

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)
 LICENSEE CODE LICENSE NUMBER LICENSE TYPE CAT
 /0/1/ REPORT /L/ (6) /0/5/0/0/0/3/3/9/ (7) /0/8/0/6/8/1/ (8) /0/8/2/7/8/1/ (9)
 SOURCE DOCKET NUMBER EVENT DATE REPORT DATE
 EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)
 /0/2/ / On August 6 and 17, 1981, with the unit in Modes 5 and 4 respectively, the press-/
 /0/3/ / ure in both pressurizer PORV nitrogen supply tanks dropped below the minimum re- /
 /0/4/ / quired to operate the pressurizer PORV's in a manner consistent with the design /
 /0/5/ / basis (1^0 minimum available valve cycles) for low temperature RCS overpressuriz-/
 /0/6/ / ation protection. In each case, the action statement of the applicable LCO (T.S./
 /0/7/ / 3.4.9.3) was met. Therefore, the public health and safety were not affected. /
 /0/8/ / This event is reportable pursuant to T.S. 6.9.1.9.b. /
 SYSTEM CAUSE CAUSE COMP. VALVE
 CODE CODE SUBCODE COMPONENT CODE SUBCODE SUBCODE
 /0/9/ /C/J/ (11) /E/ (12) /B/ (13) /V/A/L/V/O/P/ (14) /D/ (15) /Z/ (16)
 LER/RO EVENT YEAR SEQUENTIAL OCCURRENCE REPORT REVISION
 (17) REPORT NO. NO.
 NUMBER /8/1/ /-/ /0/6/3/ / \ / /0/3/ /L/ /-/ /0/
 ACTION FUTURE EFFECT SHUTDOWN ATTACHMENT NPRD-4 PRIME COMP. COMPONENT
 TAKEN ACTION ON PLANT METHOD HOURS SUBMITTED FORM SUB. SUPPLIER 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 pressurizer PORV nitrogen supply systems caused the associated /
 /1/1/ / nitrogen tanks to depressurize. On both occasions, a full nitrogen tube truck /
 /1/2/ / was ordered and used to repressurize the tanks. The nitrogen supply tanks were /
 /1/3/ / then floated on the tube truck to maintain an adequate operating pressure for /
 /1/4/ / the PORV's. /
 FACILITY STATUS %POWER OTHER STATUS METHOD OF DISCOVERY DISCOVERY DESCRIPTION (32)
 /1/5/ /G/ (28) /0/0/0/ (29) / N/A / (30) /A/ (31) / Operator Observation /
 ACTIVITY CONTENT
 RELEASED 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 (43)
 TYPE DESCRIPTION
 /1/9/ /Z/ (42) / NA /
 PUBLICITY
 ISSUED DESCRIPTION (45) 8109080205 810827
 /2/0/ /N/ (44) / NA / PDR ADOCK 05000339 S PDR NRC USE ONLY
 NAME OF PREPARER W. R. CARTWRIGHT PHONE (703) 894-5151

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 August 6, 1981, at approximately 1920 and August 17, 1981, at approximately 0801, with the unit in a cold and hot shutdown mode respectively, the pressure in both pressurizer power operated relief valve (PORV) nitrogen supply tanks dropped below 1775 psig rendering both pressurizer PORV's incapable of meeting the valve cycle design criteria for low temperature RCS overpressure protection. This event is reportable pursuant to T.S. 6.9.1.9.b.

Probable Consequences of Occurrence

The ability of the low temperature RCS overpressure protection system to provide extended overpressurization protection was reduced. However, the operability of the PORV's was restored within 8 hours in compliance with the Action Statement of the applicable LCO (T.S. 3.4.9.3) and as a result the health and safety of the general public were not affected by either of the events.

Cause of Event

Nitrogen leakage from the low temperature RCS overpressure protection system caused the associated supply tank pressures to drop to where the PORV's were rendered incapable of meeting the valve cycle design criteria.

Immediate Corrective Action

On both occasions, a nitrogen tube truck was ordered from a nearby vendor and used to repressurize both nitrogen supply tanks upon arrival. The nitrogen tanks were then floated on the tube truck to maintain an adequate operating pressure for the PORV's.

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 Reccurrence

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 (past Unit 2 LER's include 80-043, 050, 090, and 81-051).