Public Service

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Company of Colorado

16805 WCR 19 1/2, Platteville, Colorado 80651

March 13, 1992
Fort St. Vrain
Unit No. 1
P-92114

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

Docket No. 50-267

SUBJECT: Licensee Event Report 92-002-00, Final Report

REFERENCE: Facility Operating License No. DPR-34

Gentlemen:

Enclosed, please find a copy of Licensee Event Report No. 50-267/92-002-00, 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) 620-1701.

Sincerely,

D W Warembourg

D. W. Warembourg
Manager, Nuclear Operations
Fort St. Vrain Nuclear
Generating Station

DWW/JFH/lmg

Enclosure

cc: Regional Administrator, Region IV

Mr. J. B. Baird
Senior Resident Inspector
Fort St. Vrain

IE22 1/1

NRC 386

U.S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT (LER)

APPROVED OMB NO. 3150-0104
EXPIRES: 4/30/92
ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Fort St. Vrain, Unit No. 1	0 5 0 0 0 2 6 7	1 OF 0 7

TITLE (4)

Reactor Building Integrity Not Maintained In Accordance With TS LCO 4.5.1

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	DOCKET NUMBER(S)
0 2	1 3	9 2	9 2	— 0 0 2	— 0 0	0 3	1 3	9 2	N/A	0 5 0 0 0
										0 5 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)			
POWER LEVEL (10)	0 0 0	20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)
		20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)
		20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
		20.405(a)(1)(iii)	X 50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
		20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
		20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
	AREA CODE
M. H. Holmes, Manager, Nuclear Licensing	3 0 3 6 2 0 - 1 7 0 1

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	
				N							

SUPPLEMENTAL REPORT EXPECTED (14)

		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE)	X NO				

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

On February 13, 1992 and again on February 16, 1992, with the plant permanently shutdown for defueling, the reactor building outer truck bay doors were opened while the inside truck bay sliding deck hatch was open and internal reactor vessel maintenance activities were in progress.

Technical Specification (TS) LCO 4.5.1 requires that reactor building integrity be maintained whenever reactor vessel internal maintenance is in progress with irradiated fuel in the PCRV, irradiated fuel handling is performed within the reactor building, or the reactor is operated at power (i.e., 2% power or more). One of the requirements for maintaining reactor building integrity is to either close the outer truck bay doors or close the internal truck bay floor hatch, overhead sliding deck hatch, and personnel doors in the truck bay.

Performing reactor vessel internal maintenance with both the outer truck bay doors and truck bay sliding deck hatch open constitutes a condition in violation of TS requirements and is being reported herein in accordance with the requirements of 10 CFR 50.73 (a)(2)(i)(B).

On February 13, 1992, reactor vessel internal maintenance activities were immediately terminated upon discovery that both the outer truck bay doors and the sliding deck hatch were open. On February 16, 1992, the outer truck bay doors were opened only momentarily (thirteen seconds) to test the door alarms.

NRC FORM 366 (6-89) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104
EXPIRES: 4/30/92
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BACKGROUND:

The Fort St. Vrain reactor building is equipped with a truck bay to allow the transport of large equipment items and heavy loads in and out of the building. The truck bay is located on the north side of the reactor building at grade level. Two large doors form the boundary between the inside of the building and the outdoors.

The truck bay is provided with a concrete floor, steel side walls, and an overhead sliding deck hatch. Various doors and hatches are provided inside the truck bay to allow both personnel access and crane access. Closing the truck bay floor hatches, personnel doors, and overhead sliding deck hatch acts to extend the reactor building boundary inward and allows the outer truck bay doors to be opened without affecting building integrity. This capability to alter the reactor building boundary allows the outer truck bay doors to be open simultaneously with reactor in-core maintenance or irradiated fuel handling within the reactor building.

During plant defueling, the Spent Fuel Transfer Casks (SFTC) that contain the spent reactor fuel are transported through the reactor building truck bay. PSC is currently shipping approximately one to two loaded SFTCs each day to the Independent Spent Fuel Storage Installation (ISFSI). Once a loaded cask liner is deposited in the ISFSI, an empty liner is inserted into the SFTC and the SFTC is returned to the refueling floor through the truck bay to be reloaded with spent fuel. This process results in repeated opening of the reactor building truck bay doors.

INTRODUCTION:

EVENT 1:

During the evening work shift, on February 12, 1992, preparations were under way to begin defueling reactor core region number twelve. At approximately 0050 hours on February 13, 1992, plant maintenance personnel requested authorization for a reactor building Truck Bay Door Opening Permit. The permit was needed to allow delivery of two empty SFTCs from the ISFSI to the reactor building truck bay.

The Fuel Deck Superintendent approved the permit and verbally instructed the permit holder to notify the refueling floor control room prior to opening the truck bay doors so that any reactor internal maintenance activities could be temporarily suspended. It was necessary to suspend reactor vessel internal maintenance because the truck bay sliding deck hatch was open and was not operational. With the sliding deck hatch open, the requirements of TS LCO 4.5.1 for maintaining reactor building integrity would not be satisfied if the outer truck bay doors were opened.

At 0105 hours on February 13, 1992, the truck bay door opening permit holder proceeded to open the outer truck bay doors without first notifying the Fuel Deck Superintendent. At the time the truck bay doors were opened, refueling floor personnel were in the process of removing reflector blocks from region number twelve of the reactor core. The situation was immediately brought to the attention of the Fuel Deck Superintendent. Immediate action was taken to suspend reactor vessel internal maintenance and close the reactor isolation valve, until the outer truck bay doors were closed.

EVENT 2:

On February 16, 1992, at approximately 1300 hours, plant security personnel requested approval of a Truck Bay Door Opening Permit to allow performance of a weekly security surveillance that tests the truck bay door alarms. At 1320 hours the Operations Shift Supervisor was notified by security personnel of the intention to perform the door alarm test during the evening work shift. The truck bay sliding deck hatch was still inoperable and was in the open position. In this configuration, opening the outer truck bay doors would affect reactor building integrity.

At 1452 hours security personnel opened the outer truck bay doors approximately five inches as to actuate the door alarms. At the time the truck bay doors were opened, refueling floor personnel were in the process of inserting graphite defueling elements into region number twelve of the reactor core (i.e., reactor vessel internal maintenance). Following receipt of the door alarm the doors were closed. The security computer showed that the doors were open for thirteen seconds.

CAUSE:

Inadequate Procedure:

FSV Administrative Procedures Manual procedure G-4, "Physical Security And Access Control" establishes the general requirements for physical security and access control at Fort St. Vrain. Included in G-4 is the procedure for opening the reactor building truck bay doors. The intent of the truck bay door opening procedure is: (1) to ensure control over reactor building access and (2) to ensure that if the truck bay doors are opened when reactor vessel internal maintenance or irradiated fuel handling is in progress that reactor building integrity is maintained as required in TS LCO 4.5.1.

Procedure G-4 includes a form (the "Truck Bay Door Opening Permit") for use whenever the truck bay doors are to be opened (Figure 1). This form consolidates the G-4 procedural requirements for obtaining approval to open the truck bay doors and for making the appropriate notifications both prior to opening the truck bay doors and after closing the doors. A review of G-4 determined that both the truck bay door opening procedure and permit do not effectively communicate the requirements of LCO 4.5.1, nor do they ensure compliance with LCO 4.5.1. The following procedural deficiencies were identified:

(1) The Fuel Deck Superintendent was not procedurally involved with the door opening process. It is essential that this individual be involved whenever the truck bay doors are to be opened since he is aware of the status of refueling floor activities that may affect the LCO 4.5.1 requirement to maintain building integrity. The Truck Bay Door Opening Permit identified that only the Operations Shift Supervisor and the Lead Security Officer (LSO) be notified of the intent to open the truck bay doors. The Operations Shift Supervisor is not always cognizant of the refueling floor activities actually in progress at any one time. The LSO is notified for access control purposes only.

Whenever the possibility exists that reactor vessel internal maintenance or irradiated fuel handling may be planned or in progress, the Fuel Deck Superintendent should be notified immediately prior to opening the truck bay doors.

(2) The format and wording of the Truck Bay Door Opening Permit are confusing (see figure 1). The permit references the need to close the hatches when the reactor is greater than 2 % power. With the reactor permanently shutdown, this 2 % reference has been misinterpreted by certain individuals to no longer require that the truck bay doors and hatches need be closed and tagged.

Failure to follow procedure:

Despite the inadequacies identified with the truck bay door opening procedure and permit, the procedure can be used to guide an individual through the process of opening the truck bay doors while maintaining compliance with the requirements of LCO 4.5.1.

On February 13, 1992, a procedural violation contributed to the event where reactor building integrity was not maintained in accordance with the requirements of TS LCO 4.5.1. This violation involved the failure of the Truck Bay Door Opening Permit holder to properly verify that the truck bay overhead sliding deck hatch was closed. The sliding hatch was checked off as being closed on the permit even though the hatch was open. In addition, the Truck Bay Door Opening Permit holder also failed to notify the Fuel Deck Superintendent as instructed prior to opening the doors.

ANALYSIS:

TS LCO 4.5.1 states that the plant shall not be operated at power; reactor vessel internal maintenance shall not be performed with irradiated fuel in the PCRV; or irradiated fuel handling shall not be performed within the reactor building unless reactor building integrity is maintained. Reactor building integrity is maintained by controlling personnel access to the building, maintaining the building sub-atmospheric, keeping the building louvers closed, and either closing the outer truck bay doors or closing the truck bay floor hatches, overhead sliding deck hatch, and the personnel doors inside the truck bay.

The basis of TS LCO 4.5.1 identifies that maintaining building integrity contributes to limiting the off site doses under normal and abnormal operating conditions. The abnormal operating condition referred to in the basis or LCO 4.5.1 is a major release of activity from the PCRV. Such a release can occur only if the PCRV is pressurized. The FSV reactor is permanently shutdown with the loop I helium circulators removed from the PCRV. Under this configuration PCRV pressure is limited to atmospheric pressure or below per TS LCO 4.7.1. Maintaining the PCRV at or below atmospheric pressure precludes the possibility of a large release of activity from the PCRV. In addition, the primary coolant boundary was maintained at all times during the reactor vessel internal maintenance activities that were under way when these events occurred thereby further minimizing any potential for a primary coolant release.

The low activity levels in the primary coolant also act to minimize any off site exposure that could result if primary coolant were to escape from the PCRV and be released to the atmosphere.

It should be noted that during both events plant personnel were in the area of the truck bay and could have taken swift action to close the outer doors in the event that airborne activity was released into the reactor building.

Based on this analysis, it is concluded that these events did not pose a threat to the health and safety of the public.

CORRECTIVE ACTION:

During the February 13, 1992 event, reactor vessel internal maintenance activities were terminated, the fuel handling machine mast was retracted, and the reactor isolation valve was closed immediately upon discovery that both the outer truck bay doors and the sliding deck hatch were open. It is estimated that these actions were completed within three minutes after the truck bay doors were opened.

During the February 16, 1992 event, the outer truck bay doors were opened and closed within thirteen seconds. The short duration of this event caused it to go undetected by the refueling floor personnel and therefore no immediate suspension of internal maintenance activities was initiated. The event was identified by the Operations Shift Supervisor when he was contacted by plant security personnel notifying him that the outer truck bay doors had been closed.

The truck bay door opening procedure and permit as contained in G-4 have been revised to more clearly communicate the requirements of LCO 4.5.1 for maintaining building integrity and to include the Fuel Deck Superintendent in the truck bay door opening process.

In addition to the G-4 revisions, signs have been posted on both the inside and outside of the truck bay outer doors instructing personnel to contact the Fuel Deck Superintendent prior to opening the outer truck bay doors.

Plant personnel involved with these incidents have been reminded of the importance of procedural compliance.

Figure 1.

Form (C) 372-10-21(3)

TRUCK BAY DOOR OPENING PERMIT
FORT ST. VRAIN NUCLEAR STATION

Permit No. № 04656

Requested by _____ Title _____

Reason for access _____

Approved by
Superintendent
of Maintenance
or his designee _____ Date _____ Time _____

1. Notify Shift Supervisor of
intention to open door _____ Date _____ Time _____
(ENTER SHIFT SUPERVISOR CONTACTED)

2. Notify Lead Security Officer
of intention to open door. _____ Date _____ Time _____
(ENTER L. S. O. CONTACTED)

The following doors and hatch covers closed and tagged if Reactor ≥ 2%, PCRV internal maintenance is being performed, or irradiated fuel handling is in progress.

ELEVATION	TYPE	LOCATION	CLOSED AND TAGGED
4791'	Hatch	Access to Keyway	
4791'	Hatch	Access to Tank T-6101	
4791'	Double Doors	Northeast Area of Truck Bay	
4816'	Sliding Hatch	Crane Access to Truck Bay	
4881'	Hatch	Crane Access to Truck Bay	

Checked by _____ Title _____

Health Physics
Representative Signature: _____ Title _____

Security Guard Present: _____

Time Doors Opened _____ Date _____

Time Doors Closed _____ Date _____

Shift Supervisor
Notified _____ Date _____ Time _____
(ENTER SHIFT SUPERVISOR CONTACTED)

Lead Security
Officer Notified _____ Date _____ Time _____
(ENTER L. S. O. CONTACTED)

Returned to
Superintendent
of Maintenance _____ Date _____ Time _____

Jim Hill
Nuclear Licensing Engineer

M. H. Holmes
Nuclear Licensing Manager

D. W. Warembourg
Manager, Nuclear Operations
and Station Manager