

OCT 27 1989

In Reply Refer To:
Dockets: 50-445/89-30
50-446/89-30

Mr. W. J. Cahill, Jr.
Executive Vice President
TU Electric
500 North Olive Street, Lock Box 81
Dallas, Texas 75201

Dear Mr. Cahill:

This refers to the inspection conducted by Mr. H. H. Livermore and other members of the Augmented Inspection Team (AIT) during the period May 15 through June 16, 1989, concerning the check valve failures which allowed back-flow through the auxiliary feedwater system during hot functional testing of Unit 1 at the Comanche Peak Steam Electric Station. The team's findings were documented in Inspection Report 50-445/89-30; 50-446/89-30 and were discussed with you and members of your staff on June 16, 1989.

Our report requested you to submit a response summarizing lessons learned and planned corrective actions. You were also asked to address the weaknesses and recommendations identified by the AIT and the time frame for corrective actions. Your response to our July 10, 1989, letter was submitted to the NRC on August 18, 1989, by letter TXX-89596. A NRC request for clarification and additional information was transmitted to you by our letter dated September 14, 1989. Your response by letter TXX-89744 was dated October 16, 1989.

The collective significance of the potential violations identified in the enclosure to this letter suggest that, at least for the circumstances associated with this inspection, your evaluations of equipment and personnel failures lack thoroughness and depth, and your corrective actions were ineffective and untimely. Consequently, we believe that it would be useful to meet with you to discuss these findings.

You should be prepared to discuss the findings and conclusions of the AIT inspection at a noticed meeting within two weeks in Glen Rose, Texas.

Immediately following the meeting, we plan to conduct a brief enforcement conference with your management to discuss these and

CPPD:NRR	AD:CPPD:NRR	D:CPPD:NRR	OE <i>for</i>	ADSP <i>for</i>
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other regulatory matters identified in Enclosure 1 to this letter. At that conference please be prepared to present your assessment of safety significance, root cause(s), and your corrective actions.

You will be informed in writing of the NRC decision on enforcement action when that decision is reached after the conference. In accordance with 10 CFR 2, Appendix C, the enforcement conference will not be open to the public.

Your cooperation on this matter will be appreciated.

Original signed by
D. M. Crutchfield, Associate Director
for Special Projects
Office of Nuclear Reactor Regulation

Enclosure:
Enforcement conference issues and
related regulatory requirements.

cc:
(See attached)



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

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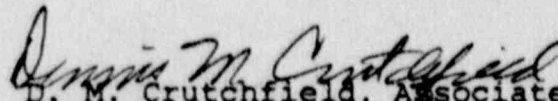
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D. M. Crutchfield, Associate Director
for Special Projects
Office of Nuclear Reactor Regulation

Enclosure:
Enforcement conference issues and
related regulatory requirements.

CC:
(See attached)

W. J. Cahill, Jr.

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50-445/89-30; 50-446/89-30

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Docket Files (50-445/446)

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LPDR

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CPPD Reading (HQ)

ADSP Reading

Site Reading File

R. Warnick

J. Wiebe

H. Livermore

MIS System, RIV

RSTS Operator, RIV

RPB, RIV

RIV Docket File

J. Gilliland, RIV

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J. Moore, OGC

M. Fields

D. Crutchfield

T. Quay

E. Jordan

B. Grimes

B. Hayes

C. Vandenburg

J. Partlow

Enclosure 1

Enforcement Conference Issues and Related Regulatory Requirements

1. The following activity appears to be contrary to:

Criterion V of Appendix B to 10 CFR Part 50 as implemented by Section 5.0, Revision 1, of the TU Electric Quality Assurance Manual states, in part, that activities affecting quality shall be prescribed by and accomplished in accordance with procedures.

Criterion XVI of Appendix B to 10 CFR Part 50 as implemented by Section 16.0, Revision 1, of the TU Electric Quality Assurance Manual which states, in part, that measures shall assure that significant conditions adverse to quality or plant safety are promptly identified and corrected to preclude repetition.

CPSES Operations Department Administration (ODA) Manual Procedure ODA-407, Revision 1, Section 6.1, which requires that plant systems and subsystems be operated in accordance with written approved procedures during normal, abnormal, and emergency conditions. Standard Operating Procedure SOP-304A, "Auxiliary Feedwater System," specifies steps necessary to perform various operations and alignments of the auxiliary feedwater system (AFW). The procedure specifically states that valve 1AF054 be closed prior to opening valve 1AF055.

On May 5, 1989, while performing steps in Procedure SOP-304A for system realignment, valves 1AF054 and 1AF055 were opened concurrently. This improper sequence allowed a reverse fluid flow path from the steam generators to the condensate storage tank via the AFW piping. This event occurred in a manner nearly identical to that of the April 23, 1989, event (see Violation 445/8924-V-01). Corrective actions for the April 23, 1989, event were inadequate to prevent recurrence on May 5, 1989.

2. The following activities appear to be contrary to:

Criterion XVI of Appendix B to 10 CFR Part 50 as implemented by Section 16.0, Revision 1, of the TU Electric Quality Assurance Manual which states, in part, that measures shall assure that significant conditions adverse to quality or plant safety are promptly identified and corrected to preclude repetition.

- a. In 1985. Problem Report (PR) 85-132 and Failure Analysis Report (FA) 85-001, Revision 0, stated that the bonnet and retainer for check valve 1MS142 were incorrectly installed and placed too low in the body preventing proper closure of the check valve. The action to prevent recurrence stated in FA 85-001, Revision 0, included revising the assembly procedure and correctly reassembling the check valve. Thus, in 1985 the applicant had identified the root cause of the check valve back-leakage problem and had formulated corrective action which should have corrected the problem. The applicant failed to take this appropriate corrective action in a timely manner. Rather, the cause was changed and the failure was attributed to harsh flow conditions. The valve disc and stud were replaced and the valve seat was reconditioned. A recommended design review was not performed.
- b. During Hot Functional testing (HFT) on April 5, 1989, the applicant identified significant back-leakage from the steam generators through three of the AFW supply line check valves. A Problem Report was not written and management was not informed. Work requests were written to repair the failed valves but were not given proper priority attention. The applicant failed to properly evaluate the back-leakage and failed to provide adequate and timely corrective action to prevent recurrence. As a result, significant backleakage occurred on April 23 and May 5, 1989.
- c. On April 19, 1989, AFW pump testing revealed that miniflow check valve 1AF069 was experiencing significant back-leakage. The individual valve was reworked. At the time of valve rework, the applicant believed the problem to be isolated to valve 1AF069 which had excessive axial play. Generic corrective action was not addressed and the applicant failed to identify the root cause and to take adequate corrective action to prevent recurrence.
- d. The AIT notes that it took an inordinately long period of time for the applicant to adequately identify the May 5 event and to report it as such, especially considering that it had a greater magnitude of severity than the April 23 event. The AIT team and the applicant's task team were not notified of the second event until May 15, 1989. The event was identified by PIR 89-129 only because the AIT persisted to question the event.

e. During physical disassembly of the system check valves. the AIT observed the following:

- (1) Some of the 4-inch check valve bonnets did not appear to be installed with the disk assembly parallel to the set ring.
- (2) The bonnet spacers on several of the check valves were deformed inward indicating over torquing of the bonnet stud fasteners.
- (3) Correspondingly, for the 4-inch valves that exhibited deformed bonnet spacers, the studs were also deformed (bent) inward which also indicates overtorquing of the fasteners.

These potential deficiencies were not recorded by nonconformance reports (NCRs) or any other means that would ensure identification, disposition, and root cause determination.

3. The following activities appear to be contrary to:

Criterion XI of Appendix B to 10 CFR Part 50 as implemented by Section 11.0, Revision 1, of the TU Electric Quality Assurance Manual which states, in part, that testing shall demonstrate that systems and components will perform satisfactorily in service. Contrary to the above, the following examples were identified:

- a. The applicant failed to perform post-modification and/or maintenance tests of Borg-Warner check valve internals that were removed and reworked in 1983, 1985, and on April 5, 1989.
- b. Under the applicant's preoperational test program, no testing was performed or planned, prior to plant operation, to ensure the AFW check valves were operable and capable of performing their intended function of preventing back-flow.

The NRC staff believes that the collective significance of the foregoing potential violations indicate that, at least for the circumstances associated with this inspection, your evaluations of equipment and personnel failures were inadequate and, similarly, the resulting corrective actions were ineffective. While actions are usually taken to correct known deficiencies, the actions are occasionally superficial or constrained to the immediate problem. Further, it appears that the large workload and schedule pressures continue to be at least a contributing causal factor. We also believe that these findings suggest that your quality assurance program is not sufficiently aggressive or inquisitive so as to anticipate and correct problems like these, before they occur.