



Commonwealth Edison
Dresden Nuclear Power Station
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Telephone 815/942-2920

November 03, 1993

GFSLTR 93-0117

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

Attached please find License Event Report 93-018-1, Docket 050237.
This revised report is being submitted to provide an update on heat
exchanger testing.

Gary F. Spedl
Gary F. Spedl
Station Manager
Dresden Station

GFS:slb

Enclosure

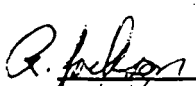

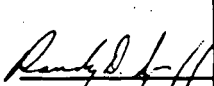
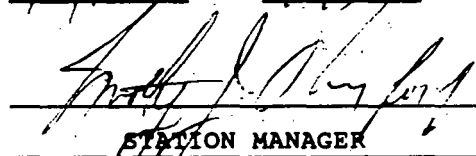
cc: J. Martin, Regional Administrator, Region III
NRC Resident Inspector's Office
File/NRC
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DAP FORM 02-08C
 SUPPLEMENTAL REPORT TO LER

DVR NO.					SYSTEM AFFECTED	
	STA	UNIT	YEAR	NO.		
D	- 12	- 2	- 93	- 018	6600	
<u>PART 1</u>			<u>TITLE OF EVENT</u>		<u>OCCURRED</u>	
			Unit 2/3 Emergency Diesel Generator Cooling Water Pump Low Flow Due to Excess Back Pressure		08/27/93	
					1145	
					DATE	
					TIME	
REASON FOR SUPPLEMENTAL REPORT						
Inclusion of further testing performed.						
<u>PART 2</u>						
ACCEPTANCE BY STATION REVIEW			 <u>10/29/93</u>		 <u>10/29/93</u>	
DATE					 <u>10/29/93</u>	
SUPPLEMENTAL REPORT APPROVED AND AUTHORIZED FOR DISTRIBUTION			 <u>10-29-93</u>		DATE	
			STATION MANAGER			

LICENSEE EVENT REPORT (LER)

Form Rev 2.0

Facility Name (1) Dresden Nuclear Power Station, Unit 2/3				Docket Number (2) 0 5 0 0 0 2 3 7				Page (3) 1 of 0 3			
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Title (4)
Unit 2/3 Emergency Diesel Generator Cooling Water Pump Low Flow due to Excess Back Pressure

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	8	2	7	9	3	9	3	--	0	1	8	--	0	1	1	0	2	8	9	3	N/A				
																					N/A				

OPERATING MODE (9) N
THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10CFR
(Check one or more of the following) (11)

POWER LEVEL (10)				20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)
				20.405(a)(1)(i)	50.38(c)(1)	50.73(a)(2)(v)	73.71(c)
				20.405(a)(1)(ii)	50.38(c)(2)	50.73(a)(2)(vii)	Other (Specify in Abstract below and in Text)
				20.405(a)(1)(iii)	50.73(a)(2)(i)	50.73(a)(2)(viii) (A)	
				20.405(a)(1)(iv)	X 50.73(a)(2)(iii)	50.73(a)(2)(ix)(B)	
			20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)		

LICENSE CONTACT FOR THIS LER (12)

NAME		TELEPHONE NUMBER			
I. Rivera		AREA CODE	Ext. 2549		
		8 1 5	9 4 2	2 9 2	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
X Yes (If yes, complete EXPECTED SUBMISSION DATE)	0	1	1 5 9 4
NO			

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

On August 27, 1993 during performance of the Unit 2/3 Emergency Diesel Generator (EDG) monthly surveillance, the required minimum EDG cooling water flow of 840 gpm could not initially be achieved. The current plant conditions were such that the Unit 2B and 2C Containment Cooling Service Water (CCSW) pumps were operating at the time. Subsequently it was observed that by reducing the CCSW flow that EDG cooling water would increase (820 to 870 gpm). On August 28, 1993 upon further review of the events that had transpired concerning the Unit 2/3 EDG cooling water flow, the Shift Engineer (SE) decided to investigate what flow could be achieved with all four Unit 2 CCSW pumps operating at rated flow. The 2A & 2D CCSW pumps were started and flows of 6270 and 6496 gpm were achieved in the CCSW loops. The Unit 2/3 EDG cooling water flow decreased to 640 gpm. Upon verification of the Final Safety Analysis Report (FSAR), it was uncertain if the Unit 2/3 EDG was operable based upon a design bases of 840 gpm at 95 degrees. The unit 2/3 EDG was declared inoperable and both dresden Station Unit 2 and 3 were entered into a 7 day Limiting Condition for Operation (LCO).

FACILITY NAME (1) Dresden Nuclear Power Station	DOCKET NUMBER (2) 0 5 0 0 0 2 3 7	LER NUMBER (6)						Page (3)		
		Year 9 3	Sequential Number -- 0 1 8	Revision Number -- 0 1						

TEXT Energy Industry Identification System (EIS) codes are identified in the text as [XX]

PLANT AND SYSTEM IDENTIFICATION:

General Electric-Boiling Water Reactor-2527 Mwt rated core thermal power.

Nuclear Tracking System (NTS) tracking code numbers are identified in the text as (XXX-XXX-XX-XXXXX)

EVENT IDENTIFICATION:

A. CONDITIONS PRIOR TO EVENT:

Unit: 2(3) Event Date: August 27, 1993 Event Time: 1145
 Reactor Mode: N(N) Mode Name: Run Power Level: 91%
 Reactor Coolant System Pressure: 990 (1006) psig

B. DESCRIPTION OF EVENT:

On August 27, 1993, with Unit 2 at 91% rated core power and Unit 3 at 100% rated core power, during the performance of Dresden Operating Surveillance (DOS) 6600-01, Diesel Generator Surveillance Test, for the Unit 2/3 Emergency Diesel Generator (EDG), the required minimum cooling water flow of 840 gpm could not be achieved. At the time, the Unit 2B and 2C Containment Cooling Service Water (CCSW) pumps were operating at approximately 3400 and 3500 gpm. Subsequently, it was observed that in reducing the CCSW flow that the EDG cooling flow would increase. The 3B, CCSW Heat Exchanger (HX) Outlet valve, MOV 2-1501-3B, was then momentarily closed to reduce flow in CCSW loop B, at which time the required minimum EDG cooling water flow of 840 gpm was achieved.

On August 28, 1993 upon further review of the events that had transpired concerning EDG cooling water flow, the Shift Engineer (SE) decided to investigate what flow could be achieved with all four Unit 2 CCSW pumps operating at rated flow. The 2A & 2D CCSW pumps were started and flows of 6270 and 6496 gpm were achieved in the CCSW loops. The Unit 2/3 EDG cooling water flow decreased to 640 gpm. Upon verification of the Final Safety Analysis Report (FSAR), it was uncertain the Unit 2/3 EDG was operable or within its design bases of 840 gpm at 95 degrees. The Unit 2/3 EDG was declared inoperable and both Dresden Station Unit 2 and 3 were entered into a 7 day Limiting Condition for Operation (LCO).

System Engineering and On-site Engineering groups were notified to investigate and evaluate the situation and conditions concerning the Unit 2/3 EDG cooling water flow.

C. APPARENT CAUSE OF EVENT:

This report is submitted in accordance with 10CFR50.73 (a)(2)(ii)(B), which requires the reporting of any operation or condition that was outside the design bases.

The apparent root cause of the event is excessive flow in the common discharge header for the CCSW and Unit 2/3 Diesel Generator Cooling Water Pumps. Both CCSW loops share a common discharge pipe with the Unit 2/3 Diesel Generator Cooling Water Pump. Operation of CCSW in excess of approximately 7000 gpm results in a sufficient amount of back pressure in

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TEXT Energy Industry Identification System (EIS) codes are identified in the text as [XX]

this line thereby significantly reducing flow through the EDG. A review of the unit EDG cooling water systems did not reveal a similar piping configuration.

D. SAFETY ANALYSIS OF EVENT:

The safety significance of this event is considered minimal for the following reasons: Significantly degraded EDG cooling flow occurs only during operation of all four CCSW pumps at flows in excess of approximately 7000 gpm. Low EDG flow becomes a concern only when the EDG is loaded. Therefore for this condition to occur requires that a loss of offsite power (loop) occur concurrently with a Loss of Coolant Accident (LOACL). Additionally it has been determined that significant conservation exist in the calculation of the minimum EDG cooling water flow such that the initial operability determination calculated that adequate cooling exists for the low flow condition (640 gpm) for inlet water temperatures less than 87°F. Pending actual EDG heat exchanger performance testing this temperature is expected to increase significantly. Therefore the likelihood of this event occurring is extremely unlikely. Additionally loss of the 2/3 EDG would not reduce the containment cooling capacity to less than 2 CCSW pumps required by the FSAR since the Unit EDG would be available to operate the CCSW pumps.

E. CORRECTIVE ACTIONS:

The immediate corrective actions consisted of a thorough operability evaluation by On-site Engineering. The calculations that were performed concluded that EDG cooling water flow of 640 gpm at a temperature of less than 87 degrees is sufficient to provide adequate heat removal of the 2/3 EDG preventing an overheating condition. Special Procedure SP 93-9-81, "Diesel Generator Jacket Water Cooler Thermal Test" was developed and performed on Unit 2, 3, and 2/3 EDGs on September 23, October 14 and October 23, 1993. Site engineering will evaluate the results and provide any recommendations, if deemed necessary, by January 15, 1994.

F. PREVIOUS OCCURRENCES:

No previous occurrence involving EDG cooling water low flow exist.

G. COMPONENT FAILURE DATA:

There were no component failures involved with this event.