

LICENSEE EVENT REPORT (LER)

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

FACILITY NAME (1): Fort St. Vrain, Unit No. 1		DOCKET NUMBER (2): 0510010121617	PAGE (3): 1 OF 05
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TITLE (4): SURVEILLANCE PROCEDURE NOT PERFORMED WITHIN TECHNICAL SPECIFICATION INTERVAL DUE TO ERROR IN COMPUTER SCHEDULING PROGRAM

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
04	08	88	88	007	000	05	09	88	N/A
									DOCKET NUMBER(S): 05100101

OPERATING MODE (9): N

POWER LEVEL (10): 01010

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 50.73 (Check one or more of the following) (11):

<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.405(e)	<input type="checkbox"/> 50.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)
<input type="checkbox"/> 20.405(a)(1)(ii)	<input type="checkbox"/> 50.36(e)(1)	<input type="checkbox"/> 50.73(a)(2)(v)	<input type="checkbox"/> 73.71(c)
<input type="checkbox"/> 20.405(a)(1)(iii)	<input type="checkbox"/> 50.36(e)(2)	<input type="checkbox"/> 50.73(a)(2)(vi)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
<input type="checkbox"/> 20.405(a)(1)(iv)	<input checked="" type="checkbox"/> 50.73(a)(2)(i)	<input type="checkbox"/> 50.73(a)(2)(vii)(A)	
<input type="checkbox"/> 20.405(a)(1)(v)	<input type="checkbox"/> 50.73(a)(2)(ii)	<input type="checkbox"/> 50.73(a)(2)(vii)(B)	
<input type="checkbox"/> 20.405(a)(1)(vi)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(ix)	

LICENSEE CONTACT FOR THIS LER (12):

NAME: Mark A. Joseph, Technical Services Supervisor

TELEPHONE NUMBER: 3103 61210-112103

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):

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):

On April 9, 1988, with the reactor shut down for maintenance, it was determined that the Technical Specification frequency limit for performance of Surveillance SR-4.1.8.c.1/2/3-Q (Reserve Shutdown Hopper, ACM Disconnect and Low Pressure Alarm Test) had been exceeded. Although this surveillance is performed quarterly, the computer-generated schedule did not show the surveillance due until 9 months after the "last completed" date (November 28, 1987).

Immediate corrective action was taken to perform the surveillance and to verify that no other surveillances were in violation of Technical Specification limits. The surveillance was completed satisfactorily. There was no effect on public health and safety as a result of this violation.

The root cause of this event was inadequate verification of the computer program through software controls, which allowed a computer scheduling program error to not be identified.

Corrective action will be initiated to formalize the method for controlling changes to the computer scheduling program.

This event is being reported per the requirements of 10CFR50.73(a)(2)(i)(B).

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## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
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TEXT (if more space is required, use additional NRC Form 366A's) (17)

BACKGROUND:

In January of 1987, the Fort St. Vrain (FSV) Scheduling Department proposed major changes to the surveillance scheduling computer program to enhance human factors considerations. During February and March 1987, these changes were implemented.

From April through November, 1987, there were no apparent problems with the schedule. However, the first week of December 1987, the Scheduling Department noticed that surveillances on the schedule printout with a due date in 1988 had been incorrectly scheduled. For example, in the case of a monthly surveillance which had to be rescheduled daily, the computer was not using the "Last Complete" date to calculate the new due date. The computer was simply adding exactly one standard surveillance interval instead of computing from the actual performance date.

During the subsequent two weeks in December, while Computer Services found and corrected errors in the surveillance scheduling program, the Scheduling Department ran a daily check of all surveillances (479). For any surveillances with scheduling errors, the "Last Complete" date had to be reentered. This was necessary to force a recalculation of the "Schedule", "Latest Due", and "Tech. Spec. Compliance" dates for those surveillances. Posted schedules were independently verified by the Scheduling Department.

By the last week of December, 1987, all errors were thought to have been corrected.

EVENT DESCRIPTION:

On April 9, 1988, with the reactor shut down, it was determined that the Technical Specification frequency limit for performance of Surveillance SR-4.1.8.c.1/2/3-Q (Reserve Shutdown Hopper, ACM Disconnect and Low Pressure Alarm Test) had been exceeded. A Scheduling Technician determined, while reviewing incomplete surveillances, that SR-4.1.8.c.1/2/3-Q, a quarterly surveillance (required at least every 92 days), had not been performed since November 28, 1987. The next Technical Specification required completion date was March 22, 1988.

The Scheduling Technician immediately issued a special surveillance to the Operations Department. The surveillance was satisfactorily completed the same day, April 9, 1988.

The Scheduling Technician then checked the schedule printout for additional errors. From this review, two other procedures with erroneous "schedule" dates were identified and corrected. The required completion dates for these two surveillances had not been exceeded.

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TEXT (If more space is required, use additional NRC Form 305A's) (17)

CAUSE DESCRIPTION:

The root cause of the event was an error in the computer scheduling program that was not identified due to the lack of a well-defined and documented software control procedure for the scheduling program.

The Computer Services and Scheduling Departments employ certain controls regarding changes to the scheduling program (e.g., documenting change requests, changes, code listings, verification of results, etc.) on an informal basis. However, these practices have not been applied consistently. Many coding changes were made directly to the online system at various points with only a review by the Scheduling Technician.

SAFETY ANALYSIS:

The surveillance that was mis-scheduled (SR-4.1.8.c.1/2/3-Q) fulfills the requirements of Fort St. Vrain Interim Technical Specification SR 4.1.8.c., which requires verifying the operability of all Reserve Shutdown (RSD) units for compliance with Limiting Condition for Operation (LCO) 3.1.8. This is a quarterly surveillance, required to be performed at least every 92 days.

Since the performance of this surveillance was not within limits required by the Technical Specifications, this event is reportable pursuant to the requirements of 10CFR50.73(a)(2)(i)(B).

The RSD system provides reactor shutdown capability in the event that the control rods fail to insert. Thirty-seven RSD hoppers containing boron carbide balls could be pressurized individually in an emergency to rupture a disc and allow the balls to enter the core.

The surveillance test pressurizes each RSD hopper above reactor pressure, to verify that the rupture disc is intact and that the hopper is capable of being pressurized.

The RSD system must be operable any time the reactor is critical. Although the surveillance was not performed within the required surveillance interval, the system was verified operable on April 9, 1988. Therefore, the system would have been capable of being operated as designed, had it been required.

CORRECTIVE ACTIONS:

Immediate corrective actions:

1. A special issue of surveillance was satisfactorily completed on April 9, 1988.
2. A check for similar errors in scheduling dates for all other surveillances was completed April 9, 1988, which verified that no other surveillance intervals had been exceeded.

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TEXT (If more space is required, use additional NRC Form 365A a) (17)

Permanent corrective actions:

Fort St. Vrain is currently in the process of defining and implementing an overall software control program. The scheduling program has been identified as one to be controlled by this program.

A procedure will be written to define and formalize the controls for computer scheduling program changes, consistent with guidelines given in the program plan. The key elements of this procedure will be:

1. Document all change requests in sufficient detail such that there is no question as to the desired results.
2. Provide a technical description of proposed changes to software, including evaluation of impact on interacting application software.
3. Maintain records of all revised code listings, such as a previous listing saved with remarks on changes.
4. Develop a test plan for revised code with documentation of test results.
5. Provide for independent technical review of final code.
6. Allow user verification and testing to verify that changes meet requirements.


LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

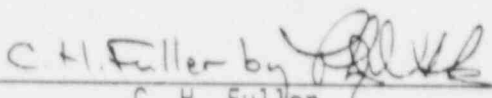
FACILITY NAME (1) Fort St. Vrain, Unit No. 1	DOCKET NUMBER (2) 0 5 0 0 0 2 6 7 8 8	LER NUMBER 16			PAGE (3)	
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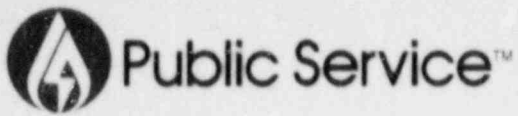
TEXT (if more space is required, use additional NRC Form 305A's) (17)

  
 Dan Pratt

  
 Mark Joseph  
 Technical Services Supervisor

  
 Licensing

  
 C. H. Fuller  
 Manager, Nuclear Production



Public Service  
Company of Colorado

16805 WCR 19 1/2, Platteville, Colorado 80651

May 9, 1988  
Fort St. Vrain  
Unit No. 1  
P-88163

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

Docket No. 50-267

SUBJECT: Licensee Event Report  
88-007-00, Final Report

REFERENCE: Facility Operating  
License No. DPR-34

Gentlemen:

Enclosed please find a copy of Licensee Event Report  
No. 50-267/88-007-00, 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 by [Signature]*

C. H. Fuller  
Manager, Nuclear Production

Enclosure

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

Director Nuclear Reactor Regulation  
ATTN: Mr. J. A. Calvo, Director  
Project Directorate IV

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

CHF/djm

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