U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

Proposed Resoultion of Generic Safety Issue B-55, "Imporved Reliability of Target Rock Safety Relief Valves"

October 8, 1999

Dr. William D. Travers
Executive Director for Operations
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Dear Dr. Travers:

SUBJECT: PROPOSED RESOLUTION OF GENERIC SAFETY ISSUE B-55, "IMPROVED RELIABILITY OF TARGET ROCK SAFETY RELIEF VALVES"

During the 466th meeting of the Advisory Committee on Reactor Safeguards, September 30-October 2, 1999, we reviewed the proposed resolution of Generic Safety Issue (GSI) B-55, "Improved Reliability of Target Rock Safety Relief Valves." During our review, we had the benefit of discussions with representatives of the NRC staff. We also had the benefit of the document referenced.

Conclusion and Recommendation

- We agree with the staff's proposed resolution of GSI B-55.
- The staff should perform a statistical analysis to ensure that the apparent improvement in performance of the two-stage valves is significant and confirms its conclusion.

Background

The boiling water reactor (BWR) pressure relief system is designed to prevent over-pressurization of the reactor coolant pressure boundary. This protection is accomplished through the use of a plant-unique combination of safety valves (SVs), power actuated relief valves (PARVs), and dual function safety relief valves (SRVs) that have both a mechanical self-actuating setpoint function and a power-actuated function. The majority of the SRVs in older BWRs were manufactured by Target Rock.

Discussion

Some SRVs have exhibited anomalies, such as:

- Spurious actuation
- Upward setpoint drift
- Excessive blowdown

The BWR Owners Group and the individual BWR licensees have improved the performance of the SRVs by installing ion-beam implanted platinum disks or Stellite 21 disks to improve seating and installing additional pressure switches to actuate these valves using pneumatic power. Based on recent performance data, the staff has concluded that both the Stellite 21 and the ion-beam implanted platinum disks are performing better than the former Stellite 6B disks with a lower rate of occurrence of high setpoint drift beyond that allowed by plant Technical Specifications. The conclusion concerning the relative performance of the different disk materials would be more persuasive if it were supported by an appropriate statistical analysis of the data.

In addition, the staff stated that the affected BWR plants have sufficient margin to accommodate upward valve setpoint drift as high as 10 percent. In view of the improvement in valve performance, the margin available to accommodate upward setpoint drift and other options such as pressure switches, the staff does not plan to initiate any new regulatory actions. We agree with the proposed resolution of GSI B-55. The activities being pursued by the licensees under existing regulatory requirements are sufficient. There is no need to impose any additional regulatory requirements.

Sincerely,

/s/

Dana A. Powers Chairman

Reference:

E-mail to John T. Larkins, ACRS, from Charles Hammer, Office of Nuclear Reactor Regulation, NRC, Subject: ACRS Briefing of Generic Safety Issue B-55, "Improved Reliability of Target Rock Safety Relief Valves," dated September 2, 1999.

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