TXU Power
Comanche Peak Steam
Electric Station
P. O. Box 1002 (E01)
Glen Rose, TX 76043
Tel: 254 897 5209
Fax: 254 897 6652
mike.blevins@txu.com

**Mike Blevins**
Senior Vice President &
Chief Nuclear Officer

Ref: 10CFR50.73(a)(2)(i)(B)

CPSES-200500312
Log # TXX-05024

March 14, 2005

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

SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION (CPSES)
DOCKET NO. 50-446
CONDITION PROHIBITED BY TECHNICAL SPECIFICATION
LICENSEE EVENT REPORT 446/05-001-00

Gentlemen:

Enclosed is Licensee Event Report (LER) 05-001-00 for Comanche Peak Steam Electric Station Unit 2, "Containment Personnel Airlock Door Inoperable."

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

| Commitment Number | Commitment |
|---|---|
| 27335 | Operations will evaluate the post work test conditions for the containment personnel and emergency airlocks to determine when a barrel test is required to restore operability. |

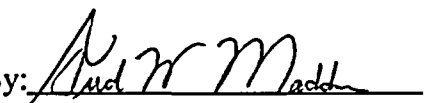
A1 E22

Sincerely,

TXU Generation Company LP

By: TXU Generation Management Company LLC,
Its General Partner

Mike Blevins

By: 
Fred W. Madden
Director, Regulatory Affairs

GLM

Enclosures

c - B. S. Mallett, Region IV
W. D. Johnson, Region IV
M. C. Thadani, NRR
Resident Inspectors, CPSES

Enclosure to TXX-05024

NRC FORM 366 (6-2004) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104 EXPIRES 06/30/2007

Estimated burden per response to comply with this mandatory collection request: 50 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records and FOIA/Privacy Service Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202 (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

# LICENSEE EVENT REPORT (LER)

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Title (4)
CONDITION PROHIBITED BY TECHNICAL SPECIFICATION

| Event Date (5) | | | LER Number (6) | | | Report Date (7) | | | Other Facilities Involved (8) | |
|---|---|---|---|---|---|---|---|---|---|---|
| Month | Day | Year | Year | Sequential Number | Revision Number | Month | Day | Year | Facility Name | Docket Numbers |
| | | | | | | | | | N/A | 05000 |
| 01 | 18 | 05 | 05 | 001 | 00 | 03 | 14 | 05 | | 05000 |

| Operating Mode (9) | 1 | This report is submitted pursuant to the requirements of 10 CFR : (Check all that apply) (11) | | | |
|---|---|---|---|---|---|
| Power Level (10) | 100 | 20.2201(b) | 20.2203(a)(3)(i) | 50.73(a)(2)(i)(C) | 50.73(a)(2)(vii) |
| [redacted] | | 20.2201(d) | 20.2203(a)(3)(ii) | 50.73(a)(2)(ii)(A) | 50.73(a)(2)(viii)(A) |
| | | 20.2203(a)(1) | 20.2203(a)(4) | 50.73(a)(2)(ii)(B) | 50.73(a)(2)(viii)(B) |
| | | 20.2203(a)(2)(i) | 50.36(c)(2)(i)(A) | 50.73(a)(2)(iii) | 50.73(a)(2)(ix)(A) |
| | | 20.2203(a)(2)(ii) | 50.36(c)(1)(ii)(A) | 50.73(a)(2)(iv)(A) | 50.72(a)(2)(x) |
| | | 20.2203(a)(2)(iii) | 50.36(c)(2) | 50.73(a)(2)(v)(A) | 73.71(a)(4) |
| | | 20.2203(a)(2)(iv) | 50.46(a)(3)(ii) | 50.73(a)(2)(v)(B) | 73.71(a)(5) |
| | | 20.2203(a)(2)(v) | 50.73(a)(2)(i)(A) | 50.73(a)(2)(v)(C) | OTHER |
| | | 20.2203(a)(2)(vi) | X 50.73(a)(2)(i)(B) | 50.73(a)(2)(v)(D) | Specify in Abstract below or in NRC Form 366A |

Licensee Contact For This LER (12)

| Name | Telephone Number (Include Area Code) |
|---|---|
| Timothy A. Hope - Regulatory Performance Manager | 254-897-6370 |

Complete One Line For Each Component Failure Described in This Report (13)

| Cause | System | Component | Manufacturer | Reportable To EPIX | | | Cause | System | Component | Manufacturer | Reportable To EPIX |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | N | | | | | | | |

| Supplemental Report Expected (14) | | | EXPECTED SUBMISSION DATE (15) | Month | Day | Year |
|---|---|---|---|---|---|---|
| YES (If YES, complete EXPECTED SUBMISSION DATE) | X | NO | | | | |


ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On January 18, 2005, Comanche Peak Steam Electric Station Unit 2 was in Mode 1, Power Operation, operating at approximately 100 percent power. On January 18, Engineering personnel determined that one of the two Unit 2 containment personnel airlock doors had been inoperable for a period of time longer than allowed by the Technical Specifications.

TXU Generation Company LP (TXU Power) believes that this event was caused by incorrect installation of the door gaskets for the Unit 2 containment personnel airlock doors due to an inadequate procedure. Corrective actions include revising procedures to provide instructions for the correct orientation of the door gasket and evaluating the post work test requirements for the door gaskets.

All times in this report are approximate and Central Standard Time unless noted otherwise.

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NARRATIVE (If more space is required, use additional copies of NRC Form 366A) (17)

## I. DESCRIPTION OF REPORTABLE EVENT

### A. REPORTABLE EVENT CLASSIFICATION

Any operation or condition prohibited by the plant's Technical Specifications.

### B. PLANT OPERATING CONDITIONS PRIOR TO THE EVENT

On January 18, 2005, at the time of discovery for this reportable event, Comanche Peak Steam Electric Station (CPSES) Unit 2 was in Mode 1, Power Operation, operating at approximately 100 percent power.

### C. STATUS OF STRUCTURES, SYSTEMS, OR COMPONENTS THAT WERE INOPERABLE AT THE START OF THE EVENT AND THAT CONTRIBUTED TO THE EVENT

There were no inoperable structures, systems, or components that were inoperable at the start of the event that contributed to the event.

### D. NARRATIVE SUMMARY OF THE EVENT, INCLUDING DATES AND APPROXIMATE TIMES

On November 17, 2004, CPSES Unit 2 was in Mode 1 operating at approximately 100 percent power. On November 17, Maintenance personnel (utility, non licensed) replaced the door gaskets [EIIS:(DR)(SEAL)] in both of the Unit 2 containment personnel airlock doors [EIIS:(NH)(AL)(DR)] as part of a seven year preventive maintenance activity. There was no time or situational pressure present during the installation of the gaskets by Maintenance personnel. Post work testing was then performed which consisted of a seal test to determine the integrity of the door seal. The seal test is performed by closing the door, then applying pressure to the annulus between the "dog teeth" of the gasket and ensuring that pressure is maintained for a specific time period. Technical Specification (TS) SR 3.6.2.1 requires that a seal test be performed within 7 days of door operation. After replacement of the gaskets, the inner door seal test was satisfactory; however, the outer door seal test was initially unsatisfactory. A portion of the outer seal was cleaned and re-greased and the outer door seal was then retested satisfactorily.

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On December 5, 2004, the door seal test was performed on both doors following scheduled containment entries. The inner door seal was satisfactory; however, the outer door seal was initially unsatisfactory. The outer door sealing surface was found to be scratched, and Maintenance personnel polished the sealing surface and the test was reperformed. However, the outer door seal again failed the seal test. A new door gasket was installed and the seal test was subsequently performed satisfactorily.

On December 11, 2004, the door seal test was again performed on both doors following scheduled containment entries. The inner door seal was satisfactory; however, the outer door seal was initially unsatisfactory. Troubleshooting to determine the cause of the failure was scheduled for December 13, 2004.

On December 13, 2004, during troubleshooting for the test failure, the outer door gasket was found to have been installed backwards. The gasket was reinstalled in the correct orientation and the post work test on the seal was performed satisfactorily.

On December 14, 2004, a barrel test of the Unit 2 containment personnel airlock was performed to support a design modification on the Unit 2 containment personnel airlock. The barrel test pressurizes the inside of the air lock to a pressure higher than the design basis pressure expected inside containment. This test determines operability of the entire air lock including the door seals. The test differs from expected design basis usage, however, in that a force is generated which forces both doors "outward." During design basis usage, the inner door would be forced onto the barrel, with only the outer door potentially experiencing outward pressure. When the barrel test was performed on December 14, it was not successfully completed due to excessive leakage from the inner door seal. The inner door was declared inoperable and the associated actions of TS 3.6.2 were met. Troubleshooting determined that the Unit 2 containment personnel airlock inner door gasket had also been installed backwards during the seven year preventive maintenance activity on November 17, 2004. A new door gasket was installed in the correct orientation on the inner door and the seal test and barrel test were both subsequently performed satisfactorily on December 15, 2004.

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On December 16, 2004, Engineering began an evaluation to determine if the Unit 2 containment personnel airlock doors had been inoperable while the gaskets were installed backwards. On January 18, 2005, Engineering completed the evaluation and determined that during the time that the gasket was installed backwards (from November 17, 2004 to December 13, 2004) the Unit 2 containment personnel airlock outer door would not have been able to perform its safety function and was inoperable. However, for that same time frame until it was corrected on December 14, 2004, it was Engineering's judgment that the inner door was still capable of maintaining its safety function. An analysis was initiated to confirm this conclusion. With one door inoperable, TS 3.6.2 requires verifying that the operable door is closed in the affected airlock within 1 hour (Condition A.1), locking the operable door closed in the affected airlock within 24 hours (Condition A.2), and verifying the operable door is locked closed once per 31 days (Condition A.3). Because Conditions A.1 and A.2 were not complied with from November 17, 2004 to December 13, 2004, this condition is reportable per 10CFR50.73(a)(2)(i)(B) as a condition prohibited by TS.

On February 28, 2005, Engineering received the analysis related to the inner door which confirmed its operability.

### E. THE METHOD OF DISCOVERY OF EACH COMPONENT OR SYSTEM FAILURE, OR PROCEDURAL OR PERSONNEL ERROR

Engineering personnel (utility, non-licensed) determined that the containment personnel airlock outer door would not have been able to perform its safety function and was inoperable from November 17, 2004 to December 13, 2004.

## II. COMPONENT OR SYSTEM FAILURES

### A. FAILURE MODE, MECHANISM, AND EFFECTS OF EACH FAILED COMPONENT

Not applicable – No component or system failures were identified during this event.

### B. CAUSE OF EACH COMPONENT OR SYSTEM FAILURE

Not applicable – No component or system failures were identified during this event.

### C. SYSTEMS OR SECONDARY FUNCTIONS THAT WERE AFFECTED BY FAILURE OF COMPONENTS WITH MULTIPLE FUNCTIONS

Not applicable – No component or system failures were identified during this event.

### D. FAILED COMPONENT INFORMATION

Not applicable – No component or system failures were identified during this event.

## III. ANALYSIS OF THE EVENT

### A. SAFETY SYSTEM RESPONSES THAT OCCURRED

Not applicable -- No safety system responses occurred as a result of this event.

### B. DURATION OF SAFETY SYSTEM TRAIN INOPERABILITY

The Unit 2 containment personnel airlock outer door would not have been able to perform its safety function and was inoperable from November 17, 2004 to December 13, 2004.

### C. SAFETY CONSEQUENCES AND IMPLICATIONS

During the 28 days that the Unit 2 containment personnel airlock door gaskets were installed backwards, no LOCA event occurred that required the doors to perform their safety function. Therefore, the health and safety of the public were unaffected.

Had a LOCA occurred during this period of time, the pressure inside containment would have exerted a significant force on the inner air lock door. This force would have further compressed the inner door gasket resulting in an effective seal. This loading condition would occur if the seal were installed correctly or backwards.

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Leakage past the outer door would also have been minimal because the maximum gap between the door and the barrel is only 1/16 of an inch, and even with the seal installed backwards it would still have provided some level of sealing functionality. TXU Power determined that the maximum leakage rate with the gaskets installed backwards would have been much less than 100 % of the containment volume per day and as a result, using the guidance in Inspection Manual Chapter 609, Appendix H, this condition would have low safety significance.

There were short periods of time from November 17, 2004 to December 13, 2004 during which the containment boundary was not intact due to access through the operable (inner) door. The ability to open the operable door to perform repairs, even if it means the containment boundary is temporarily not intact, is acceptable as noted in the TS 3.6.2 bases due to the low probability of an event that could pressurize the containment during the short time in which the operable door was open. In the unlikely event of a small break LOCA during these periods of access, personnel would have quickly shut the operable (inner) door. The probability of a larger LOCA during these brief intervals is 5 orders of magnitude below the annual design basis.

In addition, in the event of an impending large LOCA it is reasonable to assume that monitoring instrumentation and the leak detection capabilities required by the TS and credited for GDC-4 "leak before break" would alert Control Room personnel to the condition, and additional controls would be placed on containment access thus assuring that the containment personnel airlock doors would remain closed. Also, any release from a LOCA that might have occurred during the brief periods that the containment personnel airlock inner door was open would be processed through the Primary Plant Ventilation System emergency filtration units which would reduce particulate and iodine releases by a factor of 20.

Based on this analysis it was concluded that this event did not represent a safety system functional failure and did not adversely affect the safe operation of CPSES Unit 2 or the health and safety of the public.

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## IV. CAUSE OF THE EVENT

TXU Power believes that the cause of this event was the installation of the Unit 2 containment personnel airlock door gaskets in a backwards configuration due to an inadequate procedure. The procedure governing installation of the door gaskets did not provide instructions on the correct orientation of the gaskets, and the design of the gaskets is such that the correct orientation is not obvious.

In addition, the post work test did not identify that the gaskets were installed backwards. Although the seal test does provide some assurance that the gasket can hold pressure, the gaskets could be installed backwards and still successfully pass the seal test. However, a barrel test would likely have detected a gasket that was installed backwards.

## V. CORRECTIVE ACTIONS

The gaskets in the Unit 1 containment personnel airlock doors were inspected and were found to be installed correctly. The gaskets in the Unit 1 and Unit 2 emergency airlock doors were also inspected and were found to be installed correctly. The procedures governing installation of the door gaskets were revised to provide more detailed instructions on the correct orientation of the gaskets. Operations will evaluate the post work test conditions for the containment personnel and emergency airlocks to determine when a barrel test is required to restore operability.

## VI. PREVIOUS SIMILAR EVENTS

There have been no previous similar reportable events in the last three years involving inoperable containment personnel airlock doors.