



UNITED STATES
NUCLEAR REGULATORY COMMISSION

REGION IV

611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TEXAS 76011-8064

Mr. C. L. Terry
TU Electric
Group Vice President, Nuclear
ATTN: Regulatory Affairs Department
P.O. Box 1002
Glen Rose, Texas 76043

SUBJECT: NRC INSPECTION REPORT 50-445/96-12; 50-446/96-12

Dear Mr. Terry:

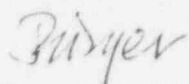
We have reviewed your letter dated December 20, 1996, in response to our letter and Notice of Violation (Notice) dated November 27, 1996. The Notice described that the procedure for performing inservice testing of relief valves did not meet ASME requirements in that it required that the valves be cycled to remove entrapped air, an activity that could affect the as-found set pressure. In response, you indicated that, although TU Electric recognized the NRC's concern with the wording in the procedure, TU Electric denied the violation. Procedure MSM-GO-0204, Revision 4, required that valves be cycled to remove entrapped air by increasing the test stand pressure slowly and evenly until the disc lifted off the valve seat and the air evacuated. This would ensure that no voids would exist, therefore complying with the Code requirement to test a relief valve with its normal system operating fluid. You indicated that the disc lift was not considered preconditioning, which could affect the as-found set pressure prior to testing, since it was not considered "maintenance, adjustment, disassembly, or other activity," as discussed in ASME Code paragraph 7.3.2.2.

After careful review of your response, we have concluded that a violation did exist, as documented in the subject inspection report. It is our position that the lifting of the valve disc to vent entrapped air could effect the as-found condition of the relief valves.

Although your response did not address corrective actions, we understand that you have modified the procedure for testing the relief valves. Please provide us a response within 30 days of receipt of this letter addressing the reasons for the violation and the corrective actions that you have taken.

We will review the implementation of your corrective actions during a future inspection to determine that full compliance has been achieved and will be maintained.

Sincerely,

for 
Samuel J. Collins
Deputy Regional Administrator

9701280263 970122
PDR ADOCK 05000445
Q PDR

TU Electric

-2-

Docket Nos.: 50-445

50-446

License Nos.: NPF-87

NPF-89

cc:

Mr. Roger D. Walker

TU Electric

Regulatory Affairs Manager

P.O. Box 1002

Glen Rose, Texas 76043

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G. R. Bynog, Program Manager/

Chief Inspector

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Boiler Division

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Honorable Dale McPherson

County Judge

P.O. Box 851

Glen Rose, Texas 76043

Texas Radiation Control Program Director

1100 West 49th Street

Austin, Texas 78756

TU Electric

-3-

Susan Rieff, Director
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Office of the Governor
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Austin, Texas 78711

bcc to DMB (IE01)

bcc distrib. by RIV:

L. J. Callan

DRS-PSB

Branch Chief (DRP/A)

Project Engineer (DRP/A)

Branch Chief (DRP/TSS)

Resident Inspector (2)

Leah Tremper (OC/LFDCB, MS: TWFN 9E10)

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bcc to DMB (IE01)

bcc distrib. by RIV:

L. J. Callan

DRS-PSB

Branch Chief (DRP/A)

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1/17/97	1/17/97	1/22/97	1/22/97

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Log # TXX-96520
File # 10130
IR 96-12
Ref. # 10CFR2.201

December 20, 1996

C. Lance Terry
Group Vice President

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

DEC 23 1996

SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION (CPSES)
DOCKET NO. 50-445 and 50-446
NRC INSPECTION REPORT NOS. 50-445/96-12 and 50-446/96-12
REPLY TO NOTICE OF VIOLATION

Gentlemen:

TU Electric has reviewed the NRC's letter dated November 27, 1996, concerning the inspections conducted by Messrs. A. Gody, Jr., Ms. V. L. Ordaz, Mr. H. A. Freeman, and Mr. W. J. Wagner on September 29 through November 9, 1996. Attached to the report was a Notice of Violation.

The Notice of Violation described "a procedure inadequacy which resulted in a failure to meet ASME/ANSI Code requirements for relief valve testing." TU Electric's reply to the Notice of Violation is attached. Should you have any comments or require additional information, please do not hesitate to contact Carl Corbin at (817)-897-0121.

Sincerely,

C. L. Terry
C. L. Terry

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

CBC:clc
Attachment

c - Mr. L. J. Callan, Region IV
Mr. J. I. Tapia, Region IV
Mr. T. J. Polich, NRR
Resident Inspectors, CPSES
Mr. G. Bynog, TDLR
Mr. J. C. Hair, ANII

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PDR ADOCK 05000445
Q PDR

97-0446

RESTATEMENT OF THE VIOLATION
(445/9612-03)

Technical Specification 4.0.5 requires that inservice testing of ASME Code Class 1, 2, and 3 pumps and valves be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda as required by 10 CFR 50.55a. Section XI, Subsection IWV, "Inservice Testing of Valves in Nuclear Power Plants," requires that valve testing be performed in accordance with the requirements stated in ASME/ANSI OM, Part 10.

Paragraph 4.3.1 of Part 10 states, in part, that safety and relief valves shall meet the inservice test requirements of Part 1. ASME/ANSI OM, Part 1, Paragraph 7.3, "Periodic Testing," states, in part, that no maintenance, adjustment, disassembly, or other activity which could affect "as found" set pressure or seat tightness data is permitted prior to testing

Contrary to the above, a procedure change dated September 30, 1996, to Procedure MSM-GO-0204, Revision 4, required that valves be cycled to remove entrapped air, an activity that could affect the "as found" set pressure. Four Unit 1 relief valves were cycled to remove entrapped air, prior to "as found" testing, using licensee Procedure MSM-GO-0204 during the Unit 1 refueling outage as follows:

- (1) the containment sump to Containment Spray Pump 1-02/1-04 suction isolation valve bonnet relief valve on October 9, 1996
- (2) the containment ventilation chilled water return header outside containment relief valve on October 16, 1996
- (3) the demineralized water/reactor makeup water outside containment building relief valve on October 17, 1996
- (4) the reactor makeup water to Pressurizer Relief Tank 1-01 outside containment building relief valve on October 18, 1996

This is a Severity Level IV violation (Supplement I) (50-445/9612-03).

REPLY TO THE VIOLATION
(445/9612-03)

Although TU Electric recognizes the NRC's concern with the wording in the procedure used for safety valve and relief valve bench testing, TU Electric denies this violation. TU Electric has clarified the procedural instructions for removing entrapped air to prevent potential misinterpretation. When testing relief valves which operate on water, the ASME Code clearly requires that the entrapped air at the disc must be removed. The ASME Code for Operation and Maintenance (OM) - Part 1 1987 Edition for relief valve testing paragraph 8.1.3.1 states in part,

Valves shall be tested with the normal system operating fluid...

The entrapped air is removed by increasing the pressure slowly and evenly until the disc lifts off the valve seat and the air is evacuated. This ensures no voids exist and complies with the Code requirement to test a relief valve with its normal system operating fluid.

The issue of whether or not, and how to remove the entrapped air in relief valves prior to set point pressure test was identified by TU Electric in March 1995. In addressing this issue, TU Electric has focused on (1) assuring all applicable ASME Code requirements are satisfied, (2) increasing the reliability of safety and relief valves, and (3) achieving consistent test results. TU Electric has had discussions with the Authorized Inspection Agency (AIA) and the Texas Department of Licensing and Regulation (TDLR), the ASME Code enforcement authority on Code requirements for relief valve testing. These agencies have verbally concurred with the TU Electric position that the removal of entrapped air in accordance with the current CPSES procedure is not an ASME Code violation. Furthermore, TU Electric has also had discussions with the valve manufacturer who stated that a relief valve designed for water should not be tested with an air pocket below the valve disc.

Relief valve testing is required in accordance with 10CFR50.55a. 10CFR50.55a refers to the ASME Code for relief valve testing requirements. CPSES is committed to the 1989 Edition of ASME, No Addenda. The 1989 Edition, No Addenda, of ASME Section XI refers to ASME OM - Part 1 1987 Edition for relief valve testing. Paragraph 7.3 of that Code states in part,

No maintenance adjustments, disassembly, or other activity which could affect 'as found' set pressure or seat tightness data is permitted prior to testing.

In accordance with ASME OM-Part 1, 1987 Edition, paragraph 7.3.2.2.

Tests prior to maintenance or set pressure adjustments or both, shall be performed in the following sequence:

- a) visual examination
- b) seat tightness determination
- c) set pressure determination
- d) determination of compliance with the Owner's seat tightness criteria
- e) verification of the integrity of the balancing device on balanced valves.

Maintenance is defined in ASME OM Part 1 paragraph 1.2 as

Action taken to prevent or correct deficiencies in the overpressure protection function of a pressure relief valve.

Additionally, maintenance that could affect the valves performance (Reference ASME OM Part 10 paragraph 3.4) is defined in footnote 1 as

Adjustments of stem packing, limit switches, or control system valves, and removal of the bonnet, stem assembly, actuator, obturator or control system components are examples of maintenance that could affect valve performance.

In accordance with the CPSES test procedure MSM-G0-0204, Revision 4, Procedure Change Notice (PCN) 4, the valves were tested in the following sequence: a) visual inspection, b) leak test, c) set pressure test, and d) post leak test (Note CPSES does not have balanced relief valves in the IST plan), which is consistent with the requirements of the Code. The procedure does not allow work (as defined by the ASME Code definition for maintenance, see above) to be performed on the valve prior to testing. Specifically, Procedure MSM-G0-0204-R4-05, Step 8.1.5 states,

For IST valves only, no maintenance, adjustment, disassembly or other activity which could affect 'as found' set pressure or seat tightness is to be performed prior to testing.

If the relief valves were tested in place, the valves would be tested on water and removal of an air pocket would not be required. However, the relief valves are removed from the system, decontaminated (if required), transported, and connected to a test bench. The activities that are necessary to prepare the relief valves for testing, introduce entrapped air below the valve disc (TU Electric is evaluating other potential test methods for removing the entrapped air or eliminating the introduction of entrapped air). After the initial leak test is performed, the disc may be lifted to remove any entrapped air. This is performed in order to test the valve on water (i.e. its "normal system operating fluid") as required by paragraph 8.1.2.1 of ASME OM Part 1. The disc lift associated with the CPSES procedure (MSM-G0-0204-R4-05) is not considered maintenance, as defined in ASME Code paragraph 1.2, nor is it considered an adjustment

since control rings or other parts are not manipulated in order to correct a deficiency nor is it considered disassembly.

The process of removing the entrapped air and testing the valves on the medium for which they were designed for service is necessary to produce consistent results.

On November 11, 1996, the procedure was clarified (Procedure Change Notification 5 to test procedure MSM-G0-0204-R4) to provide instructions for test personnel to monitor the pressure used to remove the entrapped air to assure that the set point (including tolerance) is not exceeded. The procedure states in part:

- 8.3.1.22. IF seat leakage was satisfactory during air (bubble) leak test and Steps 8.3.1.21 through 8.3.1.21.7 were N/A, then there is entrapped air in inlet of relief valve. Air shall be removed prior to 'As Found' set pressure test, USING Steps 8.3.1.22.2 through 8.3.1.22.3.
- 8.3.1.22.1 IF seat leakage was unsatisfactory during air (bubble) leak test and Steps 8.3.1.21 through 8.3.1.21.7 were performed, test line is water solid. MARK Steps 8.3.1.22.2 through 8.3.1.22.3 'N/A' THEN PROCEED to Step 8.3.1.23
- 8.3.1.22.2 INCREASE pressure slowly and evenly to lift disc valve seat with the intent to remove entrapped air. IF valve requires more than maximum tolerance specified in Step 6.1.1 to lift, then this lift should be considered 'As Found' lift, the lift should be considered unsatisfactory, and lift pressure should be recorded.
- 8.3.1.22.3 IF a stream of water is not observed during lift, THEN it should be assumed that some air remains and Step 8.3.1.22.2 should be performed again.

The pressure is applied slowly until either the entrapped air is evacuated or the set point (including tolerance) is exceeded. If the set point (including tolerance) is exceeded during the evacuation of air, the test is considered a failure. Even though the procedure had not yet been clarified as stated above, this technique was used during the testing completed in the fifth refueling outage for Unit 1. The technique has not eliminated test failures as evidenced by the declared failure of relief valve ICC-0618 when the set point tolerance was exceeded while performing this activity. Therefore, there is no apparent correlation between removing the entrapped air and preconditioning a valve to pass the acceptance criteria.

In summary, to meet the Code requirements for testing sequence and testing on system operating fluid the current method of removing the entrapped air is appropriate. Also the disc lift is not considered preconditioning since it is not considered "maintenance, adjustment, disassembly, or other activity" as discussed in ASME Code paragraph 7.3.2.2 which could affect "as found" set pressure prior to testing.