

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Fort St. Vrain, Unit No. 1	DOCKET NUMBER (2) 0 5 0 0 0 0 2 6 7	PAGE (3) 1 OF 015
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TITLE (4)
OPERATION IN VIOLATION OF LCO 4.2.7

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 NAMES		
03	23	89	89	005	00	04	24	89	N/A		
									DOCKET NUMBER(S) 0 5 0 0 0 0		

OPERATING MODE (9) N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)									
	20.402(b)	20.406(e)	50.73(a)(2)(iv)	73.71(b)						
POWER LEVEL (10) 01010	20.406(a)(1)(ii)	50.38(c)(1)	50.73(a)(2)(v)	73.71(c)						
	20.406(a)(1)(iii)	50.38(c)(2)	50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)						
20.406(a)(1)(iii)	X 50.73(a)(2)(i)	50.73(a)(2)(viii)(A)								
20.406(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)								
20.406(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(ix)								

LICENSEE CONTACT FOR THIS LER (12)

NAME S. W. Chesnutt, Supervisor, Nuclear Licensing-Compliance	TELEPHONE NUMBER	
	AREA CODE 3103	620 - 1027

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE) NO

EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

At 2218 hours on March 23, 1989, during preparations to restart the plant following an extended outage, the primary coolant system was pressurized to greater than 100 psia with the region 27 Control Rod Drive (CRD) penetration interspace isolated (i.e., not pressurized). Per the requirements of LCO 4.2.7, the PCRV (i.e., primary coolant system) shall not be pressurized to more than 100 psia unless the interspaces between the primary and secondary penetration closures are maintained at a pressure greater than primary coolant pressure. Therefore, this event constitutes operation prohibited by the Technical Specifications and is being reported herein pursuant to the requirements of 10 CFR 50.73(a)(2)(i)(B).

At 0102 hours on March 24, 1989, with the primary coolant system pressurized to approximately 107 psia, the region 27 penetration interspace isolation valve was opened thereby pressurizing the interspace to greater than primary coolant pressure as required.

This event is attributed to inadequate procedural controls on primary coolant system pressurization. In addition, PSC has initiated a Human Performance Evaluation System investigation to address other contributing factors for this event.

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TEXT (If more space is required, use additional NRC Form 366A's) (17)

EVENT DESCRIPTION:

On March 23, 1989, with the reactor in a shutdown condition, preparations were underway to pressurize the primary coolant system to greater than 100 psia as part of the overall plant restart activities. Condensate flow was providing both motive power for all four helium circulators [AB] and secondary coolant flow to both loop economizer-evaporator-superheater sections of the steam generators [AB]. Average Reactor Core Outlet Temperature was approximately 111 degrees F.

In a management meeting on the morning of March 23, 1989, it was identified that prior to pressurizing the primary coolant system to greater than 100 psia, an outstanding clearance on the region 27 CRD penetration interspace needed to be surrendered (i.e., picked up and the interspace returned to normal status). This particular clearance authorized closure of V-11127-1 which is one of two redundant isolation valves in the region 27 interspace pressurizing line (the other isolation valve is V-11127). Clearances are the method by which plant equipment is removed from service, usually to allow maintenance.

The Shift Supervisor was contacted and informed that an outstanding clearance on the region 27 interspace needed to be "picked up" or surrendered prior to primary coolant system pressurization. Remembering a clearance had just been surrendered on the region 27 interspace, the Shift Supervisor reviewed the recently surrendered clearances as opposed to the outstanding clearances. During this review the Shift Supervisor confirmed that a clearance on the region 27 interspace had been surrendered the day before (March 22). It was assumed that this was the clearance in question and that the issue was resolved. However, it was later discovered that this clearance surrendered on March 22 was only one of two clearances that were hung on the region 27 interspace and that another separate clearance on V-11127-1 was still outstanding.

At approximately 2100 hours on March 23, reactor operators began final preparations to pressurize the primary coolant system to greater than 100 psia in accordance with Overall Plant Operating Procedure I (OPOP I). This procedure outlines the requisite conditions for pressurizing the primary coolant system to greater than 100 psia. These conditions are presented as procedural steps that must be checked off by a Reactor Operator. At 2103 hours on March 23, 1989, the Senior Reactor Operator successfully completed the OPOP I procedure for PCRV pressurization above 100 psia. At 2218 hours that same day, the primary coolant system was pressurized above 100 psia.

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TEXT (If more space is required, use additional NRC Form 386A's) (17)

At 0102 hours on March 24, 1989, after relieving the preceding operating crew at the 2400 hour shift turnover, the graveyard crew Senior Reactor Operator discovered that a clearance was still outstanding on region 27 CRD interspace isolation valve V-11127-1. This was identified during a review of the outstanding clearance log which is a standard part of the shift turnover process. The graveyard shift Senior Reactor Operator immediately notified the Shift Supervisor of this condition. The Shift Supervisor personally went to investigate and found that a clearance was in fact still hanging (outstanding) on isolation valve V-11127-1. The Shift Supervisor removed the clearance and opened isolation valve V-11127-1, thereby pressurizing the interspace above primary coolant system pressure as required.

CAUSE:

ROOT CAUSE: Inadequate Procedure Controls

Overall Plant Operating Procedure I is intended to outline all the conditions that must be checked prior to pressurizing the primary coolant system to greater than 100 psia. However, this procedure does not specify that the penetration interspaces must be pressurized to greater than primary coolant pressure nor does it identify ways to verify this is done. Had a specific step as such existed, it is likely that the isolated interspace valve would have been identified either through a review of outstanding clearances or a check of the valve lineup, and corrected prior to primary system pressurization.

CONTRIBUTING CAUSE: Inadequate Follow-up

It was identified on the morning of March 23, 1989, that a clearance was outstanding on the region 27 CRD interspace. Appropriate personnel were notified of this condition and instructed to resolve the issue prior to pressurization above 100 psia. When contacted and requested to surrender the clearance on "region 27" the Shift Supervisor reviewed the recently surrendered clearances. During this review, the Shift Supervisor confirmed that a clearance on the region 27 interspace had been surrendered the previous day. It was assumed by both parties that this was the clearance in question and that the issue was resolved. No further follow-up actions were pursued. Had an additional review of the outstanding clearances been performed, it is likely that the outstanding clearance on V-11127-1 would have been identified and surrendered.

SAFETY ANALYSIS:

Since the primary coolant system was pressurized to greater than 100 psia while the CRD 27 interspace was isolated, this event constitutes operation prohibited by the Technical Specifications and is being reported herein per 10 CFR 50.73(a)(2)(i)(B).

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TEXT (If more space is required, use additional NRC Form 366A's) (17)

PCRv penetration interspaces are normally maintained at a pressure greater than the primary coolant system pressure by supplying them with purified helium from the helium purification system. This ensures that any leakage of either the primary or secondary closure seals will be purified helium. Failure to maintain the interspace pressurized to greater than primary system pressure does not degrade the primary or secondary closure seals themselves but only creates a differential pressure that makes it possible for primary coolant to leak into the interspace. Once in the interspace, it would then require a secondary closure seal leak before primary coolant would enter the reactor building. At this point however, any primary coolant leakage would be processed through the reactor building exhaust stack filter system before being discharged to the outside atmosphere. The reactor building exhaust filter system includes charcoal banks to reduce the potential release of radioiodine to the atmosphere. It should also be noted that the primary coolant activity concentrations at the time of this event were extremely low due to the extended plant shutdown. Therefore, any leakage that could have occurred would not have posed any significant radiological consequences.

Pressurization of the primary coolant system to 107 psig while the region 27 interspace was isolated resulted in a maximum differential pressure across the primary closure of approximately 95 psig. The primary and secondary closures are designed for substantially higher pressure differentials (1775 psia for primary, 1690 psia for secondary) than what did or could have developed as a result of this event. Therefore, this event did not result in operation of either the primary or secondary closures in excess of their design pressure, nor did it pose any radiological threat to the public.

CORRECTIVE ACTION:

The outstanding clearance on the region 27 CRD interspace was removed and the isolation valve opened. These actions were completed at 0102 hours on March 24, 1989, and brought the plant into compliance with the requirements of LCO 4.2.7. In addition, operations personnel were reminded of the importance of performing thorough clearance reviews prior to making changes in plant operating modes.

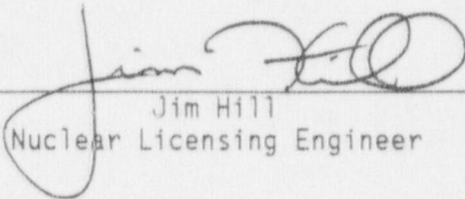
PSC will revise OPOP I to address the requirements for pressurizing the primary coolant system above 100 psia by July 1, 1989. In addition, PSC is performing a "Human Performance Evaluation System" (HPES) investigation to address other contributing factors for this event.

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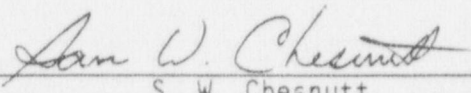
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/88

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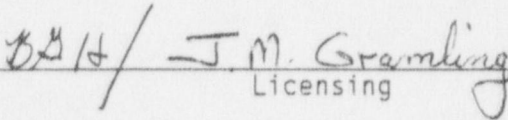
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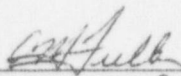
 Jim Hill
 Nuclear Licensing Engineer



 S. W. Chesnutt
 Supervisor, Nuclear Licensing-Compliance



 J. M. Gramling
 Licensing



 C. H. Fuller,
 Manager, Nuclear Production
 and Station Manager



Public Service
Company of Colorado

16805 WCR 19 1/2, Platteville, Colorado 80651

April 24, 1939
Fort St. Vrain
Unit No. 1
P-89156

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

Docket No. 50-267

SUBJECT: Licensee Event Report
89-005-00, Final Report

REFERENCE: Facility Operating
License No. DPR-34

Gentlemen:

Enclosed, please find a copy of Licensee Event Report
No. 50-267/89-005-00, Final, submitted per the requirements of
10 CFR 50.73(a)(2)(i)(B).

If you have any questions, please contact Mr. M. H. Holmes at (303)
480-6960.

Sincerely,

C. H. Fuller
Manager, Nuclear Production
and Station Manager

Enclosure

cc: Regional Administrator, Region IV
ATTN: Mr. T. F. Westerman, Chief
Projects Section B

Mr. R. E. Farrell
Senior Resident Inspector, FSV

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