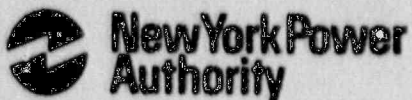


James A. FitzPatrick  
Nuclear Power Plant  
P.O. Box 41  
Lycoming, New York 13093  
315 342-3640



William Fernandez II  
Resident Manager

April 16, 1990  
JAFP-90-1327

United States Nuclear Regulatory Commission  
Document Control Desk  
Mail Station PL-137  
Washington, D.C. 20555

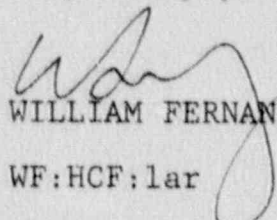
SUBJECT: DOCKET NO. 50-333  
LICENSEE EVENT REPORT: 90-008-00  
Late Calculation of Reactor  
Coolant Leak Rate

Dear Sir:

This Licensee Event Report is submitted in accordance with  
10 CFR 50.73(a)(2)(i).

Questions concerning this report may be addressed to  
Mr. Hamilton Fish at (315) 349-6013.

Very truly yours,

  
WILLIAM FERNANDEZ

WF:HCF:lar

Enclosure

cc: USNRC, Region I  
USNRC Resident Inspector  
INPO Records Center  
American Nuclear Insurers

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## LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)  
**JAMES A. FITZPATRICK NUCLEAR POWER PLANT**

DOCKET NUMBER (2)

0 5 0 0 0 3 3 3 1 OF 0 5

TITLE (4)

Extended Time Interval for Calculation of Reactor Coolant Leak Rate

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	3	1	5	9	0	9	0	0	0	0	0
0	3	1	5	9	0	9	0	0	0	0	0

OPERATING MODES (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § (Check one or more of the following) (11)																																	
POWER LEVEL (10)	1 0 0	<table border="1"><thead><tr><th>20.402(b)</th><th>20.403(a)</th><th>20.73(a)(2)(iv)</th><th>73.71(b)</th></tr></thead><tbody><tr><td>20.403(a)(1)(i)</td><td>20.403(a)(1)</td><td>20.73(a)(2)(v)</td><td>73.71(c)</td></tr><tr><td>20.403(a)(1)(ii)</td><td>20.403(a)(2)</td><td>20.73(a)(2)(vi)</td><td></td></tr><tr><td>20.403(a)(1)(iii)</td><td>X 20.73(a)(2)(i)</td><td>20.73(a)(2)(vii)(A)</td><td>OTHER (Specify in Abstract below and in Text, NRC Form 3054)</td></tr><tr><td>20.403(a)(1)(iv)</td><td>20.73(a)(2)(ii)</td><td>20.73(a)(2)(vii)(B)</td><td></td></tr><tr><td>20.403(a)(1)(v)</td><td>20.73(a)(2)(iii)</td><td>20.73(a)(2)(viii)</td><td></td></tr></tbody></table>										20.402(b)	20.403(a)	20.73(a)(2)(iv)	73.71(b)	20.403(a)(1)(i)	20.403(a)(1)	20.73(a)(2)(v)	73.71(c)	20.403(a)(1)(ii)	20.403(a)(2)	20.73(a)(2)(vi)		20.403(a)(1)(iii)	X 20.73(a)(2)(i)	20.73(a)(2)(vii)(A)	OTHER (Specify in Abstract below and in Text, NRC Form 3054)	20.403(a)(1)(iv)	20.73(a)(2)(ii)	20.73(a)(2)(vii)(B)		20.403(a)(1)(v)	20.73(a)(2)(iii)	20.73(a)(2)(viii)	
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20.403(a)(1)(v)	20.73(a)(2)(iii)	20.73(a)(2)(viii)																																	

LICENSEE CONTACT FOR THIS LER (12)  
NAME  
Hamilton C. Fish

TELEPHONE NUMBER

AREA CODE

3 1 5 3 4 9 - 6 0 1 3

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
	X				

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

EIIIS Codes are in []

At full power on 3/15/90, the reactor coolant leak rate was calculated for an interval of 7 hours instead of 4 hours as required by Technical Specification 4.6.D.

The operator (NCO) at the front control panel activated the primary containment [HN] drain collection sump pump at 1600. The auxiliary operator (AO) did not read the back panel pump out flow integrators immediately following the completion of the sump pumpdowns. This omission was discovered at 1900 by another auxiliary operator and corrected. The AO had transferred from another shift team and expected to be told when to read the meters. The NCO (who had changed duties with the senior nuclear operator (SNO) within the shift) assumed the AO would read the meters without further instruction as was customary on this shift team.

This event is not considered significant to plant safety. A reactor coolant leak in excess of Technical Specification limits is displayed and alarmed on the front panels when the sump pump restarts in less than 80 minutes following the previous pump-out (15 minutes for the identified equipment drain sump) or when excessive time is required to pump out the sump. This is 3 times faster than the 4-hour manual calculation interval.

Procedures have been standardized between shift crews and a single person has been assigned responsibility to perform all parts of the task. Related LERs: 88-006 and 87-022.



## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO 3150-0104  
EXPIRES 8/31/85

FACILITY NAME (1) <b>JAMES A. FITZPATRICK NUCLEAR POWER PLANT</b>	DOCKET NUMBER (2) <b>0 5 0 0 C 3 3 3 9 0</b>	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		<b>0 0 8</b>	<b>0 0</b>	<b>0 0</b>	<b>0 2</b>	<b>OF</b>	<b>0 5</b>

TEXT (If more space is required, use additional NRC Form 288A's) (19)

EIIIS Codes are in []

Description

Technical Specification 4.6.D states: "Reactor coolant leakage rate inside the primary containment shall be monitored and recorded once every four hours utilizing the primary containment sump monitoring system (equipment drain sump monitoring and floor drain sump monitoring)."

Each of the two sumps (identified equipment and unidentified floor drains) contain two pumps which automatically pump out accumulated leakage upon receipt of sump high level signals. The discharged liquid volume is measured and displayed by flow integrators on control room back panels and recorded on a dual pen strip chart recorder on the front panel. To meet the surveillance requirement, the licensed nuclear control operator (NCO) manually initiates a pump-out of each sump (from switches on the front panels) every four hours. This provides a sump low level reference datum to use in calculation of leakage during the next 4-hour interval. Following the pump-down, an auxiliary operator (AO) records the flow integrator readings from the control room back panel and calculates the reactor coolant leak rate for the preceding 4-hour period.

On March 15, 1990 at 1600 a senior nuclear operator (SNO) (substituting for the NCO) pumped out the primary containment [HN] equipment and floor drain collection sumps. However, the auxiliary operator (AO) (who was temporarily transferred from a different shift team) failed to record the flow integrator readings from the back panel and failed to calculate the leak rate in accordance with the "Daily Surveillance and Instrument Check" procedure (ST-40D). This omission was discovered at approximately 1850 by a different AO who observed the blank spaces on the data sheet for ST-40D while he was recording unrelated data for which he was responsible. At 1900 the sumps were manually pumped out, the flow integrator readings recorded, and the reactor coolant leak rate was calculated. The reactor leak rate was found to be well within the limits defined in Technical Specification 3.6.D.1.

This event occurred while the reactor was at full power. Concurrent with this event, the diesel engine driven fire pump and the refueling bridge grapple were being tested.

Cause

This event is classified as Cause Code [A], personnel error. The auxiliary operator (AO) failed to record the necessary data in the space provided on his data sheet. The nuclear control operator (NCO), having initiated the pump-out of the sumps, failed to follow-up and ensure that the AO had recorded the required data and performed the leak rate calculation.

## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO 3150-0104

EXPIRES 6/31/85

FACILITY NAME (1) <b>JAMES A. FITZPATRICK NUCLEAR POWER PLANT</b>	DOCKET NUMBER (2) <b>0 5 0 0 0 3 3 3</b>	LER NUMBER (6) <table border="1"> <tr> <th data-bbox="1113 297 1213 331">YEAR</th> <th data-bbox="1213 297 1354 331">SEQUENTIAL NUMBER</th> <th data-bbox="1354 297 1448 331">REVISION NUMBER</th> </tr> <tr> <td data-bbox="1113 353 1213 387">9 0</td> <td data-bbox="1213 353 1354 387">— 0 0 8</td> <td data-bbox="1354 353 1448 387">— 0 0</td> </tr> </table>	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	9 0	— 0 0 8	— 0 0	PAGE (3) <b>0 3 OF 0 5</b>
YEAR	SEQUENTIAL NUMBER	REVISION NUMBER							
9 0	— 0 0 8	— 0 0							

TEXT (If more space is required, use additional NRC Form 255A's) (17)

The AO was necessarily and temporarily moved from his normally assigned shift rotation team to a different group. It was the normal procedure in his previous group to be instructed to take the data readings by the NCO. Thus, although he was familiar and experienced with the task, he did not take the initiative to record the data without specific direction from the NCO. In contrast, the normal procedure in the shift group to which he was transferred was for the AO to routinely record the data without specific direction from the NCO. Accordingly, the NCO did not specifically tell the AO to record the data, although the NCO was ultimately responsible for the task.

Human engineering research clearly identifies the increase in the potential for human error when personnel are initially transferred between work groups or teams and when a person initially changes specific job task functions. Both of these actions occurred and therefore contributed to this event.

The necessary transfer of the AO was compounded by an equally necessary (but unplanned) exchange of duties between the SNO and NCO. Thus in this situation, both of the principal participants (NCO and AO) had been shifted from their previous duties or shift group. This double shift of personnel (while an unavoidably necessary and expected reality of plant operations and while in no way relieving the participants of their responsibilities) was nevertheless a contributing factor to the human error.

Analysis

Calculation of the reactor coolant rate for a 7-hour period, instead of the 4-hour period specified by surveillance requirement 6.4.D of Technical Specifications, is reported under the provisions of 10 CFR 50.73(a)(2)(i)(B) as an operation or condition prohibited by plant Technical Specifications. When the leak rate was calculated, it was found to be well within Technical Specification limits. This event had no impact on plant safety.

The primary containment leak collection system includes front panel instrumentation in addition to the flow integrators on the back panel. Two independent dual pen strip chart recorders display the leak rate from two independent instrument channels for each sump by plotting sump level against time. A permanent template is mounted on the clear face of the recorders. Engraved on the template are 5 labeled lines at slopes equivalent to leak rates of 1, 3, 5, 10, and 20 gpm. This provides a continuous real time display of reactor coolant leak rate available to the front panel operators. A significant increase in leak rate would be immediately apparent to operators.



## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104  
EXPIRES 6/31/85

FACILITY NAME (1) <b>JAMES A. FITZPATRICK NUCLEAR POWER PLANT</b>	DOCKET NUMBER (2) <b>0 5 0 0 0 3 3 3</b>	LER NUMBER (3)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		<b>9 0</b>	<b>— 0 0 8</b>	<b>— 0 0</b>	<b>0 4</b>	<b>OF 0 5</b>	

TEXT / If more space is required, use additional NRC Form 308A's / (17)

Further, pump activation interval time and length of operating time alarms are provided on the front panel for both the equipment and floor drain sump pumps. A reactor coolant leak into the identified equipment drain sump in excess of the Technical Specification limit for combined leakage of 25 gpm would fill the sump in less than 15 minutes, activating the sump pump and an audible and visual operator alarm. A sustained reactor coolant leak rate into the unidentified floor drain collection sump in excess of the Technical Specification limit of 5 gpm would fill the sump in less than 80 minutes activating a similar front panel alarm.

Therefore, any leak of reactor coolant in excess of Technical Specification limits would result in an automatic alarm to the operator within not more than 15 minutes for the equipment drain sump or 80 minutes for the floor drain sump. These leak rates and time intervals are part of the safety design basis for the reactor coolant system leakage detection and leakage rate in Section 4.10 of the Final Safety Analysis Report. An unidentified excessive leak rate would be automatically alarmed in less than 80 minutes which is 3 times faster than the 4-hour interval within which it would be discovered by manual calculation. Accordingly, no safety significance can be attached to the manual calculation of reactor coolant leak rate over a 7-hour interval instead of a 4-hour interval.

Corrective Action

1. The procedure for obtaining the data to calculate the reactor coolant leak rate has been standardized between shifts to eliminate the possibility of confusion to personnel transferred between shift crews. The division of responsibility for pumping, reading the flow integrators, and calculating the reactor coolant leak rate has been eliminated. The licensed nuclear control operator now performs all required functions (including reading the flow integrators) to calculate the leak rate.
2. At the recommendation of the USNRC Resident Inspector and the USNRC Project Manager, a request for amendment to the Technical Specifications will be submitted to extend and restore the required interval for manual calculation of reactor coolant leak rate from "once every 4 hours" to the original "once every 8 hours" which is the industry standard for performing this calculation.

## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104  
EXPIRES 8/31/86

FACILITY NAME (1)

JAMES A. FITZPATRICK  
NUCLEAR POWER PLANT

DOCKET NUMBER (2)

0 5 0 0 0 3 3 3

LER NUMBER (3)

YEAR SEQUENTIAL REVISION  
NUMBER NUMBER NUMBER

9 0 — 0 0 8 — 0 0 0 5 OF 0 5

PAGE (3)

TEXT (if more space is required, use additional NRC Form 308A's) (19)

Additional Information

LER-88-008 of 6/28/88

LER-87-022 of 12/10/87

These LERs report identical events in which personnel failed to calculate the reactor coolant leak rate within the 4-hour surveillance period.