



REPORT DATE: June 6, 1983

REPORTABLE OCCURRENCE 80-41  
ISSUE 1

OCCURRENCE DATE: July 24, 1980

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FORT ST. VRAIN NUCLEAR GENERATING STATION  
PUBLIC SERVICE COMPANY OF COLORADO  
16805 WELD COUNTY ROAD 19 1/2  
PLATTEVILLE, COLORADO 80651-9298

REPORT NO. 50-267/80-41/03-X-1

Final

IDENTIFICATION OF  
OCCURRENCE:

During the July performance of the monthly check of the helium circulator seal malfunction pressure differential switches, it was discovered that one of twelve switch units tripped outside the limits specified in LCO 4.4.1, Table 4.4-3.

During the August performance of the monthly check of the helium circulator seal malfunction pressure differential switches, it was discovered that four of the twelve switch units tripped outside the limits specified in LCO 4.4.1, Table 4.4-3.

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

EVENT  
DESCRIPTION:

During normal plant operation, instrument personnel performed the circulator seal malfunction (buffer-mid-buffer) switch operability check. The switches are normally calibrated on an annual basis; however, due to the problems cited in the previous reports as listed on the LER, a check of buffer-mid-buffer trip settings on a monthly basis was undertaken as an interim measure to test operability.

There are twelve buffer-mid-buffer switch units, three per circulator. Each switch unit contains two electrical switches. The range of the sensing element is from (-) 100 inches of water to zero to (+) 100 inches of water. One of the electrical switches in each unit must operate at greater than or equal to (-) 10 inches water (negative buffer-mid-buffer), and the other electrical switch must operate at less than or equal to (+) 80 inches water (positive buffer-mid-buffer) per Table 4.4-3.

The trip settings for the twelve switch units are listed in Table 1 for July and in Table 2 for August.

The switch settings which were found to be less conservative than those established by the Technical Specification did not prevent the fulfillment of the functional requirements of the system.

CAUSE  
DESCRIPTION:

Dirt buildup and accumulation in the electrical switches prevented them from making proper contact.

CORRECTIVE  
ACTION:

The trip settings of the electrical switches were re-adjusted to the proper trip points.

Due to the continuing problems being experienced with the electrical switches, the interim check of the trip settings was conducted on a monthly basis.

The problem was investigated, and the process activated pressure differential switches were replaced with pressure differential transmitters and solid state dual bistable trip modules. The new units eliminate the use of electrical contacts and, therefore, reduce the probability of fouling by dirt and/or corrosion from the working environment. This modification was performed via Public Service Company Change Notice 1110.

No further corrective actions are anticipated or required.

TABLE 1

		As Found Inches H <sub>2</sub> O		As Left Inches H <sub>2</sub> O	
		Increasing Trip Point	Decreasing Trip Point	Increasing Trip Point	Decreasing Trip Point
1A Circulator	PDIS-21149	+76	- 8	+76	-8
	PDIS-21151	+78	- 8	+78	-8
	PDIS-21153	+75	- 5	+75	-5
1B Circulator	PDIS-21155	+77	- 6	+73	-6
	PDIS-21157	+73	-30 ①	+72	-5
	PDIS-21159	+72	- 8	+77	-8
1C Circulator	PDIS-21150	+75	- 5	+75	-5
	PDIS-21152	+75	- 7	+75	-7
	PDIS-21154	+75	- 3	+75	-3
1D Circulator	PDIS-21156	+73	- 7	+73	-7
	PDIS-21158	+74	- 6	+74	-6
	PDIS-21160	+75	- 8	+75	-8

① Denotes switch which was out of tolerance.

TABLE 2

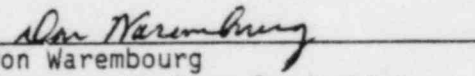
		As Found Inches H <sub>2</sub> O		As Left Inches H <sub>2</sub> O	
		Increasing Trip Point	Decreasing Trip Point	Increasing Trip Point	Decreasing Trip Point
1A Circulator	PDIS-21149	+75	- 5	+75	-5
	PDIS-21151	+77	- 8	+77	-8
	PDIS-21153	+73	-17 ①	+73	-6
1B Circulator	PDIS-21155	+82 ①	- 6	+78	-6
	PDIS-21157	+77	- 7	+77	-7
	PDIS-21159	+77	- 9	+77	-9
1C Circulator	PDIS-21150	+78	- 4	+78	-4
	PDIS-21152	+77	- 9	+77	-9
	PDIS-21154	+77	- 8	+77	-8
1D Circulator	PDIS-21156	+73	-50 ①	+73	-5
	PDIS-21158	+75	- 7	+75	-7
	PDIS-21160	+75	-47 ①	+75	-9

① Denotes switches which were out of tolerance.

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