SSINS No.: 6835
IN 86-92

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
WASHINGTON, D.C. 20555

November 4, 1986

IE INFORMATION NOTICE NO. 86-92: PRESSURIZER SAFETY VALVE RELIABILITY

Addressees:

All pressurized-water reactor (PWR) facilities holding an operating license or a construction permit.

Purpose:

This notice is provided to inform recipients of potentially significant problems pertaining to the reliability of pressurizer safety valves. It is expected that recipients will review the information for applicability to their facilities and consider actions, if appropriate, to preclude a similar problem from occurring at their facilities. However, suggestions contained in this information notice do not constitute NRC requirements; therefore, no specific action or written response is required.

Description of Circumstances:

St. Lucie 2:

On April 17, 1986 while shut down for refueling, St. Lucie 2 personnel bench tested three pressurizer safety valves that have a technical specification (TS) set point of 2515 ± 1% psig. Valve V-1200 lifted at 2554 psig (14 psi above the maximum TS set point, valve V-1201 lifted at 2893 psig (353 psi above the maximum TS set point), and valve V-1202 was leaking too much to test. The problem with V-1201 was attributed to a hole in the bellows which allowed boric acid to contaminate and corrode the valve internals causing them to bind. The seat of V-1202 was badly steam cut. The minor set point drift of V-1200 was considered normal for 18 months operation. All valves were repaired before replacing them in service.

McGuire 1:

On September 2, 1986, McGuire 1 reported that a pressurizer safety valve had lifted at 2375 psig, 85 psi below the 2485 ± 1% TS required set point. The primary system depressurized to 1800 psig before the valve fully closed. This event occurred during pressurization for an inservice leak test. During subsequent bench testing of that valve, the as-found set point was determined to be 2320 psig. Analysis showed that the three lifts used to determine the valve set point at the last test were trending downward. Cocking of the spring, probably because of debris under the spring or a burr, was considered to be the cause of the set point "drift." When the spring was properly seated, the set point stabilized.

The low pressure at which the valve reclosed is attributed by the licensee to the setting of the blowdown adjusting ring, which deviated from the vendor's recommended setting by 137 notches. The remaining pressurizer safety valves on unit 1 were inspected and one other had misadjusted ring settings. The misadjustment was attributed to on-site readjustment by maintenance personnel. The correctly set rings on the third valve were set by the vendor's representative. Unit 1 valves will be repaired and reset.

Unit 2 had two pressurizer safety valves set by the vendor's representative and one set by plant maintenance personnel. The plant technician had recorded the ring settings, which were the same as the vendor's recommendation. Therefore, Unit 2 valves were determined to be operable.

Arkansas Nuclear One, Unit 2:

On September 15, 1986 while at 29% power, ANO 2 experienced a spurious opening and rapid reseating of two pressurizer safety valves, which resulted in an increase in level and pressure in the quench tank and a 4 psig drop in reactor coolant pressure. On September 25, 1986 following a reactor trip, quench tank parameters and tail pipe temperatures indicated that one or both pressurizer safety valves had lifted. Licensee tests showed that the setpoints of the valves were lower than the TS required 2485 psig ± 1%. One valve lifted at 2365 psig and the other between 2430 and 2455 psig. It was determined that the wrong test equipment had been used to set the lift pressure of the valves at the outage prior to these events. The valve manufacturer sent a representative to the site with the correct equipment. The valves have been correctly reset.

A search of licensee event reports from January 1, 1983 to the present shows that 20 other events involving 32 valves occurred. The problems were: 18 valves with set point drift, 12 valves with seat leakage, 1 valve with set pressure high and 1 valve designated as inoperable. Attachment 1 contains the details of this compilation. Other information on the subject of safety valve performance and reliability may be found in information notices 86-05; 86-05, Supplement 1; and 86-56, the subject of which are main steam safety valves.

No specific action or written response is required by this information notice. If you have any questions about this matter, please contact the Regional Administrator of the appropriate regional office or this office.

Edward L. Jordan, Director
Division of Emergency Preparedness
and Engineering Response
Office of Inspection and Enforcement

Technical Contact: Mary S. Wegner, IE
(301) 492-4511

Attachments:
1. Other Pressurizer Safety Valve Problems
2. List of Recently Issued IE Information Notices

OTHER PRESSURIZER SAFETY VALVE PROBLEMS FROM 01/01/83 TO PRESENT

PLANT	NO. VALVES
INOPERABLE	
SEQUOYAH 1	1
LEAKING	
SALEM 2	3
SALEM 1	3
MILLSTONE 2	1
SEQUOYAH 2	1
SEQUOYAH 2	1
BEAVER VALLEY 1	1
SUMMER	1
SEQUOYAH 2	1
SET POINT DRIFT	
CALVERT CLIFFS 2	1
BEAVER VALLEY 1	1
SET POINT DRIFT HIGH	
FT CALHOUN	1
SALEM 2	3
SALEM 1	3
MILLSTONE 2	1
PALISADES	1
SUMMER	1
YANKEE-ROWE	1
SET POINT DRIFT LOW	
ANO 1	1
SEQUOYAH 1	1
SEQUOYAH 2	3
SET PRESSURE HIGH	
YANKEE-ROWE	1

Attachment 2
IN 86-92
November 4, 1986

LIST OF RECENTLY ISSUED
IE INFORMATION NOTICES

Information Notice No.	Subject	Date of Issue	Issued to
86-91	Limiting Access Authorizations	11/3/86	All power reactor facilities holding an OL or CP; fuel fabrication and processing facilities
86-90	Requests To Dispose Of Very Low-Level Radioactive Waste Pursuant to 10 CFR 20.302	11/3/86	All power reactor facilities holding an OL or CP
86-89	Uncontrolled Rod Withdrawal Because Of A Single Failure	10/16/86	All BWR facilities holding an OL or CP
86-05 Sup. 1	Main Steam Safety Valve Test Failures And Ring Setting Adjustments	10/16/86	All power reactor facilities holding an OL or CP
86-25 Sup. 1	Traceability And Material Control of Material And Equipment, Particularly Fasteners	10/15/86	All power reactor facilities holding an OL or CP
86-88	Compensatory Measures For Prolonged Periods Of Security System Failures	10/15/86	All power reactor facilities holding an OL or CP; fuel fabrication and processing facilities
86-87	Loss Of Offsite Power Upon An Automatic Bus Transfer	10/10/86	All power reactor facilities holding an OL or CP
86-86	Clarification Of Requirements For Fabrication And Export Of Certain Previously Approved Type B Packages	10/10/86	All registered users of NRC certified packages
86-85	Enforcement Actions Against Medical Licensees For Willfull Failure To Report Misadministrations	10/3/86	All NRC medical licensees

OL = Operating License
CP = Construction Permit

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