

U.S. NUCLEAR REGULATORY COMMISSION  
LICENSEE EVENT REPORT

CONTROL BLOCK / / / / / / (1) (PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)  
 /V/A/N/A/S/1/ (2) /0/0/-/0/0/0/0/0/-/0/0/ (3) /4/1/1/1/1/ (4) / / / (5)  
 LICENSEE CODE LICENSE NUMBER LICENSE TYPE CAT  
 /0/1/ REPORT /L/ (6) /0/5/0/0/0/3/3/8/ (7) /0/3/1/8/8/1/ (8) /0/4/1/3/8/1/ (9)  
 SOURCE DOCKET NUMBER EVENT DATE REPORT DATE

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

/0/2/ / On March 18, 1981, with Unit 1 in Cold Shutdown, a pressurizer PORV nitrogen /  
 /0/3/ / supply tank pressure dropped below the minimum required to operate its /  
 /0/4/ / associated PORV for low temperature RCS overpressurization protection. On /  
 /0/5/ / March 19, 1981, the remaining pressurizer PORV became inoperable for the same /  
 /0/6/ / reason. The action statement of the LCO was met. The public health and /  
 /0/7/ / safety were not affected. /  
 /0/8/ /

SYSTEM CODE	CAUSE CODE	CAUSE SUBCODE	COMPONENT CODE	COMP. SUBCODE	VALVE SUBCODE
/0/9/ /S/H/ (11)	/E/ (12)	/B/ (13)	/V/A/L/V/O/P/ (14)	/D/ (15)	/Z/ (16)
LER/RO REPORT NUMBER	EVENT YEAR	SEQUENTIAL REPORT NO.	OCCURRENCE CODE	REPORT TYPE	REVISION NO.
(17) /8/1/	/-/	/0/0/1/	/\	/0/3/	/L/ /-/ /0/

ACTION TAKEN	FUTURE ACTION	EFFECT ON PLANT	SHUTDOWN METHOD	HOURS	ATTACHMENT SUBMITTED	NPRD-4 FORM SUB.	PRIME COMP. SUPPLIER	COMPONENT MANUFACTURER
/X/ (18)	/X/ (19)	/Z/ (20)	/Z/ (21)	/0/0/0/0/ (22)	/Y/ (23)	/N/ (24)	/A/ (25)	/S/4/2/0/ (26)

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

/1/0/ / Leaks in both PORV nitrogen low temperature RCS overpressurization systems /  
 /1/1/ / caused the nitrogen tanks to depressurize. Both PORV's were aligned to an /  
 /1/2/ / alternate nitrogen source and operability restored. The RCS was depressurized /  
 /1/3/ / and vented on March 20 and both PORV nitrogen low temperature /  
 /1/4/ / overpressurization systems repaired. /

FACILITY STATUS	%POWER	OTHER STATUS	METHOD OF DISCOVERY	DISCOVERY DESCRIPTION (32)
/1/5/ /G/ (28)	/0/0/0/ (29)	/NA / (30)	/A/ (31)	/ OPERATOR OBSERVATION /

ACTIVITY RELEASED	CONTENT OF RELEASE	AMOUNT OF ACTIVITY (35)	LOCATION OF RELEASE (36)
/1/6/ /Z/ (33)	/Z/ (34)	/NA /	/NA /

PERSONNEL EXPOSURES NUMBER	TYPE	DESCRIPTION (39)
/1/7/ /0/0/0/ (37)	/Z/ (38)	/NA /

PERSONNEL INJURIES NUMBER	DESCRIPTION (41)
/1/8/ /0/0/0/ (40)	/NA /

LOSS OF OR DAMAGE TO FACILITY TYPE	DESCRIPTION (43)
/9/ /Z/ (42)	/NA /

PUBLICITY ISSUED	DESCRIPTION (45)	NRC USE ONLY
/2/0/ /N/ (44)	/NA /	/ / / / / / / / / / / / / / / /

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### Description of Event

Low temperature RCS overpressurization protection is provided by two pressurizer PORV's. When the pressurizer PORV's are operated in "low temperature RCS overpressurization protection mode" each PORV receives its motive power from its own nitrogen tank via step down regulators and a control solenoid operated valve. In order to provide 120 valve cycles (to meet no operator action for 10 minutes with 5 seconds per valve cycle design criteria), each tank must be pressurized to 1725 psig. Alarms are provided in the Control Room which are operated by a pressure switch on each nitrogen tank. Tank pressure indication is not provided in the Control Room, but is provided locally in the containment. The setpoint for the alarm pressure switches and an operability criteria for low temperature RCS overpressurization protection as provided by each PORV, is a tank pressure of 1775 psig (50 psig above the minimum required to account for instrumentation error).

On March 18, 1981, with Unit 1 in Cold Shutdown, a pressurizer PORV nitrogen supply tank pressure dropped below 1775 psig rendering one of two pressurizer PORV's inoperable for low temperature RCS overpressurization protection. On March 19, 1981 the second pressurizer PORV nitrogen supply tank pressure dropped below 1775 psig rendering the remaining pressurizer PORV inoperable for low temperature RCS overpressurization protection. This event is reportable pursuant to T.S. 6.9.1.9.b.

### Probable Consequences of Occurrence

The action statement of the LCO was met. The public health and safety were not affected.

### Cause of Event

The nitrogen lines between the nitrogen tanks and PORV operators were leaking at mechanical joint points and component points. The primary plant nitrogen supply truck had insufficient pressure to provide makeup to the pressurizer PORV nitrogen tanks. Local repressurization of the tanks with nitrogen bottles proved futile; the tanks dropped below their setpoint pressure soon after being repressurized.

### Immediate Corrective Action

When the first pressurizer PORV (PCV-1455C) became inoperable for low temperature RCS overpressurization protection, attempts were made to refill its associated nitrogen tank with bottled nitrogen. After it became apparent that refill attempts were futile, work began to seal all leakage points in the PCV-1455C nitrogen system. 8 hours and 15 minutes after the first PORV (PCV-1455C) became inoperable, the second PORV (PCV-1456) became inoperable. 4 hours and 15 minutes after PCV-1456 became inoperable, the "C" RCS accumulator was aligned via the containment nitrogen header to supply nitrogen to the pressurizer PORV's. This action restored operability to both PORV's; however, redundancy was reduced since the PORV's were aligned to a common nitrogen source. On March 20, 1981, the RCS was depressurized and

both NRV's blocked open. Both PORV nitrogen systems were reworked and restored to operable status prior to repressurization of the RCS.

Scheduled Corrective Action

Future corrective actions are pending completion of an on going engineering study of the pressurizer PORV nitrogen low temperature RCS overpressurization system.

Actions Taken to Prevent Recurrence

The pressurizer PORV nitrogen low temperature RCS overpressurization system is currently being evaluated by engineering. Evaluation results will determine the actions that are necessary to prevent recurrence.

Generic Implications

The pressurizer PORV nitrogen low temperature RCS overpressurization system was custom built and designed. Other systems of similar designs might experience similar leakage problems.