

LICENSEE EVENT REPORT

CONTROL BLOCK:

(PLEASE PRINT ALL NAMES, DATES, & PLACES)

LICENSEE NAME				LICENSE NUMBER								LICENSE TYPE				EVENT TYPE					
01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22
01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22

CONT		CALCON	REPORT TYPE	REPORT NUMBER	DOCKET NUMBER	EVENT DATE	REPORT DATE
01	CONT	22	1	1	050-0367	1122375	01122476
7	8	57	58	59	60	61	68
						69	74
							75
							81

EVENT DESCRIPTION	DATE	TIME	LOCATION	STATUS
...

Discovery of the possibility of restarting one primary circuit
circulator could be jeopardized by a failure of the common
section of the circulator auxiliary system. Unusual Event
75/29- (P231011/24)

CAUSE DESCRIPTION

7 8 9 0 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60

05 Single failure might depressurize bearing water system, getting oil
06 seal. High pressure might be sufficient to prevent release of
07 oil.
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FORM OF ACTIVITY RELEASED ☒ 7 ☐ 8

CONTENT OF RELEASE ☒ 10 ☐ 11

AMOUNT OF ACTIVITY N/A

LOCATION OF RELEASE N/A

PERSONAL EXPOSURES

NUMBER				TYPE	DESCRIPTION
7	8	9	11	12	13
					N/A

PERSONNEL INJURIES

INDEXING		DESCRIPTION	
7	09	11	12

OFFSHORE CONSEQUENCES

10 1 7 8 3

LOAD OR DAMAGE TO FACILITY

7 8 9 10 8311080611 760708

PUBLICITY

7 8 9

ADDITIONAL FACTORS

7 8 9 60

NAME: W. W. HILLYARD, JR.

PHONE: 303-767-1133

P.O. Box 361, Platteville, Colorado 60651

January 22, 1976

Fort St.

Unit

P-



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 Unusual Event Report No. 50-267/75/22, Preliminary, submitted per the requirements of the Technical Specifications. Also please find enclosed one copy of the Licensee Event Report for Unusual Event Report No. 50-267/75/22.

Very truly yours,

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

FES/dme

cc: Mr. Roger S. Boyd

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REPORT DATE: January 22, 1976

UNUSUAL EVENT 75/22

Page 1 of 3

OCCURRENCE DATE: December 23, 1975

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

REPORT NO. 50-267/75/22

Preliminary

IDENTIFICATION OF
OCCURRENCE:

It has been discovered that the possibility of restarting one primary coolant helium circulator following a failure of a common portion of the circulator gas buffer system might be jeopardized by the inability to retract the circulator static seal. This has been identified as an unusual event per Fort St. Vrain Technical Specifications, Section 7.6, Non-routine Reports, Part C) 2).

CONDITIONS PRIOR
TO OCCURRENCE:

<u>Steady State Power</u>	<u>Routine Shutdown</u>
<u>Hot Whutdown</u>	<u>Routine Load Change</u>
<u>Cold Shutdown</u>	<u>X</u> <u>Other (specify)</u>
<u>Refueling Shutdown</u>	<u>Not applicable.</u>
<u>Routine Startup</u>	<u></u>

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

Power	RTR <u>N/A</u>	MWth
	ELECT <u>N/A</u>	MWe
Secondary Coolant	Pressure <u>N/A</u>	psig
	Temperature <u>N/A</u>	°F
	Flow <u>N/A</u>	#/hr.
Primary Coolant	Pressure <u>N/A</u>	psig
	Temperature <u>N/A</u>	°F Core Inlet
	<u>N/A</u>	°F Core Outlet
	Flow <u>N/A</u>	#/hr.

DESCRIPTION OF
OCCURRENCE:

In reviewing the design adequacy of the primary coolant helium circulator's auxiliary systems, it has been discovered that an assumed failure (such as a line rupture) of a common portion of the buffer helium system, might seriously jeopardize the ability of the plant operator to restore forced circulation with at least one of the helium circulators within the 30 minutes analyzed and documented in the FSAR.

APPARENT CAUSE
OF OCCURRENCE:

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

A previously unrecognized problem with the auxiliary system under an extremely degraded system operating condition.

ANALYSIS OF
OCCURRENCE:

As a result of the assumed failure of a common portion of the buffer helium system, it is postulated that both auxiliary loop surge tanks loose their pressurizing cover gas (helium), which lowers the bearing water system static pressure to atmospheric. The depressurization is expected to be fast enough to cause all four circulators to trip through automatic protective system action, and for their auxiliaries to be isolated. This includes automatically setting all four circulator static shutdown seals. At this point, a condition of temporary loss of forced circulation exists, with a critical need to immediately reestablish operation with at least one circulator.

However, the depressurized surge tanks create an addition problem. With primary coolant pressure greater than 120 psig, the back pressure on the engaged static seal is sufficient to prevent its release and the subsequent return to operation of the helium circulator. The conclusion is that some method of overcoming the primary coolant back pressure on the engaged static seal is needed.

CORRECTIVE
ACTION:

A bank of helium bottles with a minimum pressure of 1500 psig and the required controls will be installed in each auxiliary loop. The gas inventory will provide a sufficient capacity to pressurize a circulator bearing cartridge in each loop on an emergency, restart basis, and open the static shutdown seal. The actuation of the emergency system will be accomplished manually in the control room.

CORRECTIVE

ACTION (continued):

Following completion of the installation, a test will be conducted under simulated accident conditions, which demonstrates the ability of the system to provide the emergency restart.

FAILURE DATA/SIMILAR REPORTED OCCURRENCES:

None

PROGRAMMATIC IMPACT:

None

CODE IMPACT:

None

Submitted by:

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

Reviewed by:

H. Larry Bray
H. Larry Bray
Superintendent, Operations

Approved by:

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