

LICENSEE EVENT REPORT (LER)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS MANDATORY INFORMATION COLLECTION REQUEST: 50.0 HRS. REPORTED LESSONS LEARNED ARE INCORPORATED INTO THE LICENSING PROCESS AND FED BACK TO INDUSTRY. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (T-8 F33), 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 3

TITLE (4)

High Pressure Coolant Injection System Inoperable Due to Gland Seal Leak Off Condenser Hotwell Level Control Malfunction From A Drain Pump Start Level Switch Failure Caused by Manufacturer Design Deficiency.

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
05	04	98	98	009	00	06	03	98	N/A	N/A
									FACILITY NAME	DOCKET NUMBER
									N/A	N/A

OPERATING MODE (9)	1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § (Check one or more) (11)			
		20.2201(b)	20.2203(a)(2)(v)	50.73(a)(2)(i)	50.73(a)(2)(viii)
POWER LEVEL (10)	099	20.2203(a)(2)(i)	20.2203(a)(3)(i)	50.73(a)(2)(ii)	50.73(a)(2)(x)
		20.405(a)(1)(ii)	20.2203(a)(3)(ii)	50.73(a)(2)(iii)	73.71
		20.2203(a)(2)(ii)	20.2203(a)(4)	50.73(a)(2)(iv)	OTHER
		20.2203(a)(2)(iii)	50.36(c)(1)	X 50.73(a)(2)(v)	Specify in Abstract below or in NRC Form 366A
		20.2203(a)(2)(iv)	50.36(c)(2)	50.73(a)(2)(vii)	

LICENSEE CONTACT FOR THIS LER (12)

NAME D. S. Smith, System Engineer	TELEPHONE NUMBER (Include Area Code) (815) 942-2920 ext 3087
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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
B	BJ	LS	M040	Y					

SUPPLEMENTAL REPORT EXPECTED (14)

X	YES (If yes, complete EXPECTED SUBMISSION DATE).	NO	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
				07	17	98

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

On May 4, 1998, at 0433, while performing Dresden Operating Surveillance (DOS) 2300-09, High Pressure Coolant Injection (HPCI) Gland Seal Leak Off (GSLO) Drain Pump and Condenser Hotwell Level Control Functional Test, the hotwell drain pump exhibited erratic operation and resulted in a hotwell low level. The "HPCI Gland Seal Condenser Hotwell Lvl Hi/Lo" alarm was received and the low level in the hotwell confirmed. The HPCI system was declared inoperable and the action statement for the Limiting Condition For Operation (LCO) was entered. An ENS notification was performed at 0524 CDT. Though not operable, the system remained available while troubleshooting work packages were prepared. The symptoms and troubleshooting results indicated that the GSLO drain pump start float switch (2-2300-LCS-2) had failed in the closed position. The apparent cause of the failure was inadequate magnetic force to consistently actuate the microswitch. Corrective actions included replacement of the switches with switches inspected and tested by the Original Equipment Manufacture (OEM) to assure reliable switch operation. Testing of the new switches was completed satisfactorily and the LCO was exited at 1500 on May 12, 1998. Upon completion of the OEM evaluation of the level switch design and ComEd review, a supplemental report will be provided. The overall safety significance of this event was minimal because all other Emergency Core Cooling Systems (ECCS) were available while HPCI was inoperable.

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		YEAR 98	SEQUENTIAL NUMBER 009	REVISION NUMBER 00	

TEXT (if more space is required, use additional copies of NRC Form 366A) (17)

C. CAUSE OF EVENT:

The apparent cause of this event was a manufacturer design deficiency of the installed HPCI GSLO condenser hotwell level control switches (NRC Cause Code B). The switches failed due to a combination of insufficient magnet strength and too much travel in the float mechanism to consistently actuate the float switch microswitch. Upon completion of the evaluation of this event, a supplemental report will be provided to the NRC with the final root cause.

D. SAFETY ANALYSIS

The HPCI system is designed to provide make up coolant to the reactor in the event of a small-break Loss Of Coolant Accident. If the HPCI System was to initiate, leakoff collected by the HPCI turbine gland seal leak off system is drawn to the GSLO condenser. The condensate is then returned to the HPCI pump suction via the GSLO condenser drain pump. If the GSLO condenser hotwell level control system fails to maintain a normal level in the hotwell, then the GSLO condenser can flood and steam will no longer be drawn off of the turbine shaft glands, stop valve stem, or control valve stems. This can happen due to an abnormally high or low level in the hotwell. For the event described in this report, a low level in the GSLO condenser hotwell, the GSLO drain pump can become air bound. Once the pump is air-bound, the pump no longer maintains normal level in the condenser. Thus, even though the pump is running, no condensate is removed from the condenser hotwell, resulting in condenser flooding (high level). Continued steam leakage into the HPCI room could result in a HPCI system isolation (Group IV) due to high room temperature, rendering the system inoperable. This condition alone would not have prevented the HPCI system from initiating during a design basis accident. The safety significance of this event was minimal since all other emergency core cooling systems were available during the time that the HPCI system was inoperable.

E. CORRECTIVE ACTIONS:

The Unit 2 HPCI GSLO hotwell pump start/stop level switches were replaced with specially selected new switches provided by the OEM, and were satisfactorily tested. (Complete)

The Unit 3 HPCI GSLO hotwell pump start/stop level switches were replaced with the specially selected new switches provided by the OEM, and were satisfactorily tested. (Complete)

The parts requisition system (SI system) was updated to use the new OEM part number for the switches enhanced with stronger magnets and float stops. (Complete)

A supplemental LER will be provided to the NRC with the finalized root cause, any additional significant corrective actions and any previous occurrences. (NTS 237-180-98-00902)

F. PREVIOUS OCCURRENCES:

Previous occurrences will be provided in the supplemental LER, upon finalization of the root cause.

G. COMPONENT FAILURE DATA:

<u>Manufacturer</u> Magnetrol (dedicated by ComEd)	<u>Nomenclature</u> Tuffy Level Switch	<u>Model/ Part Number</u> 039-5000-400
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