

LICENSEE EVENT REPORT

CONTROL BLOCK: 1 2 3 4 5

[PLEASE PRINT ALL REQUIRED INFORMATION]

LICENSEE NAME 01 C O F S V I	LICENSE NUMBER 00-000000-00	LICENSE TYPE 41120	EVENT TYPE 01
CONT 01 D I	REPORT TYPE T	REPORT SOURCE L	DOCKET NUMBER 050-0267
EVENT DATE 062476	REPORT DATE 070276		

EVENT DESCRIPTION

03 During reactor shutdown and investigation of a plant trouble report, D.C. power was turned off for a portion of "A" logic of the plant protective system to install the normal CT-2A1 module in place of the spare module. When the "A" logic power was turned on, an automatic water turbine start on He Circ 1A was initiated while (cont) (AO-050-261-76/20)

SYSTEM CODE 07 I B	CAUSE CODE E	COMPONENT CODE I N S T R U	PRIME COMPONENT SUPPLIER N	COMPONENT MANUFACTURER G 3 0 5	VIOLATION N
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CAUSE DESCRIPTION

08 The malfunction was the failure of three integrated circuit logic chips in the circulator trip module, CT-2A1, considered as a random failure.

FACILITY STATUS 11 G	% POWER 000	OTHER STATUS	METHOD OF DISCOVERY A	DISCOVERY DESCRIPTION NA
FORM OF ACTIVITY RELEASED 12 E	CONTENT OF RELEASE Z	AMOUNT OF ACTIVITY NA	LOCATION OF RELEASE NA	

PERSONNEL EXPOSURES

NUMBER 13 000	TYPE E	DESCRIPTION NA
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PERSONNEL INJURIES

NUMBER 14 000	DESCRIPTION NA
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OFFSITE CONSEQUENCES

15 NA

LOSS OR DAMAGE TO FACILITY

TYPE 16 E	DESCRIPTION NA
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PUBLICITY

17 NA

8311110125 760702
PDR ADOCK 05000267
S PDR

ADDITIONAL FACTORS

18 EVENT DESCRIPTION-(CONT)- the circulator was on steam turbine drive.

19 The malfunctioning module was replaced with a spare module.

NAME: Stutts, L. J. PHONE: 303-785-2253

UNUSUAL EVENTS AND ABNORMAL OCCURRENCE REPORT DISTRIBUTION

Number of Copies

San Francisco Operations Office

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and Demonstration

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Address --- Mr. E. Morris Howard, Director ----- 1 (copy of Licensee
P Letter Region IV, Event Report)
To Office of Inspection & Enforcement

Nuclear Regulatory Commission

611 Ryan Plaza Drive

Suite 1000

Arlington, Texas 76012

Director of Nuclear Reactor Regulation ----- 1 (copy of Howard's

Attn: Mr. Roger S. Boyd, Director letter, mailogram,

Division of Project Management & Licensee Event

U. S. Nuclear Regulatory Commission Report)

Washington, D.C. 20555

Address --- Office of Information & Program Control ----- 1 (Original of Licensee
P Letter U. S. Nuclear Regulatory Commission Event Report)
To Washington, D.C. 20555

Address --- John M. Waage, Project Manager ----- 10*

FPLC Letter General Atomic Company P. O. Box 81608

To San Diego, California 92183

Public Service Company of Colorado
P. O. Box 361, Platteville, Colorado 80651

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July 2, 1976
Fort St. Vrain
Unit No. 1
P-76155

Mr. E. Morris Howard, Director
Nuclear Regulatory Commission
Region IV
Office of Inspection and Enforcement
Suite 1000
Arlington, Texas 76012

REF: Facility Operating License
No. DPR-34

Docket No. 50-267

Dear Mr. Howard:

Enclosed please find a copy of Abnormal Occurrence Report No. 50-267/76/20, Preliminary, submitted per the requirements of the Technical Specifications.

Also, please find enclosed one copy of the Licensee Event Report for Abnormal Occurrence Report No. 50-267/76/20.

Very truly yours,

Frederic E. Swart
Superintendent, Nuclear Production

FES/alk

cc: Mr. Roger S. Boyd

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COPY SENT REGION IV

REPORT DATE: July 2, 1976

ABNORMAL OCCURRENCE 76/20

Page 1 of 3

OCCURRENCE DATE: June 24, 1976

FORT ST. VRAIN NUCLEAR GENERATING STATION
PUBLIC SERVICE COMPANY OF COLORADO
P. O. BOX 361
PLATTEVILLE, COLORADO 80651

REPORT NO. 50-267/76/20

Preliminary

IDENTIFICATION OF
OCCURRENCE:

On June 24, 1976, during investigation of a plant trouble report, a malfunction in the Plant Protective System caused a condition that could have resulted in an automatic water turbine start while the circulator was on steam turbine drive. This has been identified as an abnormal occurrence per the Fort St. Vrain Technical Specifications, Section 2.1, paragraph f.

CONDITIONS PRIOR
TO OCCURRENCE:

<u>Steady State Power</u>	<u>Routine Shutdown</u>
<u>Hot Shutdown</u>	<u>Routine Load Change</u>
<u>X Cold Shutdown</u>	<u>Other (specify)</u>
<u>Refueling Shutdown</u>	<u></u>
<u>Routine Startup</u>	<u></u>

The major plant parameters at the time of the event were as follows:

Power	RTR	<u>0</u>	MWth
	ELECT	<u>0</u>	MWe
Secondary Coolant*	Pressure	<u>20</u>	psia
	Temperature	<u>250</u>	°F
	Flow	<u>~20,000</u>	g/hr.
Primary Coolant	Pressure	<u>220</u>	psia
	Temperature	<u>230</u>	°F Core Inlet
		<u>230</u>	°F Core Outlet
	Flow	<u>230,000</u>	g/hr.

CONDITIONS PRIOR
TO OCCURRENCE (continued):

Circulators	1A 1,800 RPM on Steam Turbine
	1B Self-turbining
	1C Self-turbining
	1D 1,600 RPM on Steam Turbine

*The secondary coolant parameters are for reheater conditions being discharged from the operating helium circulator steam turbines. The reheater steam flow was estimated. There was no feedwater flow through the steam generators.

DESCRIPTION OF
OCCURRENCE:

During investigation of a plant trouble report, the D.C. power was turned off for a portion of "A" logic of the Plant Protective System to install the normal CT-2A1 module in place of the spare module. When the "A" logic power was turned on, an automatic water turbine start on helium circulator 1A was initiated.

Helium circulators 1A and 1D were operating on steam turbine drives at the time. The 1A helium circulator water turbine inlet and outlet isolation valves opened, but water was not admitted to the Pelton water turbine because the speed control valve was maintained in the closed position because the controller was in manual.

APPARENT CAUSE
OF OCCURRENCE:

<u>Design</u>	<u>Unusual Service Cond. Including Environment</u>
<u>Manufacture</u>	<u>X* Component Failure</u>
<u>Installation/Const.</u>	<u>Other (specify)</u>
<u>Operator</u>	<u></u>
<u>Procedure</u>	<u></u>

*The malfunction has been traced to component failure in logic module CT-2A1.

ANALYSIS OF
OCCURRENCE:

The malfunctioning circulator trip module, CT-2A1, was replaced with an identical spare module and the water turbine isolation valves closed and all indications returned to normal. Investigation of the malfunctioning module revealed that the problem was failure of three integrated circuit logic chips.

ANALYSIS OF
OCCURRENCE (continued):

Had the malfunction occurred when the automatic water turbine start circuitry was set up for auto-start, as it would be during power operation, water would have been put onto the Pelton turbine at the same time the helium circulator was operating on steam.

CORRECTIVE
ACTION:

The failed integrated circuit chips in the CT-2A1 module were replaced and the unit tested. Then the power was turned off and on approximately ten times and the unit again tested with an approved procedure. These failures are of a random nature and no further corrective action is required. The advisability of adding interlocks to prevent the water turbine valves from opening while the helium circulator is operating on steam turbine drive is being studied. The results of this study will be discussed in future supplements to this report.

FAILURE DATA/SIMILAR REPORTED OCCURRENCES:

None

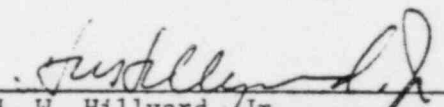
PROGRAMMATIC IMPACT:

None

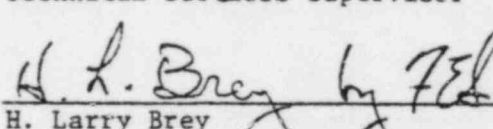
CODE IMPACT:

None

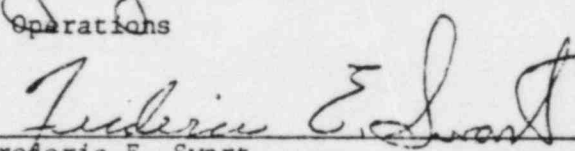
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