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March 27, 1992  
Fort St. Vrain  
Unit No. 1  
P-92145

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

Docket No. 50-267

SUBJECT: Licensee Event Report 92-003-00, Final Report

REFERENCE: Facility Operating License No. DPR-34

Gentlemen:

Enclosed, please find a copy of Licensee Event Report No. 50-267/92-003-00, 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. Waterhouse*  
D. W. Waterhouse  
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

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*Handwritten signature/initials*

NRC FORM 366 (6-89)		U.S. NUCLEAR REGULATORY COMMISSION		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 (F-830), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.																			
<b>LICENSEE EVENT REPORT (LER)</b>																							
FACILITY NAME (1): <b>Fort St. Vrain, Unit No. 1</b>				DOCKET NUMBER (2): <b>0 5 0 0 1 0 2 6 7</b>																			
TITLE (4): <b>TS Surveillance SR 5.7.1 Not Satisfactorily Performed</b>				PAGE (3): <b>1 OF 016</b>																			
EVENT DATE (5):		LER NUMBER (6):		REPORT DATE (7):																			
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER																		
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OPERATING MODE (9):		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5. (Check one or more of the following) (11):																					
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		OTHER (Specify in Abstract below and in Text, NRC Form 366A)																					
LICENSEE CONTACT FOR THIS LER (12):																							
NAME				TELEPHONE NUMBER																			
M. H. Holmes, Nuclear Licensing Manager				AREA CODE																			
				31013 612101-1171011																			
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13):																							
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC																			
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SUPPLEMENTAL REPORT EXPECTED (14):																							
YES (If yes, complete EXPECTED SUBMISSION DATE):				X NO																			
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ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single space typewritten lines) (16):																							
<p>On February 26, 1992, it was identified that the Technical Specification (TS) surveillance requirements of SR 5.7.1a were not being formally verified and documented.</p> <p>SR 5.7.1a requires that the fuel handling machine (FHM) internal pressure and the FHM outlet cooling water temperature be verified to be within LCO 4.7.2 limits once per twelve hours whenever the FHM is used for reactor internal maintenance or irradiated fuel handling. Fuel deck personnel routinely check FHM pressure and outlet cooling water temperature during FHM operations. However, these routine checks are not documented, and therefore, are not considered satisfactory for demonstrating compliance with the surveillance requirements of TS SR 5.7.1a.</p> <p>This failure to satisfactorily document the surveillance requirements for the FHM pressure and outlet cooling water temperature limits once every twelve hours during internal maintenance or irradiated fuel handling with the FHM, is considered to be violation of TS SR 5.7.1 requirements and is being reported herein in accordance with the requirements of 10 CFR 50.73 (a)(2)(i)(B).</p> <p>A similar event was reported in LER 92-001.</p>																							

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 500 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20545, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

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TEXT (If more space is required, use additional NRC Form 356A's) (17)

## BACKGROUND:

On December 14, 1989, Amendment No. 75 to the FSV Technical Specifications (TS) was issued. This TS amendment added more conservative requirements to TS sections 4.7 and 5.7 regarding fuel handling and storage.

Included in Amendment No. 75 were two new surveillance requirements associated with the Fuel Handling Machine (FHM): (1) the requirement to verify that the FHM internal pressure is within the limit of LCO 4.7.2 (i.e., 1 psig or below), and (2) the requirement to verify that the FHM cooling water outlet temperature is within the limits established in LCO 4.7.2 (i.e., 150 F or less). Both these surveillance requirements are to be performed once per twelve hours whenever the FHM is in use for internal reactor maintenance or irradiated fuel handling.

On January 3, 1990, the FSV Licensing Department notified the various plant departments in writing that TS Amendment No. 75 had been received. The written communication instructed each department to verify that all procedure revisions necessary to implement the amendment were completed.

The surveillance requirement to verify FHM cooling water outlet temperature is within LCO 4.7.2 limits every twelve hours was incorporated into the "Fuel Deck Superintendent Shift Turnover Procedure", MAP-28. The requirement to verify FHM internal pressure is within limits every twelve hours was not incorporated into a surveillance procedure or round sheet.

## EVENT DESCRIPTION:

On February 26, 1992, during the weekly meeting of the Plant Operations Review Committee (PORC), it was identified that the Fuel Deck Superintendents were using a status checklist during fuel deck shift turnover in place of MAP-28, "Fuel Deck Superintendent Shift Turnover Procedure". MAP-28 is to be performed at the end of each fuel deck work shift while the relief work crew is preparing to assume defueling activities. MAP-28 contains a section for recording the FHM outlet cooling water temperature and was intended to document that FHM outlet cooling water temperature was in compliance with LCO 4.7.2 limits. The status checklist used in place of MAP-28 did not include a section for recording FHM outlet cooling water temperature. FHM outlet cooling water temperature is checked periodically during use of the FHM but these routine checks are not documented.

After discovering that FHM outlet cooling water temperature was not being documented once every twelve hours, the remaining surveillance requirements associated with TS Amendment No. 75 were reviewed to determine if any other requirements were not being satisfactorily fulfilled.

As a result of this review, it was identified that no formal mechanism existed (i.e., a round sheet or TS surveillance procedure) for documenting that FHM internal pressure was within LCO 4.7.2 limits once every twelve hours as required by TS section SR 5.7.1.a. As with FHM cooling water outlet temperature, FHM internal pressure is routinely checked during use of the FHM for internal maintenance or irradiated fuel handling. However, these routine verifications of FHM pressure are not formally documented once every twelve hours and therefore are not considered adequate in demonstrating compliance with the requirements of TS SR 5.7.1.a.



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TEXT (If more space is required, use additional NRC Form 356A's) (17)

## ANALYSIS:

## 1.) FAILURE TO DOCUMENT FHM OUTLET COOLING WATER TEMPERATURE:

The TS surveillance requirement to verify that the FHM outlet cooling water temperature is within LCO 4.7.2 limits is intended to ensure that adequate cooling water is available inside the FHM to maintain the surface temperature of the irradiated fuel elements below 750 F thereby preventing significant graphite oxidation in the event of air inleakage. A low cooling rate flow alarm provides assurance of cooling water flow while verifying outlet cooling water temperature is less than 150 F ensures the adequacy of the flow.

FHM cooling water is provided by the liner cooling system which is maintained at less than 105 F. Based on the FHM storage capacity, the initial temperature of the fuel after it is removed from the core, and the existing decay heat rate of the fuel, it is highly unlikely that the combined heat load inside the FHM could raise the FHM cooling water temperature to 150 F, even under low flow conditions.

Based on the conditions noted above in conjunction with the routine checks of FHM outlet cooling water temperature performed by fuel deck personnel during use of the FHM, PSC is confident that the FHM outlet cooling water outlet temperature at no time exceeded or even approached the 150 F limit of LCO 4.7.2.

## 2.) FAILURE TO DOCUMENT FHM PRESSURE EVERY TWELVE HOURS:

Internal reactor vessel maintenance and handling of irradiated fuel are performed in accordance with activity specific Fuel Handling Procedure Work Packets (FHPWPs). The overall process of defueling a core region consists of several individual and distinct processes. These individual processes are termed "tasks" in the FHPWPs. The FHPWP contains specific step-by-step instructions for each task, including a sign off that verifies that the appropriate TS requirements are met prior to beginning the task.

The FHPWPs do not contain a specific step that verifies FHM pressure is within LCO 4.7.2 limits once every twelve hours during internal reactor maintenance or irradiated fuel handling. One reason for this is that the time required to complete any task involving internal reactor vessel maintenance and irradiated fuel handling under normal circumstances is significantly less than twelve hours. The FHPWPs do however contain specific steps for pumping down the FHM and verifying that internal FHM pressure is at or below 1 psig prior to entering a reactor core region with the FHM for all core alterations, including irradiated fuel handling. In addition, during tasks involving internal maintenance or irradiated fuel handling the internal pressure of the FHM is routinely verified to be at or below 1 psig.

The FHM is continuously vented to the plant's gas waste vacuum tank whenever it is used for internal maintenance or irradiated fuel handling. This provides excellent assurance that the FHM is always at or below atmospheric pressure during these tasks.

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TEXT (If more space is required, use additional NRC Form 355A's) (17)

Based on the FHPWP controls, the FHM being vented to the gas waste vacuum tank, and the routine checks of FHM internal pressure, PSC is confident that the FHM internal pressure at no time exceeded the limitations established in TS LCO 4.7.2.

It should be noted that this incident is similar to an event reported in LER 92-001 where new surveillance requirements added to the TS were not adequately implemented. PSC is performing a complete review of the TS to ensure that all surveillance requirements are being satisfied.

## CAUSE:

## INADEQUATE PROCEDURES:

## 1.) Procedure NLR-3:

PSC's procedure for implementing NRC approved TS amendments (NLR-3) is inadequate. This procedure relies almost entirely on the individual plant departments to develop TS surveillance procedures that implement new surveillance requirements introduced by TS amendments. The procedure does not establish a mechanism to ensure that all TS surveillance requirements are properly implemented to meet the intent of the TS.

Not having a mechanism to track and monitor that all TS surveillance requirements are properly developed and implemented was a primary contributor to this event.

## 2.) Procedure MAP-28:

Including the TS surveillance requirements for verifying FHM cooling water outlet temperature in a non-TS procedure (MAP-28) is not good practice. PSC makes every effort to ensure that all TS surveillance requirements are incorporated in TS surveillance procedures. The status of all TS surveillance procedures is closely monitored by the plant's scheduling department to ensure that all TS procedures are completed within the required interval. Non-TS procedures are not as closely monitored.

It should also be noted that MAP-28 did not identify that recording FHM cooling water outlet temperature was required to satisfy a TS surveillance requirement. This again is not good practice as it does not alert the individual performing the procedure that a TS requirement is involved.

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TEXT IF more space is required, use additional NRC Form 355A's (17)

## FAILURE TO FOLLOW PROCEDURES:

The Fuel Deck Superintendents Shift Turnover Procedure, MAP-28, is intended to ensure that a comprehensive exchange of information takes place between Fuel Deck Superintendents during shift relief. The procedure outlines the responsibilities of the Fuel Deck Superintendents and incorporates checklists to record pertinent information regarding the status of fuel deck systems and equipment.

MAP-28 was developed to accommodate a specific shift rotation schedule. As defueling progressed and fuel deck work shifts changed, MAP-28 became awkward and no longer facilitated the shift turnover process. Fuel Deck Superintendents stopped using MAP-28 and began using a status sheet checklist that was believed to contain all the pertinent requirements of MAP-28 in a condensed format. This checklist did not however include a step for recording FHM cooling water outlet temperature once every twelve hours.

Failure to perform MAP-28 during shift turnover is a violation of plant procedures.

## CORRECTIVE ACTION:

- 1.) PSC will perform a complete review of all TS surveillance requirements to ensure that an appropriate implementing procedure is in place for each. This review will be completed by April 30, 1992.
- 2.) Procedure NLR-3 will be revised to provide a mechanism for ensuring that any new TS surveillance requirement resulting from a TS amendment is properly implemented.
- 3.) A new TS surveillance procedure has been developed to verify and document that FHM cooling water outlet temperature and FHM internal pressure are within LCO 4.7.2 limits every twelve hours. This procedure has been approved and is in use.
- 4.) MAP-28 has been revised to better accommodate shift turnover defueling to the Independent Spent Fuel Storage Facility. The revised version of MAP-28 has been developed and is currently in the approval process.

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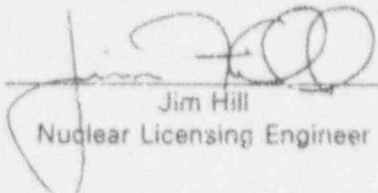
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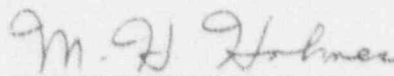
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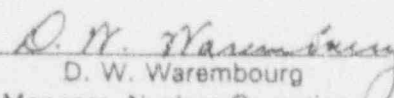
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TEXT (If more space is required, use additional NRC Form 366A's) (17)

  
Jim Hill  
Nuclear Licensing Engineer

  
M. H. Holmes  
Nuclear Licensing Manager

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