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Ref: 10CFR50.90

CPSES-200102356
Log # TXX-01153
File # 00236

November 8, 2001

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) 01-10
REVISION TO TECHNICAL SPECIFICATION (TS) 3.9.4
CONTAINMENT PENETRATIONS

Gentlemen:

Pursuant to 10CFR50.90, TXU Electric 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 will revise TS 3.9.4 entitled "Containment Penetrations," to allow the equipment hatch to be open during CORE ALTERATIONS and/or during movement of irradiated fuel assemblies within containment. Appropriate TS Bases are included to reflect the proposed changes.

Attachment 1 is the required affidavit. Attachment 2 provides a detailed description of the proposed changes, a safety analysis of the proposed changes, TXU Electric'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 3 provides the affected Technical Specification pages marked-up to reflect the proposed changes. Attachment 4 provides proposed changes to the Technical Specification Bases for information only. These changes will be processed per CPSES site procedures. Attachment 5 provides retyped Technical Specification pages which incorporate the requested changes. Attachment 6 provides

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retyped Technical Specification Bases pages which incorporate the proposed changes.

TXU Electric requests that approval of this proposed License Amendment be provided by March 15, 2002. The Unit 2 Cycle 6 refueling outage is scheduled for March 30, 2002, and the revised TS will be made effective within 30 days of NRC approval. Although receipt of the Amendment is not required to conduct the outage or to restart the unit following the outage, implementation of the requested TS change prior to the outage will allow planned outage work to proceed in conjunction with critical path activities, thereby shortening the outage..

This communication contains the following new commitment which will be completed as noted:

Commitment Number	Commitment
27256	The administrative controls for the containment equipment hatch will be incorporated into the Technical Specification Bases for TS 3.9.4

The Commitment number is used by TXU Electric for the internal tracking of CPSES commitments.

TXU Electric is submitting this license amendment application as a result of a mutual agreement by an industry consortium of five plants known as Strategic Teaming and Resource Sharing (STARS). The STARS group consists of the five plants operated by TXU Electric, AmerenUE, Wolf Creek Nuclear Operating Corporation, Pacific Gas and Electric Company, and STP Nuclear Operating Company. The plant specific license amendment requests have been or will be submitted on a staggered basis. Wolf Creek is the lead plant for this license amendment.

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

Should you have any questions, please contact Mr. Jack Hicks at (254) 897-6725.

Sincerely,

C. L. Terry

By: Roger D. Walker

Roger D. Walker
Regulatory Affairs Manager

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

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

Mr. Arthur C. Tate
Bureau of Radiation Control
Texas Department of Public Health
1100 West 49th Street
Austin, Texas 78704

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of	)		
	)		
TXU Electric	)	Docket Nos.	50-445
	)		50-446
(Comanche Peak Steam Electric Station,	)	License Nos.	NPF-87
Units 1 & 2)	)		NPF-89

AFFIDAVIT

Roger D. Walker being duly sworn, hereby deposes and says that he is Regulatory Affairs Manager of TXU Electric, the licensee herein; that he is duly authorized to sign and file with the Nuclear Regulatory Commission this License Amendment Request 01-10; that he is familiar with the content thereof; and that the matters set forth therein are true and correct to the best of his knowledge, information and belief.

Roger D. Walker
Roger D. Walker
Regulatory Affairs Manager

STATE OF TEXAS)
)
COUNTY OF Somervell)

Subscribed and sworn to before me, on this 8th day of November, 2001.

Gayle Peck Jespersen
Notary Public

NOTARY PUBLIC STATE OF TEXAS
Gayle R. Peck Jespersen
Notary Public, State of Texas
My Comm. Expires 03/16/02

ATTACHMENT 2 to TXX-01153

DESCRIPTION AND ASSESSMENT

LICENSEE'S EVALUATION

1.0 INTRODUCTION

By this letter, TXU Electric 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 License Amendment Request (LAR)-01-10 is a request to revise Technical Specification (TS) 3.9.4, "Containment Penetrations," for Comanche Peak Steam Electric Station (CPSES) Units 1 and 2.

This amendment application would revise Technical Specification (TS) 3.9.4, "Containment Penetrations," to allow the equipment hatch to be open during CORE ALTERATIONS and/or during movement of irradiated fuel assemblies within containment. Appropriate TS Bases changes are included to reflect the proposed changes. The proposed changes will provide greater flexibility in outage scheduling by allowing operations to proceed without the restriction of equipment hatch closure.

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

2.0 DESCRIPTION OF PROPOSED AMENDMENT

The proposed change would revise Limiting Condition for Operation (LCO) 3.9.4 to allow the equipment hatch to be open during CORE ALTERATIONS and/or during movement of irradiated fuel assemblies within containment, provided that it is capable of being closed. A new Surveillance Requirement would be added to verify the capability to install the equipment hatch, if the hatch is open, at a Frequency of seven days.

The TS Bases are revised to reflect the changes to LCO 3.9.4 and the addition of the new Surveillance Requirement. Additionally, the Bases are revised to identify the administrative controls associated with the allowance to maintain the equipment hatch open.

3.0 BACKGROUND

The equipment hatch, which is part of the containment pressure boundary, provides a means for moving large equipment and components into and out of containment. Technical Specification 3.9.4, "Containment Penetrations," requires that the equipment hatch be closed and held in place by four bolts during fuel movement and CORE ALTERATIONS. This requirement ensures that a release of fission products within the containment will be restricted from escaping to the environment.

As described in Section 3.8.1.1.6 of the Final Safety Analysis Report (FSAR), the equipment hatch is a welded steel assembly with a double-gasketed, flanged, and bolted cover.

The equipment hatch has single dedicated hoist that is powered from a non-class 1E power supply. The hoist can be manually operated if power is lost.

As described in the BASES for TS 3.9.4, fuel handling accidents, analyzed in Reference 10.4, include dropping a single irradiated fuel assembly in either the containment or fuel building with no credit for isolation or filtration. The requirements of LCO 3.9.7, "Refueling Cavity Water Level," and the minimum decay time of 100 hours prior to CORE ALTERATIONS ensure that the release of fission product radioactivity, subsequent to a fuel handling accident, results in doses that are well within the guideline values specified in 10 CFR 100. Standard Review Plan, Section 15.7.4, Rev. 1, defines "well within" 10 CFR 100 to be 25% or less of the 10 CFR 100 values. Containment penetration closure is not required to meet the acceptance limits for offsite radiation exposure of 25% of 10 CFR 100 values. Containment penetrations satisfy Criterion 4 of 10CFR50.36(c)(2)(ii).

4.0 REGULATORY REQUIREMENTS AND GUIDANCE

The regulatory basis for TS 3.9.4, "Containment Penetrations," is to ensure that the primary containment is capable of containing fission product radioactivity that may be released from the reactor core following a fuel handling accident inside containment. This ensures that offsite radiation exposures are maintained well within the requirements of 10 CFR 100.

10 CFR Part 50, Appendix A, General Design Criterion (GDC) 16, "Containment Design," requires that 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 the postulated accident conditions require.

GDC 56, "Primary Containment Isolation," describes the isolation provisions that must be provided for lines that connect directly to the containment atmosphere and which penetrate primary reactor containment unless it can be demonstrated that the isolation provisions for a specific class of lines are acceptable on some other defined basis.

GDC 61, "Fuel Storage and Handling and Radioactivity Control," requires that the fuel storage and handling, radioactive waste, and other systems which may contain radioactivity shall be designed to assure adequate safety under normal and postulated accident conditions.

GDC 64, "Monitoring Radioactivity Releases," requires monitoring the reactor containment atmosphere, spaces containing components for recirculation of loss-of-coolant accident fluids, effluent discharge paths, and the plant environs for radioactivity that may be released from normal operations, including anticipated operational occurrences, and from postulated accidents.

U. S. NRC Regulatory Guide 1.25, "Assumptions Used for Evaluating the Potential Radiological Consequences of a Fuel Handling Accident in the Fuel Handling and Storage Facility for Boiling and Pressurized Water Reactors," is NRC guidance which describes a method acceptable to the NRC staff for licensee evaluation of the potential radiological consequences of a fuel handling accident.

NUREG-0800, "U. S. NRC Standard Review Plan," Section 15.7.4 (Reference 10.5), provides guidance to the NRC staff for the review and evaluation of system design features and plant procedures provided for the mitigation of the radiological consequences of postulated fuel handling accidents.

The parameters of concern and the acceptance criteria applied are based on the requirements of 10 CFR 100 with respect to the calculated radiological consequences of a fuel handling accident and GDC 61 with respect to appropriate containment, confinement, and filtering systems.

5.0 TECHNICAL ANALYSIS

The proposed changes would allow the equipment hatch to be open under administrative controls during CORE ALTERATIONS and/or during movement of irradiated fuel assemblies within containment, provided that it is capable of being closed. Allowing the equipment hatch to be open during CORE ALTERATIONS or movement of irradiated fuel raises the concern that radioactive materials could potentially be released through the open hatch and vented to the outside environment should accidents that involve fission product releases occur. Postulated accidents that could result in a release of radioactive material through the open hatch include a fuel handling accident that results in breaching of the fuel rod cladding. To provide the basis for justifying the proposed change, the concern with the potential radiological consequences of the fuel handling accident that could result in a release of radioactive material through the open equipment hatch is discussed below.

Fuel Handling Accident

During movement of irradiated fuel assemblies within containment, the most severe radiological consequences are anticipated to result from a fuel handling accident. The fuel handling accident is a postulated event that involves damage to irradiated fuel. Fuel handling accidents include dropping a single irradiated fuel assembly, or a handling tool or heavy object, onto other irradiated fuel assemblies.

The radiological consequences of a design basis fuel handling accident in containment have been previously evaluated assuming that the containment is open to the outside atmosphere. All airborne activity reaching the containment atmosphere is assumed to be exhausted to the environment within 2 hours of the accident. The calculated offsite and control room operator doses are within the acceptance criteria of Standard Review Plan 15.7.4 (Reference 10.5) and General Design Criteria (GDC) 19. On the basis of this evaluation, the previous revisions to Technical Specification Section 3.9.4, "Containment Penetrations," have been accepted by the NRC (References 10.1 and 10.2).

During refueling operations, the potential for containment pressurization as a result of a fuel handling accident is not likely. Therefore, the majority of the radioactive material releases from the accident would be held up inside containment with only a minimal amount of radioactive material released through the open equipment hatch. However, the combined dose consequences of this potential release with the releases through other unisolated penetration flow paths and the open personnel airlock doors, will be bounded by the current licensing basis fuel handling accident analysis. The current design basis fuel handling analysis does not credit the containment building barriers. It is assumed that all gap activity is released from the damaged rods and all the gaseous effluent escaping from the refueling cavity is released directly to the environment within two hours. No credit is taken for mixing of the gaseous effluents with the surrounding building atmosphere and removal of any iodine by the atmosphere filtration system filters.

According to Section 15.7.4 of the FSAR (Reference 10.4), the resulting offsite dose consequences with no isolation or filtration were calculated to be 53.9 rem thyroid and 0.44 rem whole body at the exclusion area boundary. These results are well within the 10 CFR 100 limits. Since the total amount of radioactive material available for immediate release into the water during a postulated fuel handling accident will be the same, the potential dose consequences from a simultaneous release of the gaseous effluents through the unisolated penetration flow paths, the open personnel airlock doors and the open equipment hatch will not be different from the previous analysis. Therefore, allowing the equipment hatch to be open during CORE ALTERATIONS or movement of irradiated fuel would not invalidate the conclusion that the potential dose consequences from a fuel handling accident will be well within the 10 CFR 100 guideline limits.

Administrative Controls

NUMARC 93-01, "Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," (Reference 10.3), Section 11.3.6.5, provides the following guidance:

> ".... for plants which obtain license amendments to utilize shutdown safety administrative controls in lieu of Technical Specification requirements on primary or secondary containment operability and ventilation system operability during fuel handling or core alterations, the following guidelines should be included in the assessment of systems removed from service:
>
> - During fuel handling/core alterations, ventilation system and radiation monitor availability (as defined in NUMARC 91-06) should be assessed, with respect to filtration and monitoring of releases from the fuel. Following shutdown, radioactivity in the RCS decays fairly rapidly. The basis of the Technical Specification operability amendment is the reduction in doses due to such decay. The goal of maintaining ventilation system and radiation monitor availability is to reduce doses even further below that provided by the natural decay, and to avoid unmonitored releases.
>
> - A single normal or contingency method to promptly close primary or secondary containment penetrations should be developed. Such prompt methods need not completely block the penetration or be capable of resisting pressure. The purpose is to enable ventilation systems to draw the release from a postulated fuel handling accident in the proper direction such that it can be treated and monitored."

The proposed changes do not affect the OPERABILITY requirements for any ventilation system or radiation monitors, nor does it affect their availability. The Control Room Emergency Ventilation System will be required to be OPERABLE by TS 3.7.10, "Control Room Emergency Filtration/Pressurization System (CREFS)," as well as the containment atmosphere radioactivity monitors (TS 3.3.6, "Containment Ventilation Isolation Instrumentation"). The only affected containment penetration that provides direct access to the outside atmosphere is the equipment hatch. Existing TS requirements on other penetrations that provide direct access are not affected.

Containment ventilation at CPSES is accomplished via the Containment Purge Supply and Exhaust System. This system is not credited in any of the dose analyses, so there are no associated TS OPERABILITY requirements for this system.. The Containment Purge Supply and Exhaust System operates to supply filtered and cooled outside air into the containment for ventilation and cooling 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 Containment Pressure Relief System may be used during power operations to equalize internal and external pressures.

Once cold shutdown is achieved, only the Containment Purge Supply and Exhaust System is required to operate. The system is manually initiated from the control room. The Containment Purge Supply and Exhaust System is designed to maintain the airborne radioactivity below the level required for personnel occupancy during refueling. The exhaust from this system is ducted to the Primary Plant Ventilation Exhaust System. The Primary Plant Ventilation Exhaust System HEPA filter elements and charcoal adsorber sections are tested periodically in accordance with Regulatory Guide 1.140. The handswitches for the fan units and the handswitches for the purge valves are located in the control room. Therefore, in the event of a fuel handling accident inside containment with the equipment hatch open, the containment purge can be easily controlled from the control room.

Exhaust from the containment is processed through the Primary Plant Ventilation Exhaust System charcoal adsorption units prior to discharge through the plant vents. The Primary Plant Ventilation exhaust is monitored for radioactivity downstream of the charcoal absorber. The containment atmosphere radioactivity monitors (u-RE-5502/03/66) continuously monitor the containment atmosphere for particulate, iodine, and gaseous radioactivity. These monitors isolate the Containment Purge Supply and Exhaust System on high gaseous activity via the Engineered Safety Features Actuation System (ESFAS). In the event of a fuel handling accident inside containment, the control room alarm function of the required containment radiation monitors will be in service, and the radiation monitors will provide indication of the magnitude of the release, thereby minimizing the potential for unmonitored release.

During CORE ALTERATIONS, Technical Requirements Manual (TRM) Section 13.9.32 (Reference 10.6), requires that direct communications be maintained between the control room and personnel at the refueling station. Therefore, if a fuel handling accident were to occur inside containment, the control room would be immediately informed, and action would be promptly initiated in accordance with off-normal procedures to mitigate the consequences.

If open, the equipment hatch will be maintained in an isolable condition, and the TS and Bases provides the requirements for closure of the equipment hatch. Administrative controls consisting of written procedures will be established prior to the implementation of the proposed change. These procedural controls would require:

1. Appropriate personnel are aware of the open status of the containment during movement of irradiated fuel or CORE ALTERATIONS.

2. Specified individuals are designated and readily available to close the equipment hatch following an evacuation that would occur in the event of a fuel handling accident.

3. Any obstructions (e.g., cables and hoses) that would prevent rapid closure of an open equipment hatch can be quickly removed.

These administrative controls provide protection equivalent to that afforded by the administrative controls used to establish containment closure for a containment personnel air lock. Outage shift/containment supervision is responsible for coordinating the equipment hatch closure activities. Personnel are designated for each shift during which CORE ALTERATIONS and/or movement of irradiated fuel (with the equipment hatch open) will take place. While these personnel will have normal outage related duties, these duties will not interfere with their availability to respond to the closure of the equipment hatch. Personnel responsible for closure of the equipment hatch receive training associated with the equipment hatch operation.

Procedures are in place to suspend all fuel handling activities if tornado or severe weather warnings are in effect. The containment equipment hatch is not required for missile protection.

An assessment of the radiological consequences, as described above for the proposed changes, concludes that site boundary doses remain well within the 10 CFR 100 limits and control room doses meet GDC 19 criteria without taking credit for closure of the equipment hatch. The administrative controls provide reasonable assurance that containment closure as a defense-in-depth measure can be reestablished quickly to limit releases much lower than assumed in the dose calculation.

Risk Significance

Based on the results of conservative dose calculations provided in this submittal, the risk to the health and safety of the public as a result of a fuel handling accident inside the containment with the equipment hatch open is minimal. Actual fuel handling accidents which have occurred in the past have resulted in minimal or no releases, which shows that the assumptions and methodology utilized in the radiological dose calculations are very conservative. Radioactive decay is a natural phenomenon. It has a reliability of 100 percent in reducing the radiological release from fuel bundles. In addition, the water level that covers the fuel bundles is another natural method that provides an adequate barrier to a significant radiological release. The requirement for at least 100 hours of decay prior to fuel movement is maintained in FSAR Section 9.1.3.1.1 (Reference 10.7) and the requirement for water level is maintained in the TS. In addition, the requirements for isolable air locks, an isolable equipment hatch, isolable penetrations, and containment radiation monitors is maintained in the TS. The Containment Purge and Exhaust System will be available in accordance with the aforementioned NUMARC 93-01(Reference 10.3) guidelines to further reduce radiological release. Therefore, the risk to the health and safety of the public as a result of allowing the equipment hatch to be open during fuel movement is minimal.

6.0 REGULATORY ANALYSIS

The method of analysis used for evaluating the potential radiological consequences of the postulated fuel handling accident is in compliance with Regulatory Guide 1.25 and the guidance

in NUREG-0800, Section 15.7.4 and NUREG/CR-5009. The analysis presented in Section 15.7.4 of the CPSES FSAR, demonstrating the adequacy of the system design features and plant procedures provided for the mitigation of the radiological consequences of postulated fuel handling accidents, assumes no credit is taken for iodine removal by the atmosphere filtration system filters. All radioactivity released to the containment is assumed to be released to the environment at ground level over a two hour period.

The technical analysis performed by CPSES demonstrates that the consequent doses at the exclusion area and low population zone boundaries are well within the limits of 10 CFR 100. Therefore, the proposed license amendment is in compliance with GDC 16, 56, 61, and 64 as well as Regulatory Guide 1.25, NUREG/CR-5009, and the criteria contained in NUREG-0800, Section 15.7.4.

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.

7.0 NO SIGNIFICANT HAZARDS DETERMINATION

TXU Electric has evaluated whether or not a significant hazards consideration is involved with the proposed changes by focusing on the three standards set forth in 10 CFR 50.92(c) 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 changes will allow the equipment hatch to be open during CORE ALTERATIONS and movement of irradiated fuel assemblies inside containment. The status of the equipment hatch during refueling operations has no affect on the probability of the occurrence of any accident previously evaluated. The proposed revision does not alter any plant equipment or operating practices in such a manner that the probability of an accident is increased. Since the consequences of a fuel handling accident inside containment with an open equipment hatch are bounded by the current analysis described in the FSAR and the probability of an accident is not affected by the status of the equipment hatch, the proposed change does 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

   The proposed changes do not create any new failure modes for any system or component, nor do they adversely affect plant operation. No new equipment will be added and no new limiting single failures will be created. The plant will continue to be operated within the envelope of the existing safety analysis.

   Therefore, the proposed changes do not create a new or different kind of accident from any accident previously evaluated.

3. Does the proposed change involve a significant reduction in a margin of safety?

   Response: No

   The previously determined radiological dose consequences for a fuel handling accident inside containment with the personnel air lock doors open remain bounding for the proposed changes. These previously determined dose consequences were determined to be well within the limits of 10 CFR 100 and they meet the acceptance criteria of SRP section 15.7.4 and GDC 19.

   Therefore, the proposed changes do not involve a significant reduction in the margin of safety.

Based on the above evaluations, TXU Electric concludes that the activities associated with the above described changes present no significant hazards consideration under the standards set forth in 10 CFR 50.92 and accordingly, a finding by the NRC of no significant hazards consideration is justified.

8.0 ENVIRONMENTAL CONSIDERATION

TXU Electric 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 10 CFR 20, or would change an inspection or surveillance requirement. TXU Electric has evaluated the proposed change and has determined that the change does not involve (i) a significant hazards consideration, (ii) a significant change in the types of or significant increase in the amounts of any effluents that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. As discussed above, the proposed changes do not involve a significant hazards consideration and the analysis demonstrates that the

consequences from a fuel handling accident inside containment are well within the 10 CFR 100 limits. The implementation of administrative controls precludes a significant increase in occupational radiation exposure. Accordingly, the proposed change meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), an environmental assessment of the proposed change is not required.

9.0 PRECEDENTS

There are precedents for allowing the equipment hatch to be open during CORE ALTERATIONS and/or during movement of irradiated fuel assemblies within containment. The Southern Nuclear Operating Company operating licenses for the Vogtle Generating Electric Plant Units 1 and 2, have been amended to allow the equipment hatch to be open during CORE ALTERATIONS and/or during movement of irradiated fuel assemblies within containment. These amendments, Nos. 115 and 93, were issued on September 11, 2000.

10.0. REFERENCES

10.1 NRC letter dated September 5, 2000, "Comanche Peak Steam Electric Station, Units 1 and 2 - Issuance of Amendments Re: Administrative Controls for Open Penetrations During Refueling Operations (TAC NOS. MA9071 and MA9072)."

10.2 NRC letter dated March 18, 1996, "Comanche Peak Steam Electric Station, Units 1 and 2 - Amendment Nos. 48 and 34 to Facility Operating License Nos. NPF-87 and NPF-89 (TAC NOS. MA94169 and MA94168)."

10.3 NUMARC 93-01, Revision 3, "Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," July 2000.

10.4 FSAR Section 15.7.4, "Fuel Handling Accidents."

10.5 NUREG-0800, Standard Review Plan, Section 15.7.4, Rev. 1, July 1981.

10.6 Technical Requirements Manual (TRM) Section TR 13.9.32, "Refueling Operations/Communications."

10.7 FSAR Section 9.1.3.1.1, "Spent Fuel Pool Cooling."

ATTACHMENT 3 to TXX-01153

PROPOSED TECHNICAL SPECIFICATION CHANGES (MARK-UP)

Pages 3.9-7 and 3.9-8

3.9 REFUELING OPERATIONS

3.9.4 Containment Penetrations

LCO 3.9.4 The containment penetrations shall be in the following status:

a. The equipment hatch closed and held in place by four bolts, or if open, capable of being closed;

b. One door in the emergency air lock closed and one door in the personnel airlock capable of being closed; and

c. Each penetration providing direct access from the containment atmosphere to the outside atmosphere either:

1. closed by a manual or automatic isolation valve, blind flange, or equivalent, or

2. capable of being closed by an OPERABLE containment ventilation isolation valve.

----------NOTE----------
Penetration flow path(s) providing direct access from the containment atmosphere to the outside atmosphere may be unisolated under administrative controls. 79

APPLICABILITY: During CORE ALTERATIONS,
During movement of irradiated fuel assemblies within containment.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One or more containment penetrations not in required status.	A.1	Suspend CORE ALTERATIONS.	Immediately
	AND		
	A.2	Suspend movement of irradiated fuel assemblies within containment.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.4.1	Verify each required containment penetration is in the required status.	7 days
SR 3.9.4.2	----------NOTE---------- Only required for an open equipment hatch ---------- Verify the capability to install the equipment hatch.	7 days
SR 3.9.4.~~2~~3	Verify each required containment ventilation isolation valve actuates to the isolation position on an actual or simulated actuation signal.	18 months

ATTACHMENT 4 to TXX-01153

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

Pages B3.9-12, B3.9-15, B3.9-16, and B3.9-17

B 3.9 REFUELING OPERATIONS

B 3.9.4 Containment Penetrations

BASES

BACKGROUND

During CORE ALTERATIONS or movement of irradiated fuel assemblies within containment, a release of fission product radioactivity within containment will be restricted from escaping to the environment when the LCO requirements are met. In MODES 1, 2, 3, and 4, this is accomplished by maintaining containment OPERABLE as described in LCO 3.6.1, "Containment." In MODE 6, the potential for containment pressurization as a result of an accident is not likely; therefore, requirements to isolate the containment from the outside atmosphere can be less stringent. The LCO requirements are referred to as "containment closure" rather than "containment OPERABILITY." Containment closure means that all potential escape paths are closed or capable of being closed. Since there is no potential for containment pressurization, the 10CFR50, Appendix J leakage criteria and tests are not required.

The containment serves to contain fission product radioactivity that may be released from the reactor core following an accident, such that offsite radiation exposures are maintained well within the requirements of 10 CFR 100. Additionally, the containment provides radiation shielding from the fission products that may be present in the containment atmosphere following accident conditions.

The containment equipment hatch, which is part of the containment pressure boundary, provides a means for moving large equipment and components into and out of containment. ~~During CORE ALTERATIONS or movement of irradiated fuel assemblies within containment,~~ If closed, the equipment hatch must be held in place by at least four bolts. Good engineering practice dictates that the bolts required by this LCO be approximately equally spaced. Alternatively, the equipment hatch can be open provided it can be installed with a minimum of four bolts holding it in place.

The containment air locks, which are also part of the containment pressure boundary, provide a means for personnel access during MODES 1, 2, 3, and 4 unit operation in accordance with LCO 3.6.2, "Containment Air Locks." Each air lock has a door at both ends. The

(continued)

BASES

LCO (continued)

containment ventilation penetrations, and the personnel air locks, and the equipment hatch, which must be capable of being closed. For the OPERABLE containment ventilation penetrations, this LCO ensures that these penetrations are isolable by the Containment Ventilation Isolation System. The OPERABILITY requirements for this LCO ensure that the automatic ventilation isolation valve closure function specified in the FSAR can be achieved and, therefore, meet the assumptions used in the safety analysis to ensure that releases through the valves are terminated, such that radiological doses are within the acceptance limit.

Both containment personnel air lock doors may be open during movement of irradiated fuel or CORE ALTERATION, provided an air lock door is capable of being closed and the water level in the refueling pool is maintained as required. Administrative controls ensure that: 1) appropriate personnel are aware of the open status of the containment during movement of irradiated fuel or CORE ALTERATIONS, 2) specified individuals are designated and readily available to close the air lock following an evacuation that would occur in the event of a fuel handling accident, and 3) any obstructions (e.g., cables and hoses) that would prevent rapid closure of an open air lock can be quickly removed.

The LCO is modified by a NOTE allowing penetration flow paths with direct access from the containment atmosphere to the outside atmosphere to be unisolated under administrative controls. Administrative controls ensure that 1) appropriate personnel are aware of the open status of the penetration flow path during CORE ALTERNATIONS or movement of irradiated fuel assemblies within containment, and 2) specified individuals are designated and readily available to isolate the flow path in the event of a fuel handling accident. 11

The equipment hatch may be open during movement of irradiated fuel or CORE ALTERNATIONS provided the hatch is capable of being closed and the water level in the refueling pool is maintained as required. Administrative controls ensure that 1) appropriate personnel are aware of the open status of the containment during movement of irradiated fuel or CORE ALTERNATIONS, 2) specified individuals are designated and readily available to close the equipment hatch following an evacuation that would occur in the event of a fuel handling accident, and 3) any obstructions (e.g., cables and hoses) that would prevent rapid closure of the equipment hatch can be quickly removed.

APPLICABILITY

The containment penetration requirements are applicable during CORE ALTERATIONS or movement of irradiated fuel assemblies within containment because this is when there is a potential for a fuel handling accident. In MODES 1, 2, 3, and 4, containment penetration requirements are addressed by LCO 3.6.1. In MODES 5 and 6, when CORE ALTERATIONS or movement of irradiated fuel assemblies within containment are not being conducted, the potential for a fuel handling accident does not exist. Therefore, under these conditions no requirements are placed on containment penetration status.

(continued)

BASES

ACTIONS

A.1 and A.2

If the containment equipment hatch, air locks, or any containment penetration that provides direct access from the containment atmosphere to the outside atmosphere is not in the required status, including the containment ventilation isolation system not capable of automatic actuation when the isolation valves are open, the unit must be placed in a condition where the isolation function is not needed. This is accomplished by immediately suspending CORE ALTERATIONS and movement of irradiated fuel assemblies within containment. Performance of these actions shall not preclude completion of movement of a component to a safe position.

SURVEILLANCE REQUIREMENTS

SR 3.9.4.1

This Surveillance demonstrates that each of the containment penetrations required to be in its closed position is in that position. The Surveillance on the open isolation valves will demonstrate that the required valves are not blocked from closing. Also the Surveillance will demonstrate that each valve operator has motive power, which will ensure that each required valve is capable of being closed by an OPERABLE automatic containment ventilation isolation signal.

The Surveillance is performed every 7 days during CORE ALTERATIONS or movement of irradiated fuel assemblies within containment. The Surveillance interval is selected to be commensurate with the normal duration of time to complete fuel handling operations. A surveillance before the start of refueling operations will provide two or three surveillance verifications during the applicable period for this LCO. As such, this Surveillance ensures that a postulated fuel handling accident that releases fission product radioactivity within the containment will not result in a release of fission product radioactivity to the environment.

SR 3.4.9.2

This Surveillance demonstrates that the necessary hardware, tools, and equipment are available to install the equipment hatch. The equipment hatch is provided with a set of hardware, tools, and equipment for moving the hatch from its storage location and installing it in the opening. The required set of hardware, tools, and equipment shall be inspected to ensure that they can perform the required functions.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.4.9.2 (continued)

The Surveillance is performed every 7 days during CORE ALTERATIONS or movement of irradiated fuel assemblies within the containment. The Surveillance interval is selected to be commensurate with the normal duration of time to complete the fuel handling operations. The Surveillance is modified by a Note which only requires that the Surveillance be met for an open equipment hatch. If the equipment hatch is installed in its opening, the availability of the means to install the hatch is not required. The 7 day Frequency is adequate considering that the hardware, tools, and equipment are dedicated to the equipment hatch and not used for any other function.

SR 3.9.4.~~2~~3

This Surveillance demonstrates that each required containment ventilation valve actuates to its isolation position on manual initiation or on an actual or simulated high radiation signal from a containment atmosphere gaseous monitoring instrumentation channel. The 18 month Frequency maintains consistency with other similar instrumentation and valve testing requirements. In LCO 3.3.6, the Containment Ventilation Isolation instrumentation requires a CHANNEL CHECK every 12 hours and a COT every 92 days to ensure the channel OPERABILITY during refueling operations. Every 18 months a CHANNEL CALIBRATION is performed. These Surveillances performed during MODE 6 will ensure that the valves are capable of closing after a postulated fuel handling accident to limit a release of fission product radioactivity from the containment.

REFERENCES

1. FSAR, Section 15.7.4.

2. NUREG-0800, Section 15.7.4, Rev. 1, July 1981.

3. NUREG-0797, Section 15.4.8, Supplement 22, January 1990.

ATTACHMENT 5 to TXX-01153

RETYPED TECHNICAL SPECIFICATION PAGES

Pages 3.9-7 and 3.9-8

3.9 REFUELING OPERATIONS

3.9.4 Containment Penetrations

LCO 3.9.4 The containment penetrations shall be in the following status:

a. The equipment hatch closed and held in place by four bolts, or if open, capable of being closed;

b. One door in the emergency air lock closed and one door in the personnel airlock capable of being closed; and

c. Each penetration providing direct access from the containment atmosphere to the outside atmosphere either:

1. closed by a manual or automatic isolation valve, blind flange, or equivalent, or

2. capable of being closed by an OPERABLE containment ventilation isolation valve.

----------NOTE----------
Penetration flow path(s) providing direct access from the containment atmosphere to the outside atmosphere may be unisolated under administrative controls. 79

APPLICABILITY: During CORE ALTERATIONS,
During movement of irradiated fuel assemblies within containment.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One or more containment penetrations not in required status.	A.1	Suspend CORE ALTERATIONS.	Immediately
	AND		
	A.2	Suspend movement of irradiated fuel assemblies within containment.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.4.1	Verify each required containment penetration is in the required status.	7 days
SR 3.9.4.2	----------NOTE---------- Only required for an open equipment hatch ---------- Verify the capability to install the equipment hatch.	7 days
SR 3.9.4.3	Verify each required containment ventilation isolation valve actuates to the isolation position on an actual or simulated actuation signal.	18 months

ATTACHMENT 6 to TXX-01153

RETYPED TECHNICAL SPECIFICATION BASES PAGES
(For Information Only)

Pages B3.9-12, B3.9-15, B3.9-16, and B3.9-17

B 3.9 REFUELING OPERATIONS

B 3.9.4 Containment Penetrations

BASES

BACKGROUND

During CORE ALTERATIONS or movement of irradiated fuel assemblies within containment, a release of fission product radioactivity within containment will be restricted from escaping to the environment when the LCO requirements are met. In MODES 1, 2, 3, and 4, this is accomplished by maintaining containment OPERABLE as described in LCO 3.6.1, "Containment." In MODE 6, the potential for containment pressurization as a result of an accident is not likely; therefore, requirements to isolate the containment from the outside atmosphere can be less stringent. The LCO requirements are referred to as "containment closure" rather than "containment OPERABILITY." Containment closure means that all potential escape paths are closed or capable of being closed. Since there is no potential for containment pressurization, the 10CFR50, Appendix J leakage criteria and tests are not required.

The containment serves to contain fission product radioactivity that may be released from the reactor core following an accident, such that offsite radiation exposures are maintained well within the requirements of 10 CFR 100. Additionally, the containment provides radiation shielding from the fission products that may be present in the containment atmosphere following accident conditions.

The containment equipment hatch, which is part of the containment pressure boundary, provides a means for moving large equipment and components into and out of containment. If closed, the equipment hatch must be held in place by at least four bolts. Good engineering practice dictates that the bolts required by this LCO be approximately equally spaced. Alternatively, the equipment hatch can be open provided it can be installed with a minimum of four bolts holding it in place.

The containment air locks, which are also part of the containment pressure boundary, provide a means for personnel access during MODES 1, 2, 3, and 4 unit operation in accordance with LCO 3.6.2, "Containment Air Locks." Each air lock has a door at both ends. The

(continued)

BASES

LCO (continued)

containment ventilation penetrations, the personnel air locks, and the equipment hatch, which must be capable of being closed. For the OPERABLE containment ventilation penetrations, this LCO ensures that these penetrations are isolable by the Containment Ventilation Isolation System. The OPERABILITY requirements for this LCO ensure that the automatic ventilation isolation valve closure function specified in the FSAR can be achieved and, therefore, meet the assumptions used in the safety analysis to ensure that releases through the valves are terminated, such that radiological doses are within the acceptance limit.

Both containment personnel air lock doors may be open during movement of irradiated fuel or CORE ALTERATION, provided an air lock door is capable of being closed and the water level in the refueling pool is maintained as required. Administrative controls ensure that: 1) appropriate personnel are aware of the open status of the containment during movement of irradiated fuel or CORE ALTERATIONS, 2) specified individuals are designated and readily available to close the air lock following an evacuation that would occur in the event of a fuel handling accident, and 3) any obstructions (e.g., cables and hoses) that would prevent rapid closure of an open air lock can be quickly removed.

The LCO is modified by a NOTE allowing penetration flow paths with direct access from the containment atmosphere to the outside atmosphere to be unisolated under administrative controls. Administrative controls ensure that 1) appropriate personnel are aware of the open status of the penetration flow path during CORE ALTERNATIONS or movement of irradiated fuel assemblies within containment, and 2) specified individuals are designated and readily available to isolate the flow path in the event of a fuel handling accident. 11

The equipment hatch may be open during movement of irradiated fuel or CORE ALTERNATIONS provided the hatch is capable of being closed and the water level in the refueling pool is maintained as required. Administrative controls ensure that 1) appropriate personnel are aware of the open status of the containment during movement of irradiated fuel or CORE ALTERNATIONS, 2) specified individuals are designated and readily available to close the equipment hatch following an evacuation that would occur in the event of a fuel handling accident, and 3) any obstructions (e.g., cables and hoses) that would prevent rapid closure of the equipment hatch can be quickly removed.

APPLICABILITY

The containment penetration requirements are applicable during CORE ALTERATIONS or movement of irradiated fuel assemblies within containment because this is when there is a potential for a fuel handling accident. In MODES 1, 2, 3, and 4, containment penetration requirements are addressed by LCO 3.6.1. In MODES 5 and 6, when CORE ALTERATIONS or movement of irradiated fuel assemblies within containment are not being conducted, the potential for a fuel handling accident does not exist. Therefore, under these conditions no requirements are placed on containment penetration status.

(continued)

BASES

ACTIONS

A.1 and A.2

If the containment equipment hatch, air locks, or any containment penetration that provides direct access from the containment atmosphere to the outside atmosphere is not in the required status, including the containment ventilation isolation system not capable of automatic actuation when the isolation valves are open, the unit must be placed in a condition where the isolation function is not needed. This is accomplished by immediately suspending CORE ALTERATIONS and movement of irradiated fuel assemblies within containment. Performance of these actions shall not preclude completion of movement of a component to a safe position.

SURVEILLANCE REQUIREMENTS

SR 3.9.4.1

This Surveillance demonstrates that each of the containment penetrations required to be in its closed position is in that position. The Surveillance on the open isolation valves will demonstrate that the required valves are not blocked from closing. Also the Surveillance will demonstrate that each valve operator has motive power, which will ensure that each required valve is capable of being closed by an OPERABLE automatic containment ventilation isolation signal.

The Surveillance is performed every 7 days during CORE ALTERATIONS or movement of irradiated fuel assemblies within containment. The Surveillance interval is selected to be commensurate with the normal duration of time to complete fuel handling operations. A surveillance before the start of refueling operations will provide two or three surveillance verifications during the applicable period for this LCO. As such, this Surveillance ensures that a postulated fuel handling accident that releases fission product radioactivity within the containment will not result in a release of fission product radioactivity to the environment.

SR 3.4.9.2

This Surveillance demonstrates that the necessary hardware, tools, and equipment are available to install the equipment hatch. The equipment hatch is provided with a set of hardware, tools, and equipment for moving the hatch from its storage location and installing it in the opening. The required set of hardware, tools, and equipment shall be inspected to ensure that they can perform the required functions.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.4.9.2 (continued)

The Surveillance is performed every 7 days during CORE ALTERATIONS or movement of irradiated fuel assemblies within the containment. The Surveillance interval is selected to be commensurate with the normal duration of time to complete the fuel handling operations. The Surveillance is modified by a Note which only requires that the Surveillance be met for an open equipment hatch. If the equipment hatch is installed in its opening, the availability of the means to install the hatch is not required. The 7 day Frequency is adequate considering that the hardware, tools, and equipment are dedicated to the equipment hatch and not used for any other function.

SR 3.9.4.3

This Surveillance demonstrates that each required containment ventilation valve actuates to its isolation position on manual initiation or on an actual or simulated high radiation signal from a containment atmosphere gaseous monitoring instrumentation channel. The 18 month Frequency maintains consistency with other similar instrumentation and valve testing requirements. In LCO 3.3.6, the Containment Ventilation Isolation instrumentation requires a CHANNEL CHECK every 12 hours and a COT every 92 days to ensure the channel OPERABILITY during refueling operations. Every 18 months a CHANNEL CALIBRATION is performed. These Surveillances performed during MODE 6 will ensure that the valves are capable of closing after a postulated fuel handling accident to limit a release of fission product radioactivity from the containment.

REFERENCES

1. FSAR, Section 15.7.4.

2. NUREG-0800, Section 15.7.4, Rev. 1, July 1981.

3. NUREG-0797, Section 15.4.8, Supplement 22, January 1990.