

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Fort St. Vrain, Unit No. 1	DOCKET NUMBER (2) 0 5 0 0 0 2 1 6 1 7	PAGE (3) 1 OF 0 1 4
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TITLE (4)
Liquid Waste Release Exceeded MPC For Unidentified Beta

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)		
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME		DOCKET NUMBER (8)
0 7	2 6	8 4	8 4	0 0 9	0 0 0	0 8	2 4	8 4	N/A		0 5 0 0 0 0 0 0
THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)											

OPERATING MODE (9) N	POWER LEVEL (10) 0 1 0 0	20.402(b)	20.408(a)	60.73(a)(2)(iv)	73.71(b)
		20.408(a)(1)(i)	60.73(a)(1)	60.73(a)(2)(iv)	73.71(a)
		20.408(a)(1)(ii)	60.73(a)(2)	60.73(a)(2)(v)	OTHER (Specify in Abstract below and in Text, NRC Form 388A)
		20.408(a)(1)(iii)	60.73(a)(2)(i)	60.73(a)(2)(v)(A)	
		20.408(a)(1)(iv)	60.73(a)(2)(ii)	60.73(a)(2)(v)(B)	
		20.408(a)(1)(v)	60.73(a)(2)(iii)	60.73(a)(2)(v)(C)	

LICENSEE CONTACT FOR THIS LER (12) NAME Frank Novachek, Technical Services Engineering Supervisor		TELEPHONE NUMBER AREA CODE 3 1 0 1 3 7 1 8 1 5 - 1 2 1 2 1 4
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COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC

SUPPLEMENTAL REPORT EXPECTED (14) <input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE) <input checked="" type="checkbox"/> NO	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
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ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

On July 20, 1984, initial analysis of the daily sample from the Reactor Building Sump indicated a higher level of tritium than the sample taken on the previous day. The sample tritium activity was below maximum permissible concentration (MPC). However, releases from the Reactor Building Sump were terminated until the tritium levels were reduced. The sample taken on July 21, 1984 indicated all radionuclides were below MPC, and releases resumed.

On July 26, 1984, a subsequent analyses performed on the July 20 Reactor Building Sump sample indicated concentration of unknown beta emitters was above MPC. For a period of approximately 37 hours on July 19 and July 20, a release could have occurred that was in excess of MPC for unidentified beta emitters. Releases from the Reactor Building Sump were terminated until the source of the high activity (unidentified beta emitters) was determined. Maintenance activities concerning the helium purification system regeneration compressor were discovered to be the source of the unidentified beta emitters in the Reactor Building Sump. The sump pumps were removed from service and plugs were installed in the floor drains in the area of the compressor.

The floor drains will be routed to the Liquid Waste System rather than the Reactor Building Sump.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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TEXT (If more space is required, use additional NRC Form 388A's) (17)

EVENT DESCRIPTION:

On Thursday, July 19, 1984, at approximately 0200 hours, with the reactor shutdown and depressurized for internal maintenance, the daily sample was taken from the Reactor Building Sump (T-7202) and analyzed, as usual, on the day shift. The analysis was normal with expected concentrations of radionuclides in the sump. On Friday, July 20, 1984, at 0244 hours, the daily sample was taken, and the day shift initial analysis indicated a higher level (but below MPC) of tritium. The Radiochemistry Supervisor informed the Shift Supervisor that the releases from the Reactor Building Sump should be terminated until the tritium levels were reduced. The Reactor Building Sump Pumps (P-7201 and P-7201S) switches were placed in the "pull to lock" position at 1600 hours on July 20, 1984. On Saturday, July 21, 1984, a direct Reactor Building Sump sample was taken at 0830 hours and analyses indicated that tritium, gamma, and gross beta activities were below MPC; the Shift Supervisor was informed and the Reactor Building Sump pumps were placed back in service at 1055 hours.

On Thursday, July 26, 1984, the sample from July 20, 1984 was analyzed for gross beta activity and 35-Sulfur and it was determined that the concentration of beta emitters was 2.24 times the MPC (for unknown radionuclides) at the time the sample was taken on July 20, 1984, at 0244 hours. It was concluded that sometime between approximately 0200 hours on July 19, 1984, and 0244 hours of July 20, 1984, a liquid release into the Reactor Building Sump occurred from an unknown origin that increased the radionuclide concentration in the sump. The Reactor Building Sump Pumps were not placed in the "pull-to-lock" position until 1600 hours on July 20, 1984. For a period of approximately 37 hours, a release could have occurred that was in excess of the MPC for unidentified beta emitters. A decision was made that this occurrence constituted an Unusual Event, and State and Nuclear Regulatory Commission authorities were notified on July 26, 1984.

ANALYSIS OF EVENT:

Radiochemical analysis of the backup sample taken July 20 from the Reactor Building Sump indicated a beta concentration of 4.79E-05 µci/ml. Based on the release rate of eight gallons per minute and the average cooling tower blowdown of 1632 gallons per minute, the calculated beta concentration released would be 6.72E-08 µci/ml. The MPC for unidentified beta is 3.0E-8 µci/ml, resulting in a concentration of unidentified beta 2.24 times MPC.

A sample of the July 20, 1984, sump sample was sent to an outside agency for a detailed analysis in order to determine the identity of the unidentified beta emitters. The results of the sample analyses have been received and have verified that no MPC values were exceeded during this release.

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CAUSE DESCRIPTION:

Other

On July 19, 1984, at 1405 hours the helium purification system regeneration compressor was removed from service to repair a seal leak. Contaminated water was released, as expected, when the compressor was disassembled. Any water released goes into the floor drains of the regeneration pit, which was believed to drain to the Liquid Waste Sump (T-6201). During an investigation into the source of the unidentified beta emitters, dye was released into the drain and found in the Reactor Building Sump instead of the Liquid Waste Sump.

CORRECTIVE ACTION:

On July 26, 1984, after it was determined a release could have occurred that was in excess of the MPC for unidentified beta emitters, the Reactor Building Sump Pump switches were placed in the "pull-to-lock" position while an investigation into the origin of the unidentified beta emitters took place.

After the source of the unidentified beta emitters was discovered to be the floor drains in the area of the regeneration compressor, the drains were plugged with inflatable plugs.

Public Service Company and the Nuclear Regulatory Commission conducted evaluations of continuous process beta monitors. Both Public Service Company and the Nuclear Regulatory Commission concluded that there were no instruments that would prevent a release of this type from happening again.

In an effort to inhibit a recurrence of this event, the floor drains from the regeneration pit will be rerouted from the Reactor Building Sump to the Liquid Waste Sump.

No further corrective action is anticipated or required.

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TEXT (If more space is required, use additional NRC Form 388A's) (17)

Laurie S. Banagas
Laurie S. Banagas
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Frank J. Novachek
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Public Service Company of Colorado

16805 WCR 19 1/2, Platteville, Colorado 80651

August 27, 1984
Fort St. Vrain
Unit #1
P-84313

50-267

Mr. E. H. Johnson, Chief
Reactor Project Branch 1
Region IV
Nuclear Regulatory Commission
611 Ryan Plaza Drive, Suite 1000
Arlington, Texas 76011

REFERENCE: Facility Operating License
No. DPR-34

Docket No. 50-267

Dear Mr. Johnson:

Enclosed please find a copy of Licensee Event Report
No. 50-267/84-009, Final, submitted per the requirements of
10 CFR 50.73(a)(2)(i) and 10 CFR 50.73(a)(2)(v).

Very truly yours,

J. W. Gahm
Manager, Nuclear Production

JWG/djm

Enclosure

cc: Director, MIPC

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