

LICENSEE EVENT REPORT (LER)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1) Dresden Nuclear Power Station, Unit 2	DOCKET NUMBER (2) 05000237	PAGE (3) 1 OF 4
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TITLE (4)
Emergency Core Cooling Systems Suction Strainers Not In Accordance With Design Basis

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 NAME	DOCKET NUMBER
12	20	96	96	-- 022 --	00	01	17	97	Dresden Unit 3	05000249
									FACILITY NAME	DOCKET NUMBER

OPERATING MODE (9) N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)			
POWER LEVEL (10) 100	20.2201(b)	20.2203(a)(3)(i)	50.73(a)(2)(iii)	73.71(b)
	20.2203(a)(1)	20.2203(a)(3)(ii)	50.73(a)(2)(iv)	73.71(c)
	20.2203(a)(2)(i)	20.2203(a)(4)	50.73(a)(2)(v)	OTHER
	20.2203(a)(2)(ii)	50.36(c)(1)	50.73(a)(2)(vii)	(Specify in Abstract below and in Text, NRC Form 366A)
	20.2203(a)(2)(iii)	50.36(c)(2)	50.73(a)(2)(viii)(A)	
	20.2203(a)(2)(iv)	50.73(a)(2)(i)	50.73(a)(2)(vii)	
20.2203(a)(2)(v)	X 50.73(a)(2)(ii)	50.73(a)(2)(x)		

LICENSEE CONTACT FOR THIS LER (12)

NAME R. Skoglund - Design Engineer Ext. 2543	TELEPHONE NUMBER (Include Area Code) (815) 942-2920
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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).	NO						

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On December 20, 1996, a 1983 vendor calculation that evaluated the structural adequacy of the Emergency Core Cooling Systems (ECCS) suction strainers was discovered that identified the differential pressure (dP) or head loss across the ECCS suction strainers for both Unit 2 and 3 as 5.8 feet of water. This was not consistent with the Updated Final Safety Analysis Report (UFSAR) and original vendor drawings which have identified the head loss across the strainers as 1 foot of water since the original construction and operation of the plant.

This increase in head loss of 4.8 feet requires Dresden Station to take credit for containment overpressure to ensure that the ECCS pumps have adequate net positive suction head (NPSH). As a result, an emergency license amendment request was submitted on January 13, 1997.

The safety significance of this event is minimal since, given containment overpressure, the ECCS pumps would have performed their safety function.

The cause of this event is not known at this time and is under investigation. The cause and other significant corrective actions will be submitted in a supplement to this report.

NRC FORM 366A (5-92)		U.S. NUCLEAR REGULATORY COMMISSION		APPROVED BY OMB NO. 3150-0104 EXPIRES 5/31/95	
LICENSEE EVENT REPORT (LER) TEXT CONTINUATION				ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.	
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Dresden Nuclear Power Station, Unit 2		05000237		YEAR	REVISION NUMBER
				96	00
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TEXT (If more space is required, use additional copies of NRC Form 366A) (17)

PLANT AND SYSTEM IDENTIFICATION:

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

Energy Industry Identification System (EIIS) codes are identified in the text as [XX] and are obtained from IEEE Standard 805-1984, IEEE Recommendation Practice for System Identification in Nuclear Power Plants and Related Facilities.

EVENT IDENTIFICATION:

Emergency Core Cooling System Suction Strainers Not In Accordance With Design Basis

A. PLANT CONDITIONS PRIOR TO EVENT:

Unit: 2(3) Event Date: 12/20/96 Event Time: 1937
 Reactor Mode: N(N) Mode Name: Run(Refuel) Power Level: 100(0)
 Reactor Coolant System Pressure: 990(0) psig

B. DESCRIPTION OF EVENT:

This issue is reportable pursuant to 10CFR50.73 (a)(2)(ii)(B), any event or condition that resulted in the nuclear power plant being in a condition that was outside the design basis of the plant.

On December 20, 1996, a 1983 vendor calculation that determined the structural adequacy of the Emergency Core Cooling Systems (ECCS) [BM][BO] was discovered that identified the differential pressure (dP) or head loss across the ECCS suction strainers for both Unit 2 and 3 as 5.8 feet of water. This was not consistent with the Updated Final Safety Analysis Report (UFSAR) and original vendor drawings which have identified the head loss across the strainers as 1 foot of water.

Subsequent review of calculations revealed the 1983 calculation was correct and that the incorrect head loss numbers in the UFSAR and drawings had existed since the original construction and operation of the plant.

The NRC was notified by telephone on December 20, 1996 at 20:02. An operability determination was immediately started under a 24 hour limitation. At 20:00 on December 21, 1996 the NRC was notified that the operability determination concluded that the ECCS pumps were operable but degraded.

This increase in head loss of 4.8 feet requires Dresden Station to take credit for containment overpressure to ensure that the ECCS pumps have adequate net positive suction head (NPSH). As a result, an emergency license amendment request was submitted on January 13, 1997.

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The emergency license amendment request is based on using 2 psig of containment overpressure during the first ten minutes after a Loss of Coolant Accident (LOCA) and limiting suppression pool temperature and ultimate heat sink temperature to 75 degrees F. The 2 psig of containment overpressure is based on an analysis that is currently in the UFSAR but is not consistent with the Technical Specification Bases.

An additional license amendment request will be submitted to restore the ultimate heat sink and suppression pool temperatures to 95 degrees F, utilize additional containment overpressure, and to implement an updated containment analysis. This analysis will formally credit post accident containment pressure in Dresden's design basis.

The 1983 calculation was discovered during a Design Basis Review associated with a proposed modification to the ECCS suction strainers that resulted from NRC Bulletin 96-03.

The NRC Independent Safety Inspection (ISI) that was performed at Dresden in the fall of 1996 identified cases where a design basis parameter was not supported by a calculation. This event is an example of such an instance. Although these other cases were not reportable, Dresden Station is performing a Design Basis Review on 12 systems important to safety as a corrective action.

There were no structures, systems, or components inoperable at the start of this event that contributed to the event.

C. CAUSE OF EVENT:

The reason for the inaccuracy of the original one foot of water has not yet been identified. The failure to identify the 1983 calculation as correct and not consistent with the design basis appears to be related to the methodology for processing calculations that was in place at that time in that a mechanical parameter was included in a structural calculation.

The root cause of these events is not known at this time and is under investigation. The causes and other significant corrective actions will be submitted in a supplement to this report.

D. SAFETY ANALYSIS:

The health and safety of the public was not impacted by this event. No event occurred requiring ECCS injection that was challenged by the reduced NPSH available due to the increased head loss across the ECCS suction strainers.

If an event had occurred which required ECCS injection, sufficient containment overpressure would have been present to ensure that the ECCS pumps would provide adequate cooling to the core. However, the use of this overpressure was not credited on the existing design basis and requires NRC approval. This analysis will be submitted in a license amendment.

In conclusion, the safety significance of this event is minimal since the ECCS pumps would have performed their safety function.

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E. CORRECTIVE ACTIONS:

1. An emergency license amendment request has been submitted (Comed Letter JSPLTR 97-007) to take credit for containment overpressure as a means of assuring adequate NPSH during an accident. (Complete)
2. A plant modification is being processed to replace the ECCS suction strainers on both Units 2 and 3 with lower dP strainers. These new strainers are being installed in response to IE Bulletin 96-03. (Mod. No. M12-2(3)-96-006) (NTS 2371019600301)
3. A license amendment request will be submitted to restore the ultimate heat sink and suppression pool temperatures to 95 degrees F, utilize additional containment overpressure, and to implement an updated containment analysis. (NTS 237-100-96-20100.40)
4. The design basis of systems important to safety will be reconstituted to verify that the design basis of the plant is maintained. (NTS 2371219601608)
5. The root cause of this event and significant corrective actions will be reported in a supplement to this report. (NTS 2371809602201)
6. Additional corrective actions, as a result of design control issues that were identified during the ISI, were communicated in a letter to Mr. A. Bill Beach from Mr. Thomas J. Maiman, dated November 12, 1996.

F. PRIOR SIMILAR OCCURRENCES:

A search was conducted for prior similar occurrences of this event relating to the ECCS suction strainers and to the absence of supporting calculations. No previous events were found.

Further investigation for similar occurrences will be performed upon completion of the root cause determination.