

LICENSEE EVENT REPORT

CONTROL BLOCK: 1 2 3 4 5 6

[PLEASE PRINT ALL REQUIRED INFORMATION]

LICENSEE NAME <div style="border: 1px solid black; padding: 2px; display: inline-block;">01</div> <div style="border: 1px solid black; padding: 2px; display: inline-block;">C O F S V I</div>	LICENSE NUMBER <div style="border: 1px solid black; padding: 2px; display: inline-block;">00-000000-00</div>	LICENSE TYPE <div style="border: 1px solid black; padding: 2px; display: inline-block;">41120</div>	EVENT TYPE <div style="border: 1px solid black; padding: 2px; display: inline-block;">01</div>
CATEGORY <div style="border: 1px solid black; padding: 2px; display: inline-block;">01</div> <div style="border: 1px solid black; padding: 2px; display: inline-block;">CON'T</div>	REPORT TYPE <div style="border: 1px solid black; padding: 2px; display: inline-block;">DI</div>	REPORT SOURCE <div style="border: 1px solid black; padding: 2px; display: inline-block;">T</div>	DOCKET NUMBER <div style="border: 1px solid black; padding: 2px; display: inline-block;">050-0267</div>
EVENT DATE <div style="border: 1px solid black; padding: 2px; display: inline-block;">011676</div>	REPORT DATE <div style="border: 1px solid black; padding: 2px; display: inline-block;">040176</div>		

EVENT DESCRIPTION

02

 While operating 1A - 1C circulator water turbine drives, the

03

 circulator speeds decreased. There was no trip caused or

04

 required. The situation was cleared by operator action. Tests

05

 will be performed.

06

(AO 76/02A Supplement)

SYSTEM CODE <div style="border: 1px solid black; padding: 2px; display: inline-block;">07</div> <div style="border: 1px solid black; padding: 2px; display: inline-block;">C B</div>	CAUSE CODE <div style="border: 1px solid black; padding: 2px; display: inline-block;">8</div>	COMPONENT CODE <div style="border: 1px solid black; padding: 2px; display: inline-block;">N A</div>	PRIME COMPONENT SUPPLIER <div style="border: 1px solid black; padding: 2px; display: inline-block;"></div>	COMPONENT MANUFACTURER <div style="border: 1px solid black; padding: 2px; display: inline-block;"></div>	VIOLATION <div style="border: 1px solid black; padding: 2px; display: inline-block;">N</div>
---	--	--	---	---	---

CAUSE DESCRIPTION

08

 The helium circulator speed reduction was caused by

09

 water accumulation in the steam turbine area.

10

FACILITY STATUS <div style="border: 1px solid black; padding: 2px; display: inline-block;">11</div> <div style="border: 1px solid black; padding: 2px; display: inline-block;">G</div>	% POWER <div style="border: 1px solid black; padding: 2px; display: inline-block;">000</div>	OTHER STATUS <div style="border: 1px solid black; padding: 2px; display: inline-block;"></div>	METHOD OF DISCOVERY <div style="border: 1px solid black; padding: 2px; display: inline-block;">A</div>	DISCOVERY DESCRIPTION <div style="border: 1px solid black; padding: 2px; display: inline-block;">N/A</div>
FORM OF ACTIVITY RELEASED <div style="border: 1px solid black; padding: 2px; display: inline-block;">12</div> <div style="border: 1px solid black; padding: 2px; display: inline-block;">Z</div>	CONTENT OF RELEASE <div style="border: 1px solid black; padding: 2px; display: inline-block;">Z</div>	AMOUNT OF ACTIVITY <div style="border: 1px solid black; padding: 2px; display: inline-block;">N/A</div>	LOCATION OF RELEASE <div style="border: 1px solid black; padding: 2px; display: inline-block;">N/A</div>	

PERSONNEL EXPOSURES

NUMBER <div style="border: 1px solid black; padding: 2px; display: inline-block;">13</div> <div style="border: 1px solid black; padding: 2px; display: inline-block;">000</div>	TYPE <div style="border: 1px solid black; padding: 2px; display: inline-block;">Z</div>	DESCRIPTION <div style="border: 1px solid black; padding: 2px; display: inline-block;">N/A</div>
--	--	---

PERSONNEL INJURIES

NUMBER <div style="border: 1px solid black; padding: 2px; display: inline-block;">14</div> <div style="border: 1px solid black; padding: 2px; display: inline-block;">000</div>	DESCRIPTION <div style="border: 1px solid black; padding: 2px; display: inline-block;">W/A</div>
--	---

OFFSITE CONSEQUENCES

15

N/A

LOSS OR DAMAGE TO FACILITY

TYPE <div style="border: 1px solid black; padding: 2px; display: inline-block;">16</div> <div style="border: 1px solid black; padding: 2px; display: inline-block;">Z</div>	DESCRIPTION <div style="border: 1px solid black; padding: 2px; display: inline-block;">N/A</div>
--	---

PUBLICITY

17

N/A

ADDITIONAL FACTORS

18

N/A

19

NAME: William J. Frank PHONE: 571-7511, Ext. 1455

REPORT DATE: April 1, 1976

ABNORMAL OCCURRENCE 76/02A

OCCURRENCE DATE: January 16, 1976

SUPPLEMENT

Page 1 of 4

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

REPORT NO. 50-267/76/02A

Supplement

IDENTIFICATION OF
OCCURRENCE:

The reduction of circulator speed due to water accumulation in the steam turbine scroll case while operating the circulator with the water turbine has occurred on other circulators. This report is attached as a supplement to Abnormal Occurrence 50-267/76/02, dated January 26, 1976.

CONDITIONS PRIOR
TO OCCURRENCE:

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

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>N/A (See Note 1)</u>	psig
	Temperature	<u>N/A (See Note 1)</u>	°F
	Flow	<u>N/A (See Note 1)</u>	#/hr.
Primary Coolant	Pressure	<u>(See Note 2)</u>	psig
	Temperature	<u>(See Note 3)</u>	°F Core Inlet
		<u>(See Note 4)</u>	°F Core Outlet
	Flow	<u>(See Note 5)</u>	#/hr.

- NOTE 1: Incidents are independent of secondary coolant conditions.
- NOTE 2: Incidents have occurred between 30 psig and 275 psig.
- NOTE 3: Core temperature inlet has varied from 100°F to 166°F.
- NOTE 4: Core temperature outlet has varied from 100°F to 166°F.
- NOTE 5: Circulator speed has been from 1,100 rpm to 2,500 rpm and has occurred on one circulator when two are operating at 2,500 rpm.

DESCRIPTION OF
OCCURRENCE:

Primary coolant was being circulated by various combinations of circulators on Pelton drive including single circulators operating above self-turbining. In these instances the reactor operator noted a reduction in helium circulator speed with no corresponding decrease in water flow to the Pelton drive.

There was no trip or alarm required or caused by this condition.

In all cases the circulators were returned to normal by opening the trap bypass valves on the inlet and outlet cold reheat piping.

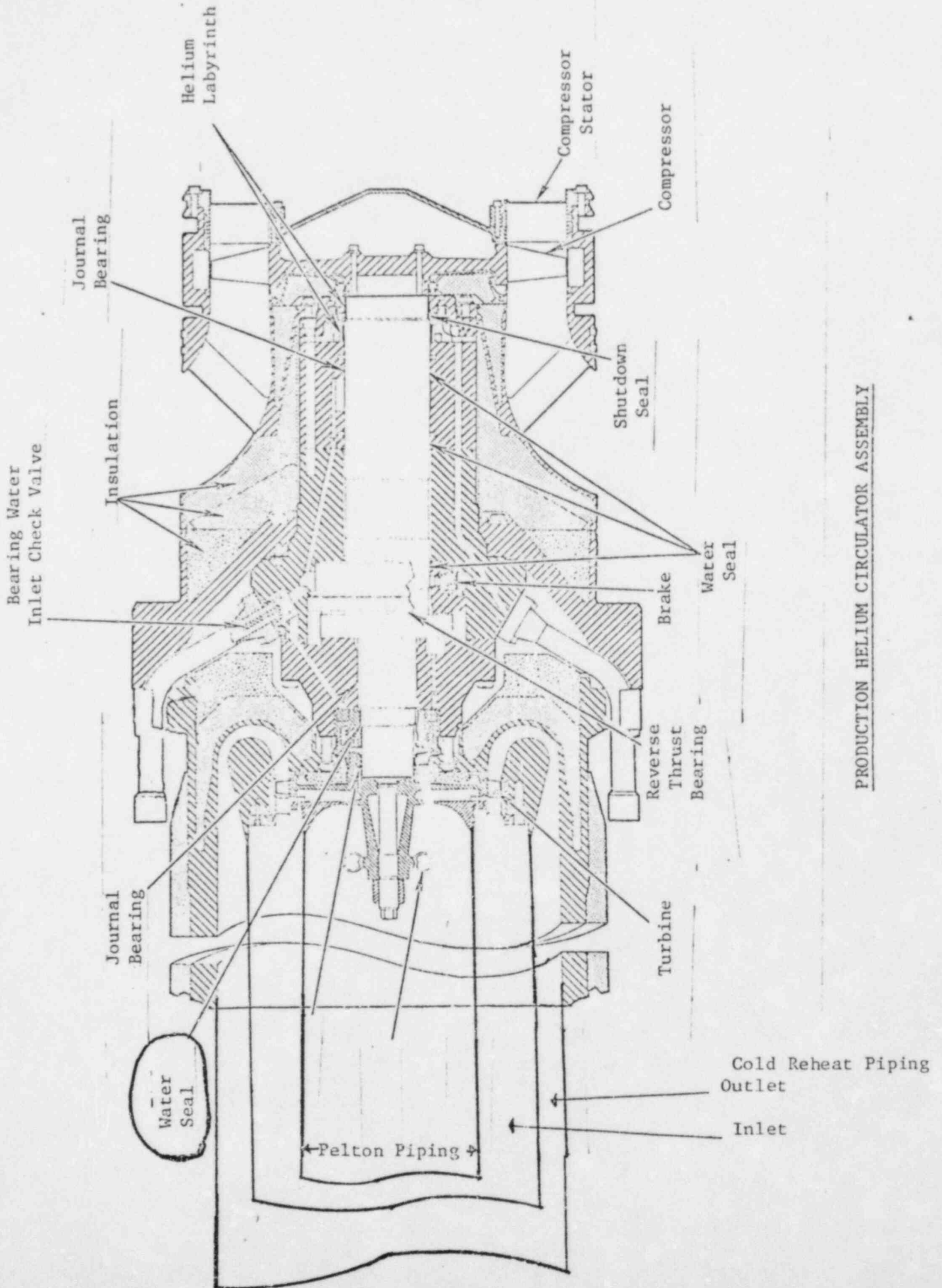
APPARENT CAUSE
OF OCCURRENCE:

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

ANALYSIS OF
OCCURRENCE:

Incidents of the circulator speed reduction, due to water accumulation in the steam turbine scroll case, have occurred during normal operating conditions with either feedwater or condensate driving the Pelton wheels.

Reference attached helium circulator drawing. Bearing water flows down the circulator shaft and forms the lower water seal. This water then flows past the steam labyrinth and into the steam turbine scroll case, and the cold reheat piping. The water in the cold reheat piping does not drain out of the piping traps. These traps are designed for steam operation and do not allow water flow equal to the water flow to the piping. Eventually the piping fills with water and submerges the steam turbine. The submerged turbine increases the circulator drag and reduces speed. When the trap bypass valves are opened the water flows out of the piping and circulator speed returns to normal.



PRODUCTION HELIUM CIRCULATOR ASSEMBLY

CORRECTIVE
ACTION:

Abnormal Occurrence 50-257/76/02 stated a representative number of steam traps were checked and reported to be operating normally.

The problem of steam turbine flooding is being investigated. Test, T-22, has been approved to determine whether the steam traps are performing the desired function while operating the circulators on Pelton drive. Per agreement with Region IV, Inspection and Enforcement, no further incidents of steam turbine flooding will be reported until the problem has been resolved.

FAILURE DATA/SIMILAR REPORTED OCCURRENCES:

None

PROGRAMMATIC IMPACT:

None

CODE IMPACT:

None

Submitted by:

H. W. Hilliard, Jr.
H. W. Hilliard, Jr.
Technical Services Supervisor

Reviewed by:

H. Larry Brey
H. Larry Brey
Superintendent, Operations

Approved by:

Frederic E. Swart
Frederic E. Swart
Superintendent, Nuclear Production

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



April 1, 1976
Fort St. Vrain
Unit No. 1
P-76087

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. 50-267/76/02A, Supplement, submitted per the requirements of the Technical Specifications.

Also, please find enclosed one copy of the Licensee Event Report for Abnormal Occurrence Report No. 50-267/76/02A.

Very truly yours,

A handwritten signature in cursive script that reads "Frederic E. Swart".

Frederic E. Swart
Superintendent, Nuclear Production
Fort St. Vrain Nuclear
Generating Station

FES/alk

cc: Mr. Roger S. Boyd

3410