

LICENSEE EVENT REPORT

CONTROL BLOCK: _____ (PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

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

CON'T
01 | REPORT SOURCE | L | 6 | 0 5 0 0 0 2 6 7 | 7 | 0 8 0 6 8 3 | 8 | _____ | 9

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

02 | During the period August 6, 1983 to August 8, 1983, with the reactor operating at
03 | steady state power, instrument cables carrying the speed signals from the helium
04 | circulators to the plant protective system (PPS) experienced several individual
05 | impedance variations. The minimum degree of redundancy associated with the
06 | high speed trip can not be met when a speed cable experiences impedance variations.
07 | These events constituted operation in degraded modes of LCO 4.4.1 and were reportable
08 | per AC 7.5.2(b)2. No similar reports.

09 | SYSTEM CODE | CAUSE CODE | CAUSE SUBCODE | COMPONENT CODE | COMP. SUBCODE | VALVE SUBCODE
I B | E | X | E L E C O N | Z | Z

17 | LER/RO REPORT NUMBER | EVENT YEAR | SEQUENTIAL REPORT NO. | OCCURRENCE CODE | REPORT TYPE | REVISION NO.
8 3 | 0 3 0 | 0 3 | X | 1
18 | ACTION TAKEN | FUTURE ACTION | EFFECT ON PLANT | SHUTDOWN METHOD | HOURS | ATTACHMENT SUBMITTED | NRPD-4 FORM SUB. | PRIME COMP. SUPPLIER | COMPONENT MANUFACTURER
F | 7 | Z | Z | 0 0 0 0 | Y | N | L | P 4 2 2

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

10 | A steam leak in the vicinity of junction boxes containing the affected cables caused
11 | the ambient temperature to increase significantly and erratic speed signals resulted.
12 | Spare cables were placed in service and additional ventilation was provided in the
13 | area of the junction boxes. The reheat steam leak was repaired and faulty sections of
14 | seven speed cables were replaced. No further corrective action is anticipated or
15 | required.

15 | FACILITY STATUS | % POWER | OTHER STATUS | METHOD OF DISCOVERY | DISCOVERY DESCRIPTION
E | 0 7 0 | N/A | A | Operator Observation

16 | ACTIVITY CONTENT | AMOUNT OF ACTIVITY | LOCATION OF RELEASE
Z | Z | N/A | N/A

17 | PERSONNEL EXPOSURES | DESCRIPTION
0 0 0 | Z | N/A

18 | PERSONNEL INJURIES | DESCRIPTION
0 0 0 | N/A

19 | LOSS OF OR DAMAGE TO FACILITY | DESCRIPTION
Z | N/A

20 | PUBLICITY | DESCRIPTION
N | N/A

REPORT DATE: October 3, 1984

REPORTABLE OCCURRENCE 83-030

OCCURRENCE DATE: August 6, 1983

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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. 50-267/83-030/03-X-1

Final

IDENTIFICATION OF
OCCURRENCE:

On several occasions during the period from August 6, 1983, through August 8, 1983, with the reactor operating at power, the helium circulator speed cables demonstrated impedance variations. These impedance variations resulted in the Circulator Speed-High (Steam) channel being inoperable and therefore, constituted operation in degraded modes of LCO 4.4.1, Table 4.4-3, note (f). These events were reportable per Fort St. Vrain Technical Specification AC 7.5.2(b)2.

EVENT
DESCRIPTION:

On August 6, 1983, at approximately 0200 hours with the reactor operating near 70% power, the impedance on one circulator speed cable on the 1C helium circulator began to drift. The impedance variation caused the input voltage to drop to zero initiating a Circulator Speed-Low (Steam) Plant Protective System (PPS) single channel trip. However, the loss of voltage to the PPS module associated with the Circulator Speed-High (Steam) inhibited the channel from tripping on high speed since the high speed trip occurs on increasing voltage. The high speed trip channel was, therefore, inoperable. LCO 4.4.1, Table 4.4-3, note (f), states "The inoperable channel must be in the tripped condition, unless the trip of the channel will cause the protective action to occur." The Circulator Speed-High (Steam) circuitry, however, does not contain direct provisions to place that particular circuit in a "tripped" condition without replacing the module with a module which has been wired to initiate the trip signal. Hence, the minimum degrees of redundancy (LCO 4.4.1, Table 4.4-3) was not met.

On August 6, 1983, at approximately 1000 hours with the reactor operating near 70% power, the impedance of a circulator speed cable on the 1C helium circulator began to vary once again. The impedance variation caused the same plant actions (low speed trip, high speed inoperable) as the first occurrence.

On August 6, 1983, at approximately 2230 hours with the reactor operating near 70% power, a cable impedance variation occurred on the 1D helium circulator circuitry. Again, a low speed trip signal was initiated, however, the high speed trip associated with that cable was inoperable.

On August 7, 1983, at approximately 0130 hours with the reactor operating near 70% power, the impedance of a speed cable on the 1C helium circulator circuit began to vary. The same actions occurred as in the previous events.

On August 7, 1983, during the morning hours (around 0900 hours) individual speed cable impedance variations on both the 1C and 1D helium circulators caused the same actions as described above.

Again on August 7, 1983, at approximately 1405 hours, the speed indication for the 1D helium circulator became erratic. Results Department personnel were called out to stand by in case of another speed cable impedance variation. No speed cable impedance variation occurred on this occasion.

On August 8, 1983, at approximately 0530 hours with the reactor operating near 70% power, the impedance of a speed cable on the 1D helium circulator circuit began to vary. The same actions occurred as in the previous events.

CAUSE
DESCRIPTION:

| Component Failure.

The plant was experiencing above normal temperatures in the vicinity of the Prestressed Concrete Reactor Vessel (PCR) bottom head. The high temperatures were a result of a reheat steam leak which was present on a steam generator module in the area. The speed cable impedance variations were attributed to the high temperatures that were experienced in the bottom head region as there are several junction boxes associated with the speed cables in that area. Other equipment located in the same vicinity, however, did not show any abnormal effects.

CORRECTIVE
ACTION:

| During each event, plant instrument technicians were called to investigate/evaluate. In some of the occurrences, affected speed cables were interchanged with available spares, and in others, erratic speed signals ceased, and the cables were returned to service.

| Additional ventilation was installed in the high temperature area to
| assist in maintaining an acceptable environment for the local
| equipment. After placement of the ventilation ducts, no further
| cable problems were observed.

| The reheat steam leak on the steam generator module was repaired via
| Public Service Company Change Notice 1717.

| Faulty sections of seven speed cables were replaced via Public
| Service Company Change Notice 1776 and associated Controlled Work
| Procedures.

| No further corrective action is anticipated or required.

Prepared By: Duane L. Frye
Duane L. Frye
Senior Technical Services Technician

Reviewed By: Jim Eggebroten
Jim Eggebroten
Technical Services Engineering Supervisor

Reviewed By: C. H. Fuller
C. H. Fuller
Station Manager

Approved By: J. W. Gahm
J. W. Gahm
Manager, Nuclear Production