

TENNESSEE VALLEY AUTHORITY
CHATTANOOGA, TENNESSEE
37401



May 15, 1974



Mr. John F. O'Leary, Director
Directorate of Licensing
Office of Regulation
U.S. Atomic Energy Commission
Washington, DC 20545

Dear Mr. O'Leary:

TENNESSEE VALLEY AUTHORITY - BROWNS FERRY NUCLEAR PLANT UNIT 1 -
DOCKET NO. 50-259 - FACILITY OPERATING LICENSE DPR-33 - ABNORMAL
OCCURRENCE REPORT BFAO-7426W

The enclosed report is to provide details concerning Target Rock
main steam relief valve (PCV 1-19) which experienced an extended
blowdown on two occasions. This event occurred on Browns Ferry
Nuclear Plant unit 1 on May 5 and 6, 1974, and is submitted in
accordance with Appendix A to Regulatory Guide 1.16, Revision 1,
October 1973.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

E. F. Thomas
Director of Power Production

Enclosure
CC (Enclosure)

Mr. Moseley, Director
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ABNORMAL OCCURRENCE REPORT

Report No.: BFAO-7426W
Report Date: May 15, 1974
Occurrence Date: May 5 and 6, 1974
Facility: Browns Ferry Nuclear Plant unit 1

Identification of Occurrence

Target Rock main steam relief valve (PCV 1-19) experienced an extended blowdown on two occasions.

Conditions Prior to Occurrence

On May 5, 1974, the reactor tripped from 92-percent power and main steamline isolation occurred as a result of a feedwater system startup test which was in progress.

On May 6, the reactor again tripped and isolation occurred while being returned to the 92-percent power level to continue the feedwater system startup test.

Description of Occurrence

On Tuesday, May 7, plant management completed a thorough analysis of pressure and temperature traces following the two reactor isolations and scrams which occurred on May 5 and 6. Their analyses showed that relief valve 1-19 apparently on both occasions did not fully reseal. This resulted in blowdown of the vessel to approximately 500 psi within approximately 10 minutes. No excessive vessel stress was experienced. Upon identification of the valve malfunction, the decision was made to shut down the reactor and to replace and inspect the valve.

Designation of Apparent Cause of Occurrence

There is no single apparent cause for the extended blowdown. The valve was completely disassembled and thoroughly inspected, and two abnormalities were found. Neither abnormality, acting independently, could cause the extended blowdown. The first abnormality found was a leaking pilot seat. Examination of the seat revealed that, in two opposite quadrants, there was evidence of very slight wire drawing across the seat. The second abnormality was a very small burr found on the second-stage stem insert guide sleeve. The burr was a result of deformed metal on the stem insert guide, probably caused by a hard lick during initial valve assembly. The additive effect of the first-stage seat leakage and the second-stage stem burr could create a condition which would result in an extended blowdown.

Analysis of Occurrence

On May 5, PCV 1-19 was open approximately 7.5 minutes. The vessel pressure dropped from 1,062 psig to 550 psig which results in a coolant thermal transient of 73° F. This degree of thermal transient would not create any abnormal, unacceptable thermal stresses in the vessel.

Analysis of Occurrence (continued)

On May 6, PCV 1-19 was open approximately 9 minutes. The vessel pressure dropped from 1,034 psig to 525 psig, which resulted in a thermal transient of 76° F. This degree of thermal transient would not create any abnormal, unacceptable thermal stresses in the vessel.

Corrective Action

Administrative procedures are being changed to ensure that offsite plant management is adequately notified during off shift periods to enable informed judgments in returning the unit to service following significant events such as these.

Failure Data

Valve data: Target Rock Corporation - Model 67F - Relief valve
Size 6" inlet - 10" outlet
Design pressure - 1,200 psi; setpoint 1,100 psig + 11 psi
Capacity - 800,000 lb/hr saturated steam; serial No. 72
Failures - See BFAO-749W