



Public Service Company of Colorado

P. O. Box 361, Platteville, Colorado 80651

September 26, 1975



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:

TE FILE COPY

In our letter dated September 25, 1975, regarding Abnormal Occurrence Report No. 50-267/75/22, we erroneously indicated a preliminary report was being transmitted. Please note that a final was transmitted as indicated on the report itself.

Very truly yours,

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

FES/alk

cc: Mr. Roger S. Boyd

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P. O. Box 361, Platteville, Colorado 80651

September 25, 1975

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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

USE FILE COPY

Docket No. 50-267

Dear Mr. Howard:

Enclosed please find a copy of Abnormal Occurrence Report No. 50-267/75/22,
Preliminary, submitted per the requirements of the Technical Specifications.

Very truly yours,

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

FES/alk

cc: Mr. Roger S. Boyd

COPY SENT REGION IV

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REPORT DATE: September 25, 1975

ABNORMAL OCCURRENCE 75/22

OCCURRENCE DATE: September 12, 1975

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

REPORT NO. 50-267/75/22

Final

IDENTIFICATION OF
OCCURRENCE: _____

On September 12, 1975, at 1625 hours, during a gas waste routine release, trouble with the gas waste vacuum tank was observed by the reactor operator.

On September 15, 1975, subsequent examination of rupture disk M-63803 protecting the gas waste vacuum tank from excessive pressure, revealed a ruptured disk. This is identified as an abnormal occurrence per Technical Specification 2.1 (c).

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

Power	RTR _____	0	MWTH
	ELECT _____	0	MWe
Secondary Coolant	Pressure _____	N/A	psig
	Temperature _____	N/A	°F
	Flow _____	N/A	#/hr.
Primary Coolant	Pressure _____	+0.5	psig
	Temperature _____	83	°F Core Inlet
		83	°F Core Outlet
	Flow _____	1 circulator at 4,000 RPM	

DESCRIPTION OF
OCCURRENCE:

On Friday evening, September 12, 1975, the following sequence of events took place:

1. A decision was made to make a controlled release from a gas waste surge tank.
2. The tank was sampled and no radioactivity above background was found.
3. A surveillance was performed as required by procedure to insure the availability of the radiation monitors concerned with a gas waste release and the operability of their associated controls.
4. After completion of all of the above permission was given to start the release of gas waste.
5. Three (3) minutes after the release was started, an alarm was received indicating a higher than normal pressure in the gas waste vacuum tank. The release was immediately terminated.
6. The pressure in the gas waste vacuum tank continued to rise and both gas waste compressors were verified to be in operation.
7. A search for the source of input to the gas waste vacuum tank was started; the regeneration system was not being purged, the fuel handling purge vacuum pumps were discharging to the gas waste blowers, the gas waste release lineup was correct.
8. Gas was found to be flowing through the fuel handling machine relief valve (PCV-1347). The downstream block valve for PCV-1347 was closed and the gas waste vacuum tank returned to normal.
9. The in-service rupture disc of the parallel pair, M-63803 was suspected of being ruptured and M-63802 was placed in service and M-63803 isolated.
10. The gas waste release was restarted and the block valve for PCV-1347 was opened. The gas waste vacuum tank remained normal.
11. On Monday morning, September 15, 1975, M-63803 was inspected and found to be ruptured indicating an uncontrolled release had taken place.

APPARENT CAUSE
OF OCCURRENCE:

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

At the time of the occurrence the fuel handling machine was mounted on a reactor isolation valve and connected to a fuel storage well. The fuel handling machine isolation valve and the reactor isolation valve were both open so that the fuel handling machine was at the same internal pressure as the fuel storage wells. The fuel handling machine is protected from excessive internal pressure by PIC-1347 and PCV-1347 with PIC-1347 opening PCV-1347 whenever the pressure in the fuel handling machine exceeds 0 psig.

Pressure in the fuel storage wells and, at this time, in the fuel handling machine is controlled by PIC-1407 and the combined action of PCV-1407-1 and PCV-1407-2. PCV-1407-1 is the inlet to the fuel storage wells from a low pressure source of helium while PCV-1407-2 is the outlet of the fuel storage wells to the gas waste vacuum tank. PIC-1407 controls the position of these two valves to maintain the pressure in the fuel storage wells between 5 and 6 inches of water vacuum.

When the excess pressure developed in the gas waste tank, the status of the controls described above was checked and the following conditions found:

PCV-1407-1	25% open
PCV-1407-2	25% open
PCV-1347	25% open
PIC-1347	2 psig pressure in the fuel handling machine

From this status it may be seen that the source of the excess gas to the gas waste vacuum tank was through PCV-1407-1 which supplied excess helium to the fuel storage wells which resulted in over-pressurizing the gas waste vacuum tank.

ANALYSIS
OF OCCURRENCE:

The assumed cause of the rupture of M-63803 was a malfunction of the helium inlet valve to the fuel storage wells PCV-1407-1. This allowed helium to flow to the gas waste vacuum tank at a rate in excess of the pump down

ANALYSIS OF
OCCURRENCE (continued):

capacity of both gas waste compressors. The tank pressure increased until the rupture disc ruptured and the safety relief valve lifted relieving the excess input to the tank. There are no radioactive materials either in the primary coolant or in the fuel storage wells that could have been released by this occurrence. No increase in the activity of the exhaust stack effluent was detected by the stack monitors. No effect to the health or safety of the public was caused by this occurrence.

CORRECTIVE
ACTION:

We have been unable to determine the cause of the malfunction of PCV-1407-1. We have been unable to reproduce the failure in numerous check of the performance of PIC-1407, PCV-1407-1, and PCV-1407-2. No further action is planned.

FAILURE DATA/SIMILAR REPORTED OCCURRENCES:

Abnormal Occurrences 74/21, 74/22, 75/5, and 75/6 report previous rupture of gas waste vacuum tank rupture discs caused by various malfunctions, not the same as reported in this report.

PROGRAMMATIC IMPACT:

None

CODE IMPACT:

None

Submitted By: Harvey W. Willyard, Jr.

Harvey W. Willyard, 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