

U.S. NUCLEAR REGULATORY COMMISSION  
LICENSEE EVENT REPORT

CONTROL BLOCK / / / / / (1) (PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

/0/1/ /V/A/N/A/S/2/ (2) /0/0/-/0/0/0/0/0/-/0/0/ (3) /4/1/1/1/1/ (4) / / / (5)  
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/0/1/ REPORT /L/ (6) /0/5/0/0/0/3/3/9/ (7) /0/6/2/0/8/1/ (8) /0/7/1/5/8/1/ (9)  
SOURCE DOCKET NUMBER EVENT DATE REPORT DATE

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

/0/2/ / On June 20, 1981, with Unit 2 in Hot Shutdown, pressure in both pressurizer PORV /  
/0/3/ / nitrogen supply tanks dropped below the minimum required to operate the pressuri- /  
/0/4/ / zer PORV's in a manne consistent with the design basis (120 minimum available /  
/0/5/ / valve cycles) for low temperature RCS overpressurization protection. This event /  
/0/6/ / is reportable pursuant to T.S. 6.9.1.9.b. The action statement of the LCO (T.S. /  
/0/7/ / 3.4.9.3) was met. The public health and safety were not affected. /  
/0/8/ /

SYSTEM CODE	CAUSE CODE	CAUSE SUBCODE	COMPONENT CODE	COMP. SUBCODE	VALVE SUBCODE
<u>/0/9/</u> <u>/S/H/</u> (11)	<u>/E/</u> (12)	<u>/B/</u> (13)	<u>/V/A/L/V/O/P/</u> (14)	<u>/D/</u> (15)	<u>/Z/</u> (16)
LER/RO REPORT NUMBER	EVENT YEAR	SEQUENTIAL REPORT NO.	OCCURRENCE CODE	REPORT TYPE	REVISION NO.
(17)	<u>/8/1/</u>	<u>/-/</u>	<u>/0/5/1/</u>	<u>/ \ /</u>	<u>/0/3/</u>
	<u>/L/</u>	<u>/-/</u>	<u>/0/</u>		

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

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

/1/0/ / Leaks in both pressurizer PORV nitrogen low temperature RCS overpressurization /  
/1/1/ / systems caused the nitrogen tanks to depressurize. The tanks were floated on the /  
/1/2/ / the primary plant nitrogen supply bottle truck to maintain adequate pressure. /  
/1/3/ / Repairs to reduce leakage have been made. /  
/1/4/ /

FACILITY STATUS	%POWER	OTHER STATUS	METHOD OF DISCOVERY	DISCOVERY DESCRIPTION (32)
<u>/1/5/</u> <u>/G/</u> (28)	<u>/0/0/0/</u> (29)	<u>/ NA /</u> (30)	<u>/A/</u> (31)	<u>/ Operator Observation /</u>

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

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

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

LOSS OF OR DAMAGE TO FACILITY TYPE	DESCRIPTION (43)
<u>/1/9/</u> <u>/Z/</u> (42)	<u>/ NA /</u>

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

### 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 June 20, 1981, at approximately 1945, with Unit 2 in Hot Shutdown, the pressure in one of the pressurizer PORV nitrogen supply tanks dropped below 1775 psig rendering one of the pressurizer PORV's inoperable. At 2145 on June 20, 1981, the pressure in the remaining pressurizer PORV nitrogen supply tank 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 Causes of Occurrence

The ability of the low temperature RCS overpressurization protection system to provide extended overpressurization protection was reduced. The action statement of the LCO (T.S. 3.4.9.3) was met. The public health and safety were not affected.

### Cause of Event

Nitrogen leakage from the low temperature RCS overpressurization protection system caused the tank pressures to drop. The primary plant nitrogen supply tube truck had insufficient pressure to clear the low level alarm (reset point at approximately 1835 psig).

### Immediate Corrective Action

Seven hours and forty-five minutes after both pressurizer PORV's were declared inoperable, operability was restored by floating the pressurizer PORV nitrogen bottles on the primary plant tube truck. Although the low pressure alarms did not reset (reset at approximately 1835 psig), pressurizer PORV tank pressures were observed within the operable range at 1800 psig on local pressure gages. Primary plant bottle truck pressure was closely monitored until 1330 on June 21, 1981 to insure operability of the pressurizer PORV's for RCS overpressurization protection. At 1330 on June 21, 1981 the pressurizer PORV's were blocked open providing an RCS vent path which precluded an overpressurization event.

After blocking open the pressurizer PORV's, a leaking pressurizer PORV nitrogen supply relief valve was reworked and all pressure fitting tightened.

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. North Anna Units 1 and 2 have had chronic pressurizer PORV nitrogen leakage problems.