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TXX-12025

Ref.#10CFR50.73

April 23, 2012

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

SUBJECT: COMANCHE PEAK NUCLEAR POWER PLANT
DOCKET NO. 50-446
LICENSEE EVENT REPORT 446/12-001-00, PORV BLOCK VALVE INOPERABLE FOR LONGER THAN ALLOWED BY TECHNICAL SPECIFICATIONS

Dear Sir or Madam:

Enclosed is Licensee Event Report (LER) 446/12-001-00, "PORV Block Valve Inoperable For Longer Than Allowed by Technical Specifications," for Comanche Peak Nuclear Power Plant (CPNPP) Unit 2. This letter contains the following new regulatory commitment which will be incorporated into the CPNPP licensing basis as noted.

Number	Commitment
4379554	Work order instructions and procedure MSE-P0-8349 will be revised to provide steps for properly lubricating the PORV block valve motor operators.

The commitment number is used by Luminant Power for the internal tracking of CPNPP commitments.

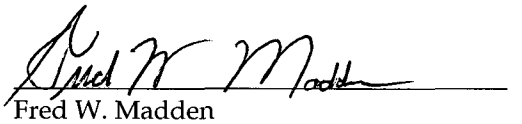
IE22
NRR

Should you have any questions concerning this submittal, please contact Mr. Tim Hope, Manager, Nuclear Licensing, at (254) 897-6370.

Sincerely,

Luminant Generation Company LLC

Rafael Flores

By: 
Fred W. Madden
Director, Oversight & Regulatory Affairs

Enclosure

c - E. E. Collins, Region IV
B. K. Singal, NRR
Resident Inspectors, Comanche Peak

NRC FORM 366 (10-2010) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104 EXPIRES 10/31/2013

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

1. FACILITY NAME	2. DOCKET NUMBER	3. PAGE
Comanche Peak	05000 446	1 OF 5

4. TITLE

PORV Block Valve Inoperable For Longer Than Allowed By Technical Specifications

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
										05000
02	21	2012	2012	001	00	04	23	2012	FACILITY NAME	DOCKET NUMBER 05000

9. OPERATING MODE

1

10. POWER LEVEL

100

11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)

☐ 20.2201(b)	☐ 20.2203(a)(3)(i)	☐ 50.73(a)(2)(i)(C)	☐ 50.73(a)(2)(vii)
☐ 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)(1)(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)	☐ 50.73(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 Specify in Abstract below or in NRC Form 366A
☐ 20.2203(a)(2)(vi)	☒ 50.73(a)(2)(i)(B)	☐ 50.73(a)(2)(v)(D)	

12. LICENSEE CONTACT FOR THIS LER

FACILITY NAME	TELEPHONE NUMBER (*Include Area Code*)
Timothy A. Hope, Manager Nuclear Licensing	254-897-6370

13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX

14. SUPPLEMENTAL REPORT EXPECTED

☐ YES (If yes, complete 15. EXPECTED SUBMISSION DATE) ☒ NO

15. EXPECTED SUBMISSION DATE

MONTH	DAY	YEAR

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

On April 8, 2011, during the Unit 2 twelfth refueling outage, an in-service surveillance on the Pressurizer 2-01 Power Operated Relief Valve (PORV) 0456 Block Valve Motor Operator did not meet the minimum required stem thrust in the closed direction. The PORV block valve surveillance failure was caused by degraded valve stem lubrication at the stem/stem nut area. Immediate corrective actions included removing the degraded grease from the affected PORV Block valve, applying new grease, and successfully performing the surveillance test on the valve. Work order instructions and procedure MSE-P0-8349 will be revised to provide steps for properly lubricating the PORV Block Valve Motor Operators. On February 21, 2012, Comanche Peak Nuclear Power Plant conservatively determined that the affected block valve had likely been inoperable in the past for longer than allowed by Technical Specifications and that this event was reportable per 10CFR50.73(a)(2)(i)(B) "Any operation or condition which was prohibited by the plant's Technical Specifications."

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

I. DESCRIPTION OF THE REPORTABLE EVENT

A. REPORTABLE EVENT CLASSIFICATION

10CFR50.73(a)(2)(i)(B) "Any operation or condition which was prohibited by the plant's Technical Specifications."

B. PLANT CONDITION PRIOR TO EVENT

On February 21, 2012, Comanche Peak Nuclear Power Plant (CPNPP) Unit 2 was in Mode 1 operating at 100% 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 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 April 8, 2011, Comanche Peak Nuclear Power Plant (CPNPP) Unit 2 was in the twelfth refueling outage. During an in-service Motor Operated Valve (MOV) surveillance, the Pressurizer 2-01 Power Operated Relief Valve (PORV) 0456 Block Valve Motor Operator [EIIS: (AB)(PZR)(RV)] did not meet the minimum required stem thrust in the closed direction. The acquired value was 98% of the allowable. The PORV block valve was declared inoperable and a work order was generated for a major inspection of the actuator. As part of the major inspection, the stem to stem nut lubrication was cleaned, inspected and then re-lubricated per procedures. A pre-service test was performed, all data acquired during the pre-service test was satisfactory, and the PORV block valve was declared operable.

The PORV block valve surveillance failure was caused by degraded valve stem lubrication at the stem/stem nut area. The PORV block valve motor operator had a refurbishment in October 2000, and this was the last time the stem/stem nut area had been lubricated. The valve had major inspections performed between 2000 and 2011, but the steps in procedure MSE-P0-8349, "Limitorque Actuator Periodic Electrical And Mechanical Inspection" to clean and lubricate the accessible areas of the valve stem were either not in the procedure to perform, or the steps were in the procedure but were marked as "Not Applicable" due to the position of the valve. Neither the procedure nor the work order specified the need to remove the compensator. Removal of the compensator is necessary for proper lubrication of these valves due to their short stroke and configuration.

On July 15, 2011, a past operability evaluation was completed which determined that although the PORV block valve was degraded at the time of discovery during the surveillance test, there was a reasonable expectation that the PORV block valve would have been capable of performing its specified design basis nuclear safety function of closing (and opening) during a Steam Generator Tube Rupture (SGTR) event. Therefore, it was concluded that the PORV block valve remained operable for the time period between the last satisfactory surveillance test and the unsatisfactory test on April 8, 2011.

On February 21, 2012, CPNPP concluded that the PORV block valve was inoperable at the time of the failed as-found surveillance test due to the degraded capability of the block valve to fully isolate a stuck open PORV under full system design pressure. As a result, this event is reportable per 10CFR50.73(a)(2)(i)(B), "Any Operation or Condition Prohibited by Technical Specifications." Based on evaluations, testing, and maintenance performed on the other three PORV block valves, there is not a reportable condition affecting

the other three PORV block valves.

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

During an in-service MOV surveillance, Engineering personnel (Utility, Non-Licensed) determined that the Pressurizer 2-01 PORV 0456 Block Valve Motor Operator did not meet the minimum required stem thrust in the closed direction.

II. COMPONENT OR SYSTEM FAILURES

A. CAUSE OF EACH COMPONENT OR SYSTEM FAILURE

Not applicable - No component failures were identified during this event.

B. FAILURE MODE, MECHANISM, AND EFFECTS OF EACH FAILED COMPONENT

Not applicable - No component 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 failures were identified during this event.

D. FAILED COMPONENT INFORMATION

Not applicable - No component 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

Although there is no firm evidence that the PORV block valve was inoperable in the past for longer than allowed by Technical Specifications, it was conservatively concluded that the PORV block valve was likely inoperable for a period of time prior to the failed surveillance test that exceeds the allowance of Technical Specification LCO 3.4.11, "Pressurizer PORVs."

C. SAFETY CONSEQUENCES AND IMPLICATIONS OF THE EVENT

Final Safety Analysis Report (FSAR) Section 15.6.1 addresses the inadvertent opening of a pressurizer safety or relief valve. FSAR Section 15.6.1.3 states that "For Units 1 and 2, the results of the analysis show that the pressurizer low pressure and the Overtemperature N-16 Reactor Protection System signals provide adequate protection against the RCS depressurization event." The closing of a PORV block valve is not credited in this analysis. However, the degraded PORV block valve would have fully closed at approximately 1848 psid RCS pressure to isolate a stuck open or leaking PORV.

FSAR Section 15.6.3, "Steam Generator Tube Failure" describes the only required closed safety function credited in the accident analysis for the PORV Block Valves. The accident examined is the complete severance of a single steam generator tube. This event is considered an ANS Condition IV event, a limiting fault and is analyzed to demonstrate that the resulting radiological doses are within the guideline values of 10CFR100. Timely operator response is required to terminate the primary-to-secondary break flow and to ensure that the ruptured steam generator does not fill with water and flood the main steamlines.

In this scenario, there is a loss of offsite power assumed, rendering the pressurizer spray valves inoperable. The PORVs and their associated block valves are required to be operable to open, and initiate RCS depressurization, in order to reduce (and eliminate) the primary-to-secondary leakage into the ruptured steam generator. The PORVs are required to be operable to close after the depressurization phase of recovery, in order to stop the depressurization phase, and maintain the desired Reactor Coolant System (RCS) pressure. The PORV block valves are required to be operable during this phase for PORV isolation in the event that one of the PORVs becomes stuck in the open position. During this phase of operation, the RCS pressure is expected to be significantly reduced, when compared to normal power operations. The RCS pressure is expected to be approximately 1100 psi or less, enabling the PORV block valve to seat with the necessary force to halt flow through the failed PORV.

From October 2000 to April 8, 2011, although a Steam Generator Tube Failure or leaking/stuck open PORV did not occur, the affected PORV block valve would have been able to perform the safety functions that are credited in the CPNPP FSAR accident analysis. Therefore, this event is not reportable as a safety system functional failure per 10CFR50.73(a)(2)(v)(D) and the potential safety significance is very low. Based on the above, this event had minimal safety consequences and the health and safety of the public was not affected.

IV. CAUSE OF THE EVENT

The PORV block valve surveillance failure was caused by degraded valve stem lubrication at the stem/stem nut area. The PORV block valve motor operator had a refurbishment in October 2000, and this was the last time the stem/stem nut area had been lubricated. The valve had major inspections performed between 2000 and 2011, but the steps in procedure MSE-P0-8349, "Limitorque Actuator Periodic Electrical And Mechanical Inspection" to clean and lubricate the accessible areas of the valve stem were either not in the procedure to perform, or the steps were in the procedure but were marked as "Not Applicable" due to the position of the valve. Neither the procedure nor the work order specified the need to remove the compensator. Removal of the compensator is necessary for proper lubrication of these valves due to their short stroke and configuration.

V. CORRECTIVE ACTIONS

Immediate corrective actions included removing the degraded grease from the affected PORV block valve, applying new grease, and successfully performing the surveillance test on the valve. Work order instructions

and procedure MSE-P0-8349 will be revised to provide steps for properly lubricating the PORV block valve motor operators.

VI. PREVIOUS SIMILAR EVENTS

There have been no previous similar reportable events at CPNPP in the last three years.