

# ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

## REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 9208030193      DOC. DATE: 92/07/29      NOTARIZED: NO      DOCKET #  
 FACIL: 50-305 Kewaunee Nuclear Power Plant, Wisconsin Public Service      05000305  
 AUTH. NAME      AUTHOR AFFILIATION  
 DRESSEN, J.D.      Wisconsin Public Service Corp.  
 SCHROCK, C.A.      Wisconsin Public Service Corp.  
 RECIP. NAME      RECIPIENT AFFILIATION

SUBJECT: LER 92-015-00: on 920629, during SSFI, theorized that rupture in either feedwater or main steam piping, located in contaminated storage room, could result in failure of steam exclusion boundaries. Doors removed. W/920729 ltr.

DISTRIBUTION CODE: IE22T      COPIES RECEIVED: LTR 1 ENCL 1 SIZE: 7  
 TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

NOTES:

	RECIPIENT ID CODE/NAME	COPIES LTR ENCL	RECIPIENT ID CODE/NAME	COPIES LTR ENCL
	PD3-3 LA HANSEN, A.	1 1 1 1	PD3-3 PD	1 1
INTERNAL:	ACNW	2 2	ACRS	2 2
	AEOD/DOA	1 1	AEOD/DSP/TPAB	1 1
	AEOD/ROAB/DSP	2 2	NRR/DET/EMEB 7E	1 1
	NRR/DLPQ/LHFB10	1 1	NRR/DLPQ/LPEB10	1 1
	NRR/DOEA/OEAB	1 1	NRR/DREP/PRPB11	2 2
	NRR/DST/SELB 8D	1 1	NRR/DST/SICB8H3	1 1
	NRR/DST/SPLB8D1	1 1	NRR/DST/SRXB 8E	1 1
	<u>REG FILE</u> 02	1 1	RES/DSIR/EIB	1 1
	<u>RCN3</u> FILE 01	1 1		
EXTERNAL:	EG&G BRYCE, J.H	2 2	L ST LOBBY WARD	1 1
	NRC PDR	1 1	NSIC MURPHY, G.A	1 1
	NSIC POORE, W.	1 1	NUDOCS FULL TXT	1 1

NOTE TO ALL "RIDS" RECIPIENTS:

PLEASE HELP US TO REDUCE WASTE! CONTACT THE DOCUMENT CONTROL DESK,  
 ROOM P1-37 (EXT. 20079) TO ELIMINATE YOUR NAME FROM DISTRIBUTION  
 LISTS FOR DOCUMENTS YOU DON'T NEED!

FULL TEXT CONVERSION REQUIRED  
 TOTAL NUMBER OF COPIES REQUIRED: LTR 31 ENCL 31

WPSC (414) 433-1598  
TELECOPIER (414) 433-5544



EASYLINK 62891993

**WISCONSIN PUBLIC SERVICE CORPORATION**

600 North Adams • P.O. Box 19002 • Green Bay, WI 54307-9002

July 29, 1992

10 CFR 50.73

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

Gentlemen:

Docket 50-305  
Operating License DPR-43  
Kewaunee Nuclear Power Plant  
Reportable Occurrence 92-015-00

In accordance with the requirements of 10 CFR 50.73, "Licensee Event Report System," the attached Licensee Event Report for reportable occurrence 92-015-00 is being submitted.

Sincerely,

C. A. Schrock  
Manager-Nuclear Engineering

VJC\jac

Attach.

cc - INPO Records Center  
Mr. Patrick Castleman, US NRC  
US NRC, Region III

9208030193 920729  
PDR ADDCK 05000305  
S PDR

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Kewaunee Nuclear Power Plant	DOCKET NUMBER (2) 0 5 0 0 0 3 0 5	PAGE (3) 1 OF 0 6
---	--------------------------------------	----------------------

TITLE (4)  
Unanalyzed Condition Identified in Steam Exclusion System Design

EVENT DATE (6)			LER NUMBER (8)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)																																																																																															
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES		DOCKET NUMBER(S)																																																																																													
06	29	92	92	015	0	07	29	92	N/A		0 5 0 0 0																																																																																													
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td colspan="12">THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (9)</td> </tr> <tr> <td colspan="3">OPERATING MODE (8) N</td> <td colspan="3">20.402(b)</td> <td colspan="3">20.408(e)</td> <td colspan="3">50.73(a)(2)(iv)</td> <td colspan="3">73.71(b)</td> </tr> <tr> <td colspan="3">POWER LEVEL (10) 100</td> <td colspan="3">20.408(a)(1)(i)</td> <td colspan="3">50.38(e)(1)</td> <td colspan="3">50.73(a)(2)(v)</td> <td colspan="3">73.71(c)</td> </tr> <tr> <td colspan="3"></td> <td colspan="3">20.408(a)(1)(ii)</td> <td colspan="3">50.38(e)(2)</td> <td colspan="3">50.73(a)(2)(vi)</td> <td colspan="3" rowspan="4">OTHER (Specify in Abstract below and in Text, NRC Form 306A)</td> </tr> <tr> <td colspan="3"></td> <td colspan="3">20.408(a)(1)(iii)</td> <td colspan="3">50.73(a)(2)(ii)</td> <td colspan="3">50.73(a)(2)(vii)(A)</td> </tr> <tr> <td colspan="3"></td> <td colspan="3">20.408(a)(1)(iv)</td> <td colspan="3">50.73(a)(2)(iii)</td> <td colspan="3">50.73(a)(2)(vii)(B)</td> </tr> <tr> <td colspan="3"></td> <td colspan="3">20.408(a)(1)(v)</td> <td colspan="3">50.73(a)(2)(iv)</td> <td colspan="3">50.73(a)(2)(viii)</td> </tr> </table>												THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (9)												OPERATING MODE (8) N			20.402(b)			20.408(e)			50.73(a)(2)(iv)			73.71(b)			POWER LEVEL (10) 100			20.408(a)(1)(i)			50.38(e)(1)			50.73(a)(2)(v)			73.71(c)						20.408(a)(1)(ii)			50.38(e)(2)			50.73(a)(2)(vi)			OTHER (Specify in Abstract below and in Text, NRC Form 306A)						20.408(a)(1)(iii)			50.73(a)(2)(ii)			50.73(a)(2)(vii)(A)						20.408(a)(1)(iv)			50.73(a)(2)(iii)			50.73(a)(2)(vii)(B)						20.408(a)(1)(v)			50.73(a)(2)(iv)			50.73(a)(2)(viii)		
THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (9)																																																																																																								
OPERATING MODE (8) N			20.402(b)			20.408(e)			50.73(a)(2)(iv)			73.71(b)																																																																																												
POWER LEVEL (10) 100			20.408(a)(1)(i)			50.38(e)(1)			50.73(a)(2)(v)			73.71(c)																																																																																												
			20.408(a)(1)(ii)			50.38(e)(2)			50.73(a)(2)(vi)			OTHER (Specify in Abstract below and in Text, NRC Form 306A)																																																																																												
			20.408(a)(1)(iii)			50.73(a)(2)(ii)			50.73(a)(2)(vii)(A)																																																																																															
			20.408(a)(1)(iv)			50.73(a)(2)(iii)			50.73(a)(2)(vii)(B)																																																																																															
			20.408(a)(1)(v)			50.73(a)(2)(iv)			50.73(a)(2)(viii)																																																																																															

LICENSEE CONTACT FOR THIS LER (13)

NAME Jay D. Dressen - Plant Nuclear Engineer	TELEPHONE NUMBER AREA CODE: 4 1 4 3 8 8 1 - 2 5 6 0
---	--

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)		EXPECTED SUBMISSION DATE (15)		MONTH	DAY	YEAR
<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)	<input checked="" type="checkbox"/> NO					

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single space typewritten lines) (18)

At 1600 on June 29, 1992, an unanalyzed condition was identified in the Kewaunee Nuclear Power Plant steam exclusion design. During an internal Safety System Functional Inspection it was theorized that a rupture in either feedwater or main steam piping located in the contaminated material storage room could overpressurize the room and result in a failure of the steam exclusion boundaries. The boundaries isolate steam areas from non-steam areas following a high energy line break outside containment. This event is being reported as an unanalyzed condition which could compromise plant safety.

The potential for the contaminated material storage room to become overpressurized has existed since initial plant operation. The cause of the event was inadequate design reviews for the steam exclusion system.

Actions have been taken to prevent overpressurization of the contaminated material storage room. The doors in the room were opened to provide a relief path if a break occurred in the room. The doors that were opened do not serve as steam exclusion boundary doors and lead to a common ventilation area. The doors have since been removed and appropriate documentation and drawings are being revised to reflect the change. WPSC is continuing to evaluate the situation to determine the best long term solution.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)  Kewaunee Nuclear Power Plant	DOCKET NUMBER (2)  0   5   0   0   0   3   0   5	LER NUMBER (8)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		9 2	— 0 1 1 5	— 0 1 0	0 2	OF	0 6

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

Description of Event

On June 29, 1992, with the plant at 100 percent power, an internal Safety System Functional Inspection (SSFI) of the Control Room Air Conditioning, Auxiliary Building Special Ventilation and Steam Exclusion Systems identified an unanalyzed condition. The SSFI team postulated that a small break of either the main feedwater (FW) line or the turbine driven auxiliary feedwater pump (TDAFWP) [P] steam supply line within the contaminated material storage room may overpressurize the room. The overpressurization of the room could result in a failure of the steam exclusion (SE) boundaries to the adjacent areas and allow steam into these areas. If the SE boundaries were unable to isolate steam from non-steam areas following a High Energy Line Break (HELB), the plant would be in an unanalyzed condition. This condition has existed since initial plant operation.

The SSFI reviewed the steam exclusion model in Section 10A of the Updated Safety Analysis Report (USAR) to identify modeling deficiencies. The unanalyzed condition described above was the only model deficiency identified during the SSFI review. The unanalyzed condition was discovered by the Safety System Engineering Group during the SSFI of the SE System. The SE System consists of hardware which protects areas or zones with safety-related equipment from a harsh environment following a HELB. Steam is isolated from steam exclusion zones by ventilation isolation dampers [DMP], doors [D], and sealed walls. If a high energy small break occurred in the contaminated material storage room, the room could pressurize due to its

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)  Kewaunee Nuclear Power Plant	DOCKET NUMBER (2)  0 5 0 0 0 3 0 5	LER NUMBER (8)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		9 2	- 0 1 5	- 0 1 0	1	OF	6

TEXT (If more space is required, use additional NRC Form 306A's) (17)

relatively small size. If the room were to overpressurize, the SE boundaries could have ruptured releasing steam to the steam exclusion areas resulting in an unanalyzed condition.

The contaminated material storage room provides storage area for materials that are contaminated or had the potential to become contaminated during their use. The contaminated material storage room was designated as a locked high radiation area because some radioactive material stored in the room resulted in area dose rates in excess of 1000 mrem per hour. Kewaunee Nuclear Power Plant (KNPP) Technical Specifications require areas which measure 1000 mrem per hour or greater to be locked. To relieve the overpressurization concerns, the contaminated material storage room doors were opened. The doors that were opened do not serve as a steam exclusion boundary. The doors were open at approximately 1700, on June 29 to provide a steam relief path. With the removal of the doors to the contaminated material storage room, the assumptions of the steam exclusion design in the USAR are preserved.

Prior to opening the doors, which serve as a fire boundary, a fire watch was established in accordance with the KNPP fire plan and a security officer was posted to control entry. Subsequently, to lower the area dose rate, material was removed and stored in the radioactive waste drumming room which is a locked room. This allowed the contaminated material storage room to be roped off as a high radiation area as required by KNPP Technical Specifications.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)  Kewaunee Nuclear Power Plant	DOCKET NUMBER (2)  0 5 0 0 0 3 0 5 9 2	LER NUMBER (8)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		-	0 1 1 5	-	0 1 0	0 4	OF 0 6

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

Cause of the Event

The potential for the contaminated material storage room to become overpressurized due to a rupture in the FW line or main steam line to the TDAFWP in the room has existed since initial plant operation. The cause of the event was inadequate design reviews for compartment pressurization due to small breaks. The contaminated material storage room appears to have been considered as part of a larger compartment during the design analysis.

Analysis of Event

This report is supplied in accordance with 50.73(a)(2)(ii) as an unanalyzed condition that could compromise plant safety. This event was also reported at 1653 on June 29, 1992 in accordance with 10CFR 50.72(b)(1)(ii)(a).

A Probabilistic Risk Assessment was performed to determine the probability of a high energy line break for all areas outside containment. The probability was determined to be 2.85E-7 per hour. Therefore, the probability for a small break along the small portion of the lines contained in the contaminated material storage room would be significantly lower. The FW System piping and the main steam line piping are included in the pipe thinning program. Surveillance thus far has not indicated significant degradation in either of these systems. Additional assurance of line integrity is provided due to the seismic mounting of the FW line and the steam supply line to the TDAFWP. Based on the low probability of a steam line break, the pipe thinning program

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)  Kewaunee Nuclear Power Plant	DOCKET NUMBER (2)  0 5   0 0   0 3   0 5	LER NUMBER (8)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		9 2	- 0   1 5	- 0   0	0 5	OF	0   6

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

results, and the pipes in question being seismically mounted, it is considered extremely unlikely for a small break to occur within the room. Therefore this event had little safety significance.

Corrective Actions

As a result of the unanalyzed condition for overpressurization of the contaminated material storage room, the doors to the room were opened to relieve pressure in the event of a HELB. A fire watch was established in accordance with the KNPP Fire Plan because the doors that were opened were fire doors. All material that measured 1000 mrem per hour or greater was removed from the room to allow the doors to be unlocked and open. Because the room is still considered a high radiation area, access to the area is controlled.

The doors have since been removed to prevent them from closing or being closed. Appropriate documents and drawings are being revised as necessary. In accordance with the Kewaunee Fire Plan, the fire watch will be maintained until an acceptable long term solution is determined.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)  Kewaunee Nuclear Power Plant	DOCKET NUMBER (2)  0 5 0 0 0 3 0 5 9 2 - 0 1 5 - 0 0	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
					0 6	OF	0 6

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

**Additional Information:**

Equipment Failures: None.

Similar Events: LER 91-01, "Securing of Pressure Relief Path in The Turbine Driven Auxiliary Feedwater Pump Room Results in Potential Inability to Meet High Energy Line Break Criteria"