



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

May 19, 1992

CWS LTR #92-279

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

Licensee Event Report 92-12, Docket 050237 is being submitted as required by Technical Specification 6.6, NUREG 1022 and 10 CFR 50.73(a)(2)(ii).

*L. F. Hemen for 5/22/92*

Charles W. Schroeder  
Station Manager  
Dresden Nuclear Power Station

CWS/cfq

Enclosure

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

ZDVR/610

9205280034 920519  
PDR ADOCK 05000237  
S PDR

*JE22*

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 4

Title (4) Low Pressure Coolant Injection Pump Suction Motor-Operated Valve Design Deficiencies

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	4	2	9	0	1	0	5	1	Dresden Unit 3		0 5 0 0 0 2 4 9		

OPERATING MODE (9) N

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

20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)
20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)
20.405(a)(1)(ii)	50.36(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)(ii)	50.73(a)(2)(viii)(B)	
20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

Name: Diego Estrella, Technical Staff System Engineer Ext. 2354

TELEPHONE NUMBER: AREA CODE 8 1 5 9 4 2 - 2 9 2 10

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

Yes (If yes, complete EXPECTED SUBMISSION DATE) X | NO

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

On April 27, 1992, at 1630 hours, with Unit 2 at 70% rated core thermal power and Unit 3 at 26% rated core thermal power, Dresden Station received a notification from the Nuclear Engineering Department Mechanical & Structural (NED M&S) Group concerning operability of the Low Pressure Coolant Injection (LPCI) pump suction motor-operated valves (MOV's). As part of a Structural Qualification review related to a response to Generic Letter 89-10, NED M&S identified a design deficiency which could potentially cause the yoke for a LPCI pump suction MOV to become overstressed during a Mark I containment Loss-of-Coolant Accident occurring simultaneously with a seismic event. The overstress condition identified is beyond the Updated Final Safety Analysis Report (UFSAR) structural acceptance criteria for these MOV's. However, NED M&S informed the Station that preliminary calculations and engineering judgement provided reasonable assurance that the MOV's would remain operable. This information was documented and formally transmitted to the Station per Engineering and Construction (ENC) Quality Engineering (QE) Procedure Form 40.1. The safety significance for this event was minimal since these MOV's have been determined to be operable. Further corrective actions will be determined by NED M&S upon completion of the supporting operability assessment calculations.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)						Page (3)			
		Year	///	Sequential	///	Revision					
				Number		Number					
Dresden Nuclear Power Station	0   5   0   0   0   2   3   7	9   2	-	0   1   2	-	0   0	0   2	OF	0   4		

TEXT Energy Industry Identification System (EIIS) 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:

Low Pressure Coolant Injection (LPCI) [B0] Pump Suction Motor-Operated Valve (MOV) Design Deficiencies

A. CONDITIONS PRIOR TO EVENT:

Unit(s): 2(3)                                      Event Date: April 27, 1992                                      Event Time: 1630 Hours  
 Reactor Mode(s): N (N)                                      Mode Name(s): Run (Run)                                      Power Level(s): 70% (26%)  
 Reactor Coolant System (RCS) Pressure(s): 970 psig (943 psig)

B. DESCRIPTION OF EVENT:

On April 27, 1992, at 1630 hours, with Unit 2 at 70% rated core thermal power and Unit 3 at 26% rated core thermal power, the Nuclear Engineering Department Mechanical & Structural (NED M&S) Group contacted Dresden Station management in regards to an operability concern. As part of a Structural Qualification review related to a response to Generic Letter 89-10, NED M&S and Pacific Nuclear identified a design deficiency which could potentially cause the yoke for a LPCI pump suction MOV to become overstressed during a Mark I containment Loss-of-Coolant Accident (LOCA) occurring simultaneously with a seismic event. The overstress condition identified is beyond the Updated Final Safety Analysis Report (UFSAR) structural acceptance criteria for these MOVs. NED M&S informed the Station that preliminary calculations and engineering judgement provided reasonable assurance that the MOVs would remain operable. This information was documented and formally transmitted to the Station per Engineering and Construction (ENC) Quality Engineering (QE) Procedure Form 40.1.

C. APPARENT CAUSE OF EVENT:

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

NRC Generic Letter (GL) 89-10 requires licensees to provide the necessary assurance that safety-related MOVs will function when subjected to design-basis conditions, including abnormal events within the design basis of the plant. As a response to the GL, Commonwealth Edison Company (CECo) committed to programatically perform design-basis reviews which would consider all design criteria within the existing design-basis of the plant. As a result, NED M&S in conjunction with Pacific Nuclear is conducting Structural Qualification reviews of GL 89-10 MOVs. This review identified the LPCI pump suction MOV design deficiency.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)						Page (3)		
		Year	///	Sequential Number	///	Revision Number				
Dresden Nuclear Power Station	0   5   0   0   0   2   3   7	9   2	-	0   1   2	-	0   0	0   3	OF	0   4	

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

The original design for the LPCI pump suction valves designated them to be motor-operated valves, which were manually operated gate valves adapted to provide remote operation through the use of Limitorque valve actuators.

In 1975, as a result of tests which demonstrated the presence of new dynamic loads associated with a postulated design-basis LOCA, the NRC requested that BWR facilities with Mark I containment systems evaluate the effect of hydrodynamic loads on the containment structures. The Mark I Owners Group developed a response in the form of a Program Action Plan. Dresden Station concurred with the Action Plan. After appropriate modifications were implemented to restore original margins of safety to the containment designs at Dresden, a Plant Unique Analysis Report (PUAR) was performed to document the adequacy of the modifications. Dresden's PUAR was submitted to the NRC for a post-implementation review. In 1985, the NRC concurred with the Dresden Station PUAR verification.

However, a more detailed Structural Qualification review per GL 89-10 identified conditions which could subject the modified LPCI pump suction MOVs to stresses beyond the PUAR allowables. Preliminary calculations and engineering judgement provided reasonable assurance that the maximum yoke stress would be less than the stress required to form a plastic hinge. This justification for maintaining operability of the LPCI pump suction MOVs was formally documented per ENC-QE-40.1. NED M&S is continuing their review in order to provide recommendations for maintaining these MOVs operable.

D. SAFETY ANALYSIS OF EVENT:

The LPCI pump suction MOVs are normally open during power operation. These MOVs are interlocked open during and after a LOCA event. These MOVs are closed for maintenance and surveillance purposes only. ENC-QE-40.1, issued by NED M&S, documents justification for continued valve operability in light of the possible yoke overstress condition. During a conference call with CECO and NRC Region III, the NRC concurred with the ENC-QE-40.1 results and supported continued LPCI operability. NED M&S is in the process of concluding their operability calculations with Pacific Nuclear so as to further demonstrate operability. NED will also evaluate long term actions to enhance LPCI pump suction MOV performance. For these reasons, the safety significance of this event is considered minimal.

E. CORRECTIVE ACTIONS:

Due to the preliminary results of the NED M&S Structural Review, no immediate corrective actions were deemed necessary. NED is presently finalizing the operability calculations and is expected to complete them in July, 1992. NED will provide recommendations to the station based on these calculations (237-200-92-07601).

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)						Page (3)		
		Year	///	Sequential Number	///	Revision Number				
Dresden Nuclear Power Station	0   5   0   0   0   2   3   7	9   2	-	0   1   2	-	0   0	0   4	OF	0   4	

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

F. PREVIOUS OCCURENCES:

LER/Docket Numbers    Title

87-010-3/050237    Core Spray [BM] System "A" Analytical Piping Stresses Exceed FSAR Due to Design and Construction Errors

While performing piping system inspections, several discrepancies were found on the Unit 2 "A" Core Spray piping. These discrepancies were attributed to design and construction errors. NED indicated that the as-found condition was in excess of FSAR allowables but that operability criteria for design-basis events was met. The safety significance of this event was considered minimal. Repairs were made prior to unit startup to ensure FSAR compliance. As further corrective actions, a thorough analyses and inspections were performed for Nutech Engineering-analyzed Mark I piping systems. Field corrective work was completed in 1990 to restore FSAR safety margins to the affected systems.

88-003/050249    Flued Head Anchor Supports In Excess of FSAR Design Criteria Due to Design and Construction Deficiencies

As a result of flued head anchor (FHA) inspections, NED identified several FHAs outside of FSAR design requirements. These deficiencies were attributed to design and construction problems. However, assessment by NED found the FHAs within operability limits under all design-basis events. For these reasons, the safety significance of this event was considered minimal. Repairs were initiated to correct the FHAs deficiencies.

G. COMPONENT FAILURE DATA:

As there were no component failures, this section is not applicable.