

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-6 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 3

DOCKET NUMBER (2) 05000249

PAGE (3) 1 of 4

TITLE (4) High Pressure Coolant Injection System Declared Inoperable Due to Gland Seal Leak Off Condenser Hotwell Level Control Malfunction Caused by A Loose Lug On The Drain Pump Automatic Start Relay

Table with columns: EVENT DATE (5), LER NUMBER (6), REPORT DATE (7), OTHER FACILITIES INVOLVED (8). Includes sub-columns for month, day, year, sequential number, revision number, facility name, and docket number.

Table with columns: OPERATING MODE (9), POWER LEVEL (10), and regulatory codes (e.g., 20.2201(b), 50.73(a)(2)(i)). Includes a section for 'OTHER' with a note to specify in Abstract below or in NRC Form 368A.

LICENSEE CONTACT FOR THIS LER (12)

NAME D. S. Smith, System Engineer

TELEPHONE NUMBER (Include Area Code) (815) 942-2920 ext 3087

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

Table with columns: CAUSE, SYSTEM, COMPONENT, MANUFACTURER, REPORTABLE TO NPRDS. Two empty rows for data entry.

SUPPLEMENTAL REPORT EXPECTED (14)

YES (if yes, complete EXPECTED SUBMISSION DATE) X NO

EXPECTED SUBMISSION DATE (16)

Table with columns: MONTH, DAY, YEAR for submission date.

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

On February 19, 1998, at 0413, while performing Dresden Operating Surveillance (DOS) 2300-03, High Pressure Coolant Injection (HPCI)[BJ] System Operability Verification, the Gland Seal Leak Off (GSLO) Condenser hotwell level control system did not maintain proper level in the GSLO hotwell. The failure to control level in the GSLO Condenser hotwell has the potential, upon HPCI initiation, to result in a high level in the GSLO condenser hotwell, which renders HPCI inoperable. The root cause of the event was an original installation deficiency, in that the automatic start relay's wire hold down lug was not properly secured. The corrective actions include tightening of the loose relay lug and inspections of the Unit 2 configuration. The overall safety significance of this event was minimal because all other emergency core cooling systems were available during the time that the HPCI system was inoperable. No previous events were identified.

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FACILITY NAME (1)	DOCKET (2)	LER NUMBER (6)		PAGE (3)	
		YEAR	SEQUENTIAL NUMBER		REVISION NUMBER
Dresden Nuclear Power Station, Unit 3	05000249	98	001	00	3 OF 4

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

At approximately 0456, a third GSLO condenser high level alarm was received in the Control Room. At this time the NSO identified that the GSLO Condenser drain pump had automatically started on high level. The pump was verified not to be air bound, and the GSLO condenser level returned to normal at approximately 0500. Because the drain pump was on and the high level alarm was annunciating, it was believed that the GSLO condenser could not maintain the proper level. Thus, at 0508 the HPCI turbine stop valve was tripped closed from the Control Room and DOS 2300-03 was exited. The HPCI system was declared inoperable effective at 0413, and LCO action was entered. An ENS notification was performed at 0617 EST.

An event investigation team was formed at 0830 on February 19, 1998, to determine the cause of the failure. During troubleshooting of the event, a loose lug on the automatic start relay of the GSLO condenser drain pump was found. The loose lug showed indication of arcing, but in a condition satisfactory for use, the lug was then tightened. The findings of the investigation team were approved by Senior Station management on February 21, 1998, at 1630. The HPCI operability verification was completed and the HPCI system exited the LCO action statement at 2220.

**C. CAUSE OF EVENT:**

The root cause of this event was an original installation deficiency of the automatic start relay's wire hold down lug (NRC Cause Code B). The lug for the relay power wire was found loose, with indication of arcing. Additionally, the lug showed no "smearing" of the lug material, which would be expected if the lug had originally been tightened (because the lug is of a softer metal than the nut). Thus, indicating that the lug did not loosen over time. The intermittent performance of the GSLO drain pump is consistent with this type of failure.

**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 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. Initially, this occurrence alone would not prevent the HPCI system from functioning during a design basis accident. 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. 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 GSLO condenser drain pump automatic start relay wire lug was tightened. (Complete)

The HPCI system was successfully tested following the tightening of the loose lug. (Complete)

A Policy has been implemented to create a troubleshooting group called a High Impact Team (HIT) and a Troubleshooting Board, in order to provide for more focus and effectiveness regarding troubleshooting activities of significant recurring material condition issues. (Complete)

The Unit 2 GSLO condenser level control system will be tested and inspected, similar to the testing and inspections performed on Unit 3 following the reportable event. (249-180-98-00101)

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FACILITY NAME (1)	DOCKET (2)	LER NUMBER (6)		PAGE (3)
		YEAR	SEQUENTIAL NUMBER	
Dresden Nuclear Power Station, Unit 3	05000249	98	001	4 OF 4

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

In light of other recent events concerning the GSLO condenser level control (LERs 97-013 docket number 05000237 and 97-009 & 97-014 docket number 05000249), the station will perform further actions. These actions will provide an additional opportunity to assure that the GSLO condenser level control system is performing properly. The Station is confident that the current level control system is adequate, but the additional actions are the conservative approach to address the recent GSLO condenser level control events.

A weekly surveillance will be performed on the GSLO condenser level control system. This will allow performance data to be collected for trending purposes and to assure that the GSLO condenser level control system is performing properly. (249-180-98-00102)

The performance frequency of the surveillance cited in action 249-180-98-00102 will be evaluated to determine if the frequency should be adjusted or if discontinuation of the surveillance is appropriate. (249-180-98-00103)

The preventive maintenance program for the GSLO condenser equipment will be reviewed to verify proper system maintenance, revisions to the program will be made as necessary. (249-180-98-00104)

Evaluate alternative level switches and level switch elevations for the HPCI GSLO condenser hotwell level control and alarms. (249-180-97-01406)

**F. PREVIOUS OCCURRENCES:**

None.

**G. COMPONENT FAILURE DATA:**

None.