devices inside containment, the time period specified as "prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days" is based on engineering judgment and is considered reasonable in view of the inaccessibility of the isolation devices and other administrative controls that will ensure that isolation device misalignment is an unlikely possibility.

For the Containment Purge, Hydrogen Purge, or Containment Pressure Relief isolation valve with resilient seal that is isolated in accordance with Required Action D.1, SR 3.6.3.7 must be performed at least once every 92 days. This assures that degradation of the resilient seal is detected and confirms that the leakage rate of the containment purge valve does not increase during the time the penetration is isolated. The normal Frequency for SR 3.6.3.7 is 18 months per the Containment Leakage Rate Testing Program. Since more reliance is placed on a single valve while in this Condition, it is prudent to perform the SR more often. Therefore, a Frequency of once per 92 days was chosen and has been shown to be acceptable based on operating experience. Required Action D.2 is modified by two Notes. Note 1 applies to isolation devices located in high radiation areas and allows these devices to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since access to these areas is typically restricted. Note 2 applies to isolation devices that are locked, sealed, or otherwise secured in position and allows these devices to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since the function of locking, sealing, or securing components is to ensure that these devices are not inadvertently repositioned.

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.3.5

Verifying that the isolation time of each automatic power operated containment isolation valve is within limits is required to demonstrate OPERABILITY. An automatic power operated containment isolation valve is a containment isolation valve which is required to be closed by an automatic (i.e., other than operator manual) actuation signal and is powered by other than manual actuation (e.g., by an air or motor operator). The isolation time test ensures the valve will isolate in a time period less than or equal to that assumed in the FSAR [Ref. 2]. The isolation time and Frequency of this SR are in accordance with the Technical Requirements Manual and the Inservice Testing Program.

SR 3.6.3.6

Not used.

SR 3.6.3.7

The Containment Purge, Hydrogen Purge, and Containment Pressure Relief valves with resilient seals, are leakage rate tested per the requirements of 10 CFR 50, Appendix J, Option B to ensure OPERABILITY.

(continued)

BASES (continued)

REFERENCES

1. FSAR, Section 15.

2. FSAR, Section 6.2.

3. Standard Review Plan 6.2.4.

4. Not used

5. Multi-Plant Action MPA-B024, "Venting and Purging Containments While at Full Power and Effect of LOCA."

6. Technical Requirements Manual.

7. NUREG-0737, II.E.4.

8. BTP CSB 6-4.

9. DBD-ME-013.

10. 10 CFR 50, Appendix J, Option B.

11. Regulatory Guide 1.163 (September 1995).