



Commonwealth Edison
Dresden Nuclear Power Station
R.R. #1
Morris, Illinois 60450
Telephone 815/942-2920

November 19, 1992

CWS LTR #92-680

U.S. Nuclear Regulatory Commission
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Licensee Event Report 92-38, Docket 050237 is being submitted as required by Technical Specification 6.6, NUREG 1022 and 10 CFR 50.73 (a)(2)(ii)(B).

L. J. Hermer for 11/25/92
Charles W. Schroeder
Station Manager
Dresden Nuclear Power Station

CWS/glt

Enclosure

cc: A. Bert Davis, Regional Administrator, Region III
NRC Resident Inspector's Office
File/NRC
File/Numerical

(ZDVR/787)

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LICENSEE EVENT REPORT (LER)

Form Rev 2.0

Facility Name (1) Dresden Nuclear Power Station, Unit 2
 Docket Number (2) 0 5 10 10 10 2 3 7
 Page (3) 1 of 0 4

Title (4) Containment Cooling Service Water (CCSW) Found Outside Technical Specification Limits Due to an Inadequate Systems Interaction Analysis

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)	
10	28	92	92	038	00	11	19	92	N/A		

OPERATING MODE (9) N

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

<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.405(c)	<input type="checkbox"/> 50.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)
<input type="checkbox"/> 20.405(a)(1)(i)	<input type="checkbox"/> 50.36(c)(1)	<input type="checkbox"/> 50.73(a)(2)(v)	<input type="checkbox"/> 73.71(c)
<input type="checkbox"/> 20.405(a)(1)(ii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(vii)	<input type="checkbox"/> Other (Specify in Abstract below and in Text)
<input type="checkbox"/> 20.405(a)(1)(iii)	<input type="checkbox"/> 50.73(a)(2)(i)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)	
<input type="checkbox"/> 20.405(a)(1)(iv)	<input checked="" type="checkbox"/> 50.73(a)(2)(ii)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)	
<input type="checkbox"/> 20.405(a)(1)(v)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

Name: Nicos P. Digrindakis, Technical Staff Engineer
 Telephone Number: 8 1 5 9 4 2 - 2 19 2 10
 Ext. 3584

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)

Yes (If yes, complete EXPECTED SUBMISSION DATE) | NO
 Expected Submission Date (15) 1 2 1 8 9 2

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

At 1915 hours on October 28, 1992 with Unit 2 at 88% power, an ENC-QE- 40.1 operability evaluation performed by the Nuclear Engineering Department (NED) recommended that the 2B Containment Cooling Service Water (CCSW) pump be declared inoperable because it could not be analytically proven to meet technical specification surveillance requirements of 180 psig discharge pressure when the CCSW room cooler flow and the backup control room HVAC condenser flows are considered. A root cause analysis has shown that the cause of this event was an inadequate systems interaction analysis during the design of the Backup Control Room HVAC modification (M12-2/3-82-1). Personnel error and management deficiency contributed to this event. The Technical Specification requirement of 180 psig discharge pressure is to ensure that CCSW pressure out of the heat exchanger is maintained 20 psig greater than LPCI system pressure to avoid an unplanned radioactive release. The 2B CCSW pump would have achieved 99.2% of its required discharge pressure of 180 psig. Therefore the safety significance of this event is minimal. Immediate corrective actions restored operability to the 2B CCSW pump, while ongoing corrective actions will perform testing, on the system and provide a permanent solution to this operability issue. In the course of testing the 2C CCSW pump did not meet technical specification surveillance requirements. The occurrence is the first involving a CCSW pump being declared inoperable due to the effects of the backup control room HVAC cooling water flow.

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

D. SAFETY ANALYSIS OF EVENT:

The CCSW pumps provide service water to the Containment Cooling Heat Exchangers which are part of the Low Pressure Coolant Injection (LPCI) System. The Technical Specification requirement of the 180 psig pump discharge pressure ensures that CCSW pressure at the heat exchanger outlet is maintained 20 psig greater than LPCI System pressure, to prevent the possibility of an unplanned release of potentially radioactive effluent to the CCSW System and to the environs.

The Backup Control Room HVAC Air Conditioning Unit is normally in a standby condition. Cooling water for the unit is normally supplied by the Service Water System. An emergency source of cooling water exists from the Unit 2 CCSW loops; there is no source from the Unit 3-CCSW loops. CCSW to the Air Conditioning Unit from the A loop (pumps 2A and 2B) is supplied via valve 2/3-1599-100. CCSW from the B loop (pumps 2C and 2D) is supplied via valve 2/3-1599-101. Further, the 2B and 2C CCSW pumps are enclosed in a single room; cooling water for the room coolers is provided by the 2B and 2C CCSW pumps themselves. The 2A and 2D CCSW pumps are not enclosed in rooms.

During Technical Specification surveillance testing of the Unit 2 CCSW pumps, flow to the Backup Control Room HVAC system is not usually present, and therefore its effect is not represented in test results. NED calculated that under current conditions, the Backup Control Room HVAC system cooled by CCSW would affect the discharge pressure of the Unit 2 CCSW pumps by 3.5 psig. Applying this correction to the most current 2B CCSW pump surveillance results would yield a discharge pressure of 178.5 psig. Therefore, while meeting the required flow of 3500 gpm, the 2B CCSW pump would have achieved 99.2% of its required discharge pressure of 180 psig; thus, the safety significance of this event is considered minimal.

The 2A and 2D CCSW pumps were shown to be able to each supply adequate flow to the Backup Control Room HVAC system, and meet Technical Specification surveillance flow and pressure requirements.

The occurrence of the 2C CCSW pump not meeting its required discharge pressure is determined to be of minimal safety significance at this time, since the CCSW supply to the Backup Control Room HVAC system is currently isolated from the CCSW B loop. Further discussion of the 2C CCSW pump event will be provided in a supplement to this LER.

E. CORRECTIVE ACTIONS:

The immediate corrective action taken to close valve 2/3-1599-100, which is the CCSW supply to backup control room HVAC from CCSW pumps 2A and 2B (CCSW A loop). This isolation restored operability of 2B CCSW pump. On November 9, 1992 the Nuclear Engineering Department issued the followup actions to the operability determination of the CCSW pumps. These followup actions confirmed the results of the original ENC-GE-40.1 operability evaluation of October 28, 1992 and also provided cooling water flow rate requirements for the CCSW room coolers and the backup control room refrigeration condensing unit based on variable inlet water temperature.

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E. CORRECTIVE ACTIONS (Continued):

Future corrective actions include the performance of special testing. The testing will be used to demonstrate operability of the Unit 2 CCSW pumps with the Backup Control Room HVAC condensing unit tied-in with CCSW (at present environmental conditions). The testing will also determine the effects of the Backup Control Room HVAC on CCSW at the most limiting conditions. Included in the testing will be steps to reduce excess flow through the CCSW vault coolers (within acceptable limits) in order to increase CCSW performance. The Technical Staff will complete this testing by January 15, 1993 (237-225-92-R12-92018). The results of the test will be used to re-evaluate the operability and surveillance testing of Unit 2 CCSW.

When the 2C CCSW pump was identified as not meeting technical specification surveillance requirements, valve 2/3-1599-101 was closed to ensure operability of the 2C CCSW pump. Additional actions taken related to the 2C CCSW event will be detailed in a supplement to this LER, which will be submitted by December 18, 1992 (237-180-92-35101). This supplement will meet the 30 day reportability criteria for this event.

F. PREVIOUS OCCURRENCES:

No previous occurrences were found involving Technical Specification requirements not being met due to the effects of Backup Control Room HVAC cooling, during a review of past reportable events of the LPCI, CCSW, and Control Room HVAC systems.

G. COMPONENT FAILURE DATA:

A component failure did not occur during this event; therefore, this section is not applicable.