

LICENSEE EVENT REPORT

CONTROL BLOCK:

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 (1)

(PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

0 1 | C O F S V I | 2 0 0 - 0 0 0 0 0 - 0 0 | 3 4 1 1 2 0 | 4 | 5

7 8 9 14 15 25 26 30 57 CAT 58

LICENSEE CODE LICENSE NUMBER LICENSE TYPE

CON'T

0	1
7	8

REPORT SOURCE

L	6	0	5	0	0	0	2	6	7	7	0	1	2	0	8	1	8	0	9	2	7	8	3	9
60	61								68	69						74	75							80

DOCKET NUMBER

EVENT DATE

REPORT DATE

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

0 2 During a shutdown maintenance period, instrument personnel performed the primary
0 3 coolant pressure scram calibration and found that the voltage outputs of the three
0 4 pressure transmitters were high and could have caused the primary coolant low pressure
0 5 switches to trip below the limits of LCO 4.4.1, Table 4.4-1. This occurrence was
0 6 reported per Fort St. Vrain Technical Specification AC 7.5.2(b)1 and AC 7.5.2(b)2. No
0 7 effect on public health or safety. No affect on plant operation. Similar occurrences:
RO 77-46, 79-57, 81-030, and 81-055.

SYSTEM CODE I B 11		CAUSE CODE E 12		CAUSE SUBCODE E 13		COMPONENT CODE I N S T R U 14		COMP. SUBCODE E 15		VALVE SUBCODE 7 16	
LER/RO REPORT NUMBER 17		EVENT YEAR 8 1		SEQUENTIAL REPORT NO. 0 0 8		OCCURRENCE TYPE 0 3		REPORT TYPE X		REVISION NO. 2	
ACTION TAKEN E 18		FUTURE ACTION Z 19		EFFECT ON PLANT Z 20		SHUTDOWN METHOD Z 21		HOURS 0 0 0 0 22		ATTACHMENT SUBMITTED Y 23	
NPRD-4 FORM SUB. N 24		PRIME COMP. SUPPLIER N 25		COMPONENT MANUFACTURER G 0 6 3 26							

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

1 0 The high output voltages from the pressure transmitters were due to instrument drift
1 1 of the pressure transmitter. The pressure transmitters were calibrated and the sur-
1 2 veillance test successfully completed. Neither monthly checks nor annual calibrations
1 3 have revealed any further instrument drift of the pressure transmitters since September,
1 4 1981. Refer to ROs 81-030 and 81-055. No further corrective action is anticipated or
7 8 9 required.

8 9 required.

FACILITY STATUS % POWER OTHER STATUS (30) METHOD OF DISCOVERY DISCOVERY DESCRIPTION (32)

1 5 G (28) 0 0 0 (29) N/A B (31) Scheduled Surveillance Test 80

ACTIVITY CONTENT
RELEASED OF RELEASE

1 6 2 33 34 N/A

AMOUNT OF ACTIVITY (35)

LOCATION OF RELEASE (36)

N/A

PERSONNEL EXPOSURES		NUMBER		TYPE		DESCRIPTION	
1	7	0	0	0	37	Z	3P N/A

PERSONNEL INJURIES		DESCRIPTION	
NUMBER			
1	2	0	0
0	0	0	40
		N/A	

7	8	9	11	12
LOSS OF OR DAMAGE TO FACILITY (43)				
TYPE		DESCRIPTION		
1	9	Z (42)	N/A	

7	8	9	10	PUBLCITY										NRC USE ONLY										
2	0	1	1	44	ISSUED DESCRIPTION																			

NAME OF PREPARER

PHONE: (303) 785-2224

REPORT DATE: September 27, 1983

REPORTABLE OCCURRENCE 81-030

OCCURRENCE DATE: April 22, 1981

ISSUE 2

Page 1 of 6

FORT ST. VRAIN NUCLEAR GENERATING STATION
PUBLIC SERVICE COMPANY OF COLORADO
16805 WELD COUNTY ROAD 19 1/2
PLATTEVILLE, COLORADO 80651

REPORT NO. 50-267/81-030/03-X-2

Final

IDENTIFICATION OF
OCCURRENCE:

Testing of the primary coolant programmed pressure scram revealed that two of the three pressure transmitters were out of calibration and could have allowed operation with trip setpoints less conservative than required by LCO 4.4.1, Table 4.4-1.

This was reportable per Fort St. Vrain Technical Specification AC 7.5.2(b)1 and AC 7.5.2(b)2.

EVENT
DESCRIPTION:

In January, 1981, while the reactor was in a shutdown condition, instrument personnel performed the annual calibration of the primary coolant pressure scram channels and observed that the three pressure transmitters were out of calibration in the nonconservative direction. This could have resulted in the low pressure scram trips occurring at lower pressures than allowed by LCO 4.4.1, Table 4.4-1. This was reported as Reportable Occurrence 81-008 on February 19, 1981. Part of the corrective action was to begin a monthly check of pressure transmitter output against reactor pressure. The check was performed when reactor pressure was above 400 psia, and consisted of:

1. Connecting a calibrated pressure gauge to a PCRV penetration to determine reactor pressure.
2. Converting the indicated reactor pressure to an expected pressure transmitter output voltage.
3. Connecting a digital voltmeter to each of the three pressure transmitters to determine the measured output voltage (pressure).
4. Comparing the expected voltage obtained in 2. to the measured voltage obtained in 3. to determine if any instrument drift had occurred.

On April 22, 1981, while operating at 50% thermal power and 170 MW electrical, while performing the monthly calibration check of the primary coolant pressure scram channels, plant instrument personnel observed that two of the three pressure transmitters were out of calibration in the nonconservative direction. This could have resulted in actuation of the high pressure trips of the two affected channels at higher pressures than allowed by LCO 4.4.1.

See Figure 1. The output voltage from the pressure element ① goes to the pressure transmitter ② which supplies a measured signal to the pressure switch high ③ and the pressure switch low ④.

The high and low pressure bistables ③ and ④ are programmed by circulator inlet temperature through an auctioneer circuit ⑤ and bistable setpoint programmers ⑥ or ⑦.

The high pressure bistable ③ provides a trip signal to both loop shutdown and steam/water dump (2 of 3) circuitry ⑧ and a scram to the appropriate channel ⑨. (Channel "A" in Figure 1) This trip circuitry is designed to provide protection in the event that moisture monitor trip circuitry fails to operate a loop trip steam/water dump and scram on high moisture levels, resulting from a rupture of the secondary coolant system.

The low pressure bistable ④ provides a scram function only ⑨.

The programmed pressure temperature curve is shown in Figure 2. The low output voltage from the pressure transmitters could have resulted in the high pressure trips occurring above the allowable high pressure curve (line A A). See Table 1. The low pressure trips would have occurred above the low pressure trip curve (line B B) in a conservative direction.

Measured Reactor Pressure and PT Expected Output Voltage/Equivalent Pressure (PSIA)	PT Measured Output Voltage/Equivalent Pressure (PSIA)			ΔP		
	1108	1109	1110	1108	1109	1110
656			①			①
	647	645	657	-9	-11	+1

TABLE 1

① PT in tolerance - information included for completeness.

With an actual reactor pressure of 656 psia, a measured pressure of 645 psia, circulator inlet temperature of 572 degrees fahrenheit and a differential pressure of -11, in order for a high pressure scram to occur from PT-1109, reactor pressure would be $656 + 11 = 667$ psia and above line (A) (A) on Figure 2.

Although the high pressure trips could have occurred at a value less conservative than that established in the Technical Specifications, they would not prevent the fulfillment of the functional requirements of the system.

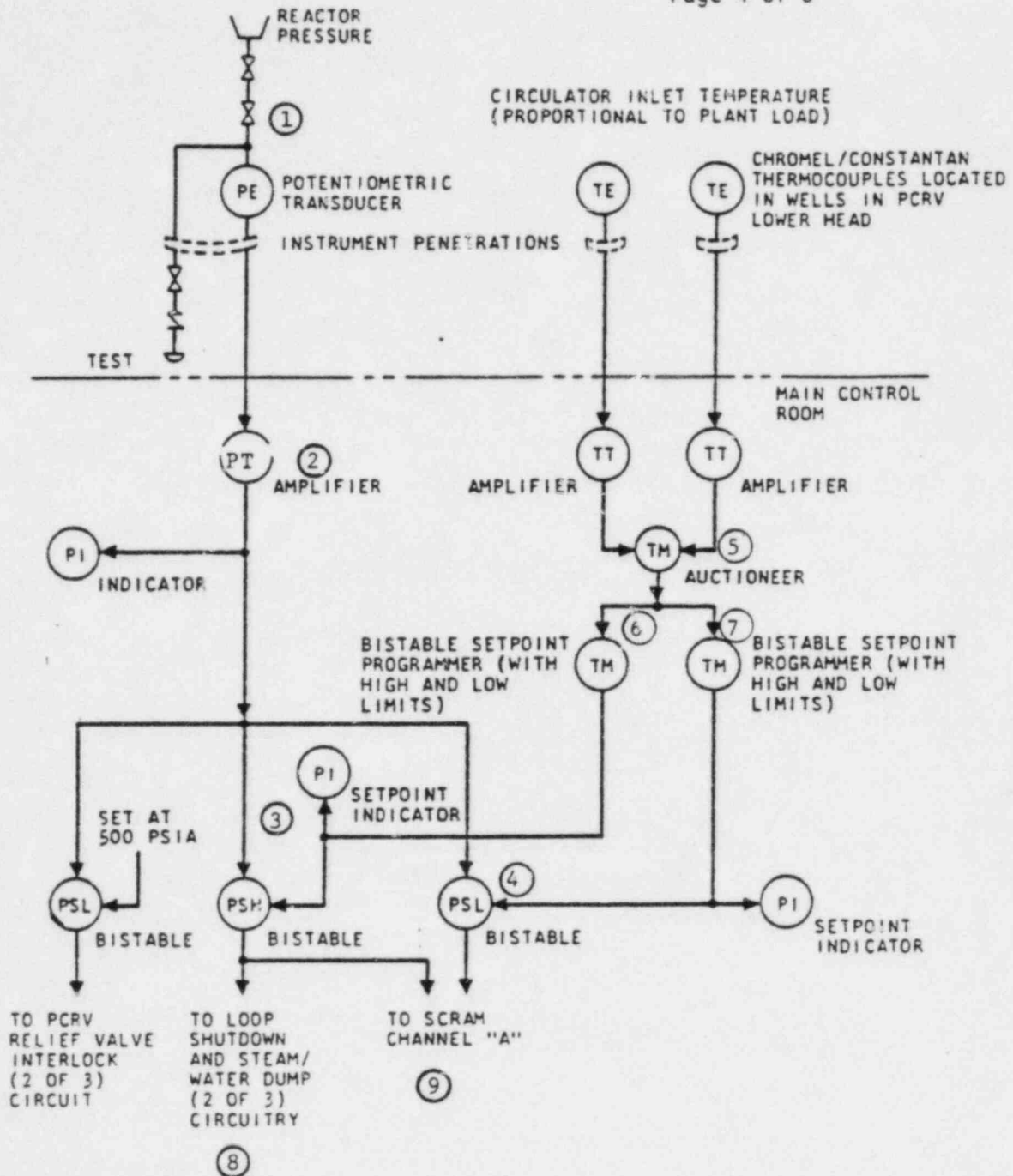
CAUSE
DESCRIPTION:

The low output voltages from the pressure transmitters were due to instrument drift of the pressure transmitters.

CORRECTIVE
ACTION:

The pressure transmitters were calibrated and returned to service.

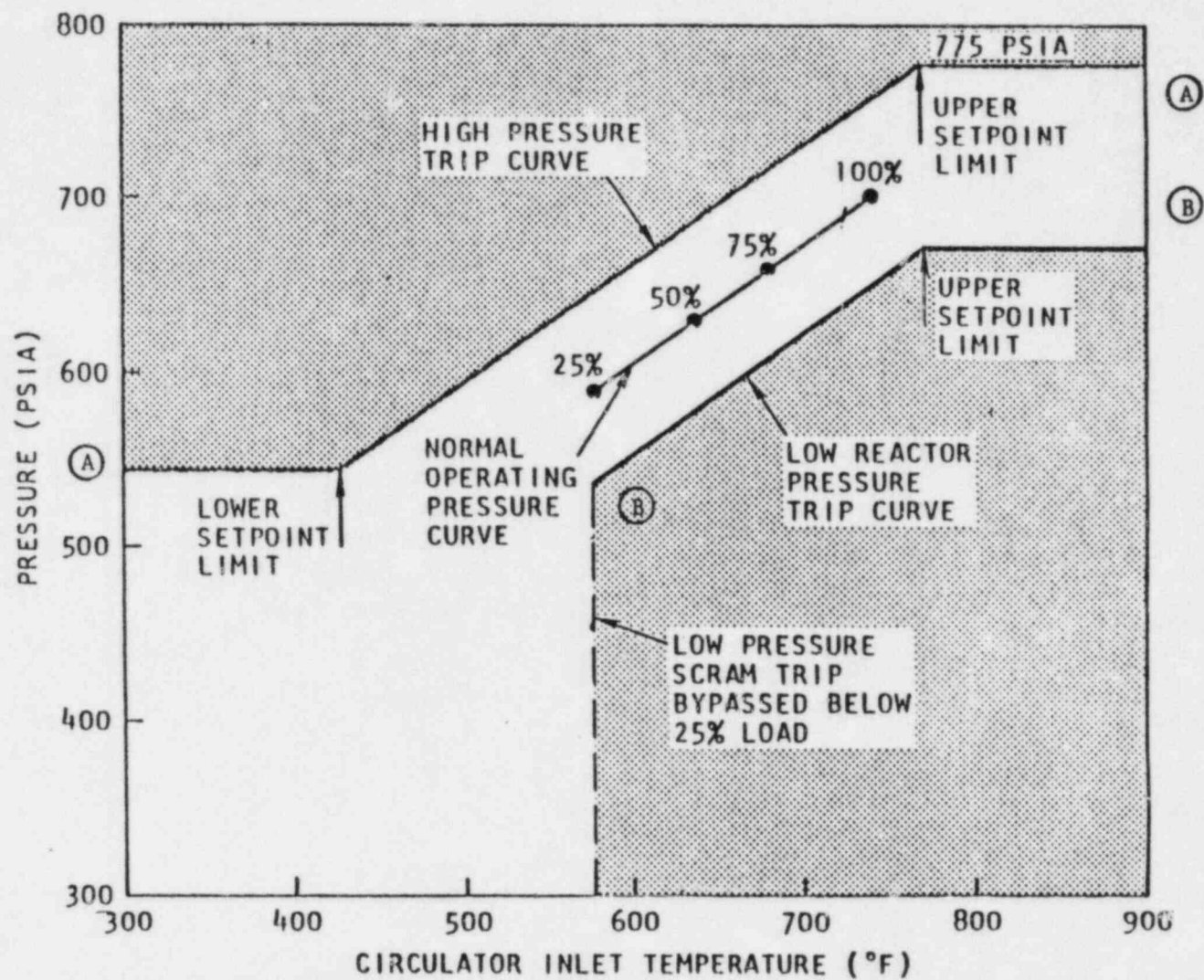
- | Once a month (while the reactor was pressurized above 400 psia), the pressure transmitter voltage outputs were checked against reactor pressure to determine if further instrument drift was occurring.
- | On August 3, 1981, one of the three pressure transmitters were out of calibration. This was reported as Reportable Occurrence 81-055.
- | Since September, 1981, neither the monthly checks nor the two annual calibrations have revealed any further instrument drift of the pressure transmitters.
- | Commencing with October, 1983, the monthly Reactor Pressure Transmitter Check (SR-RE-18-M) will be discontinued. The Primary Coolant Pressure Scram Calibration (SR 5.4.1.1.9c-R) will continue as per normal schedule.
- | No further corrective action is anticipated or required.



Reactor pressure instrument channel (typ. for channels B&C)

FIGURE 1

FIGURE 2



Programmed reactor pressure high-low trip points

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