

LICENSEE EVENT REPORT (LER)

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

Title (4) Reactor Building Ventilation Isolation Start of SGBT System Due to Irradiated Metal on Fuel Cask

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)										
1	0	0	3	8	7	8	7	0	3	1	0	0	1	0	2	6	8	7	Dresden Unit 3	0 5 0 0 0 2 4 9
																			N/A	0 5 0 0 0

OPERATING MODE (9) N

POWER LEVEL (10) 0 9 3

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 checked="" 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 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 Jeffrey W. Boyar Telephone Number 8 1 | 5 | 9 | 4 | 2 | - | 2 | 9 | 2 | 0
 Technical Staff Nuclear Engineer (X-266)

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) X NO

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

With Dresden Unit 2 operating at 93% rated thermal power on October 3, 1987, Fuel Handlers were removing a shipping cask from the Unit 2 fuel pool. Irradiated metal had become attached to the bottom of the cask stabilizer. Radiation levels exceeded the 90 MR/hr setpoint of the refuel floor area radiation monitors. This caused an unplanned Unit 2 Reactor Building ventilation isolation and standby gas treatment (SBGT) system auto start. The Unit 3 Reactor Building ventilation was manually tripped and isolated.

In order to prevent recurrence, the cask pad and surrounding areas in both Dresden refuel pools will be inspected to identify and remove any debris. Furthermore, cask handling procedures will be modified to include an inspection of the cask pad prior to use. Lastly, a checklist for Shift Supervisor notification will be added to cask handling procedures.

This event was of minimal safety significance since the SGBT functioned as required and a Radiation Chemistry Technician was in continuous attendance at the refueling floor, ensuring that worker exposure was kept within proper limits. The last event of this type was reported by LER #86-001 on Docket #050249.

JE 2/11

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)				Page (3)		
		Year	Sequential Number	Revision Number				
Dresden Nuclear Power Station, Unit 2	0 5 0 0 0 2 3 7	8 7	- 0 3 1	-	0 0	0 2	OF	0 4

TEXT

PLANT AND SYSTEM IDENTIFICATION:

General electric boiling water reactor - 2527 Mwt rated core thermal power. Energy industry identification systems (EIS) codes are identified in the text as [XX].

EVENT IDENTIFICATION:

Reactor Building Ventilation Isolation and Auto Start of Standby Gas Treatment (SBGT) System Due to Irradiated Metal on Fuel Cask.

A. PLANT CONDITIONS PRIOR TO EVENT:

Unit: 2 Event Date: October 3, 1987 Event Time: 2100 hours
 Reactor Mode: N Mode Name: Run Power Level: 93%
 Reactor Coolant System (RCS) Pressure: 1005 psig

B. DESCRIPTION OF EVENT:

On October 3, 1987 at 2100 hours, Unit 2 was in the Run mode at 93% core thermal power (CTP) and Unit 3 was in the Run mode at 89% CTP. The Fuel Handling Department was proceeding with the removal of the R-52 spent fuel shipping cask from the Unit 2 spent fuel pool and in accordance with Special Procedure (SP) 87-9-149, Loading of the TN R-52 Spent Fuel Shipping Cask. The cask was raised to a level such that only the bottom 3 to 5 inches were submerged in the fuel pool. At this time, the Radiation Chemistry Technician (RCT) noted that the dose rate approximately 5 feet from the cask had increased to 80 millirem per hour (mR/hr). The Fuel Handling Foreman noticed that there was an indentation on the protective plastic pad suspended underneath the cask. The plastic pad was constructed of polypropylene. It was thought at this time that some type of debris had imbedded in this pad and was causing the high radiation reading. One of the two straps holding the plastic pad to the cask was released such that the pad would hang down from the cask allowing the Fuel Handlers access to the debris for removal. However, the pad did not sink as anticipated but was buoyant and stayed in approximately the same position. At this time it was decided to move the cask horizontally to allow access to the pad. The cask was moved at 2115 hours and the RCT indicated that he was receiving an increasing dose rate reading which approached 5 R/hr. The Fuel Handlers responded quickly by pushing the plastic pad farther under water which immediately reduced the dose rate. The pad was then turned over under water and the debris was identified as the tip of a dry tube plunger. This plunger was dislodged from the pad and the pad was subsequently removed from the pool without further problem.

At the time that the high dose rates were seen by the RCT on the refuel floor, 2115 hours, Operators in the Control Room noted an automatic trip of the Reactor Building ventilation [VA] system and initiation of the SBGT [BH] system due to a reading of greater than 90 mR/hr on an area radiation monitor [IL] on the refuel floor approximately 26 feet from the location of the plunger. The Unit 3 Reactor Operator then secured the Unit 3 Reactor Building ventilation system in accordance with Operating Order #1-87. There were no inoperable systems that contributed to this event.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)				Page (3)		
		Year	Sequential Number	Revision Number				
Dresden Nuclear Power Station, Unit 2	0 5 0 0 0 2 3 7	8 7	- 0 3 1	- 0 0	0 3	OF	0 4	

TEXT

C. APPARENT CAUSE OF EVENT:

The actuation of the SBT system was caused by a piece of an incore dry tube imbedding in the plastic pad attached to the bottom of the cask stabilizer. When the pad was detached from the cask, it floated so that the plunger caused the refueling floor radiation level to increase. This radiation level exceeded the 90 mR/hr setpoint of the refuel floor Area Range Monitor (ARM) causing SBT actuation. (The Technical Specification 3.2.D. value for this setpoint is ≤ 100 mR/hr.) SP 87-9-149 required that the Fuel Handlers notify the Shift Supervisor prior to removing the cask from the fuel pool. This notification is designed to alert the Control Room that the possibility exists for tripping Reactor Building ventilation and initiating the SBT system due to high radiation levels sometimes seen when casks are removed from the fuel pool. Although the Shift Supervisor was notified when the cask was placed in the pool approximately 20 minutes earlier, the required notification was overlooked by the Fuel Handling Foreman when the cask was removed from the pool. The Foreman giving his full attention to the cask movement actively contributed to this inattention to detail. This report is submitted in accordance with 10 CFR 50.73(a)(2)(iv), which requires the reporting of any event which resulted in automatic initiation of an engineered safety feature (ESF).

D. SAFETY ANALYSIS OF EVENT:

The plunger sticking to the plastic pad and being brought to the surface of the fuel pool was a safety concern from a radiological standpoint. However, an RCT was continuously monitoring dose rates at the job site. The highest dose received by any personnel on the refuel floor at the time of the incident was 42 mR. This dose was received over a 16 hour shift and is not significantly higher than what would have been expected had the incident not occurred.

The actuation of the SBT system was of minimal safety significance since the system operated as designed.

E. CORRECTIVE ACTIONS:

Upon observation of the increasing dose rates, the plastic pad was submerged and the plunger was removed. The plunger is currently being stored in the Unit 2 refuel pool.

Discussions were held with the Fuel Handling Foreman, a Fuel Handling Foreman in training, the RCT, the Unit Nuclear Station Operator, and the Shift Engineer. During these discussions, the importance of closely following procedures was emphasized. To prevent recurrence of this type of incident, the following are actions being implemented.

- Both Dresden refuel pools will be inspected for debris on the cask pad and surrounding areas. Any debris will be removed from the area.
- Fuel shipping casks (if equipped with a stabilizer or other device which requires a protective pad) should be equipped with protective pads which would prevent fuel pool debris from imbedding in the pad and subsequently being brought to the surface of the pool. These pads should not be buoyant. Cask handling procedures will be modified to include these items.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)						Page (3)		
		Year	///	Sequential Number	///	Revision Number				
Dresden Nuclear Power Station, Unit 2	0 5 0 0 0 2 3 7	8	7	-	0 3 1	-	0 0	0 4	OF	0 4

TEXT

3. The Fuel Handling Foreman should ensure that the cask pad is free from all debris prior to use. This will reduce the possibility of having hot material in the vicinity of the cask while it is in the fuel pool. Cask handling procedures will be modified to include this item.
4. A checklist for Shift Supervisor notifications will be added to cask handling procedures.

The following is a list of Dresden Fuel Procedures (DFPs) that will be modified in accordance with the items mentioned above:

- DFP 800-13, Unloading of the TN-9 Spent Fuel Shipping Cask.
- DFP 800-24, Loading and Handling of the General Electric (GE) Model 1600 Cask for Bundle Hardware Shipping.
- DFP 800-25, Handling and Loading of the NLI 1/2 Spent Fuel Shipping Cask.
- DFP 800-37, Handling and Loading of the Chem-Nuclear Systems 3-55 Cask.
- Special Procedure 87-9-149, Loading of the R-52 Spent Fuel Shipping Cask.*

* The changes will be made as permanent station procedure (DFP) is developed.

F. PREVIOUS EVENTS:

The last event of this type was reported by LER #86-001 on Docket #050249. This event involved an automatic trip of the Unit 3 Reactor Building ventilation system and auto start of SBT system due to radiography being performed on the reactor floor.

G. COMPONENT FAILURE DATA:

Not applicable.



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

October 26, 1987

EDE LTR #87-713

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

Licensee Event Report #87-031-0, Docket #050237 is being submitted as required by Technical Specification 6.6, NUREG 1022 and 10 CFR 50.73(a)(2)(iv).

E.D. Eenigenburg
Station Manager
Dresden Nuclear Power Station

EDE/kjl

Enclosure

cc: A. Bert Davis, Regional Administrator, Region III
File/NRC
File/Numerical

0055k

JE22
1/1