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Dresden Generating Station
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10 CFR 50.73



June 5, 2000

PSLTR: #00-0090

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

Dresden Nuclear Power Station, Unit 3
Facility Operating License No. DRP-25
NRC Docket No. 50-249

Subject: Licensee Event Report 2000-003-00, "Manual Scram on Loss of Vacuum from Air Binding of Condenser Tubes due to Off Gas Recombiner Train Failure"

The enclosed Licensee Event Report, which is an interim report, describes the Manual Scram on Loss of Vacuum from air binding of condenser tubes due to Off Gas Recombiner train failure. This condition is being reported pursuant to 10 CFR 50.73 (a)(2)(iv), which requires the reporting of any event or condition that resulted in a manual or automatic actuation of any Engineered Safety Feature (ESF), including the Reactor Protection System (RPS).

The following actions were taken:

Maintenance performed an interim repair of the Steam Seal Bypass Valve.

Contingency monitoring utilizing alternate indications was put into place to monitor condenser performance during the subsequent unit startup.

Operations submitted a Training Request (TR# 2000-884) requesting the Curriculum Review Committee (CRC) to provide (1) specific training on this event and the lessons learned, (2) further training on modified Steam Jet Air Ejector (SJAE) operation, and (3) utilization of alternate indications to determine Offgas system performance. The results of CRC response to this Training Request will be provided to the Operations Manager for review and acceptance.

IE22

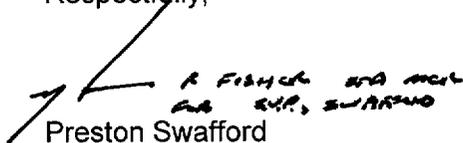
The correspondence contains the following commitments:

The Operations Manager will disposition the CRC results for Training Request # 2000-884. If no additional action will be taken on the Training Request, the Operations Manager will discuss this decision with the Station Manager for acceptance prior to closing this item.

A supplemental LER will be issued upon final root cause determination with additional corrective actions required.

If you have any questions, please contact Dale Ambler, Dresden Regulatory Assurance Manager at (815) 942-2920 extension, 3800.

Respectfully,


Preston Swafford

Site Vice President
Dresden Nuclear Power Station

Enclosure

cc: Regional Administrator – NRC Region III
NRC Senior Resident Inspector – Dresden Nuclear Power Station

LICENSEE EVENT REPORT (LER)

Estimated burden per response to comply with this mandatory information collection request: 50 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. If an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

FACILITY NAME (1) Dresden Nuclear Power Station, Unit 3	DOCKET NUMBER (2) 05000249	PAGE (3) 1 of 3
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TITLE (4)
Manual Scram on Loss of Vacuum from Air Binding of Condenser Tubes due to Off Gas Recombiner Train Failure

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MON TH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
05	04	2000	2000	003	00	06	05	2000	N/A	N/A
									N/A	N/A

OPERATING MODE (9) 1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § (Check one or more) (11)									
POWER LEVEL (10) 044	20.2201(b)	20.2203(a)(2)(v)	50.73(a)(2)(i)	50.73(a)(2)(viii)						
	20.2203(a)(i)	20.2203(a)(3)(i)	50.73(a)(2)(ii)	50.73(a)(2)(x)						
	20.2203(a)(2)(i)	20.2203(a)(3)(ii)	50.73(a)(2)(iii)	73.71						
	20.2203(a)(2)(ii)	20.2203(a)(4)	X	50.73(a)(2)(iv)	OTHER					
	20.2203(a)(2)(iii)	50.36(c)(1)		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 Timothy P. Heisterman, Licensing Engineer	TELEPHONE NUMBER (Include Area Code) (815) 942-2920 ext 3324
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COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX

SUPPLEMENTAL REPORT EXPECTED (14)				EXPECTED SUBMISSION DATE (15)			MONTH	DAY	YEAR
X	YES		NO				02	28	2001
(If yes, complete EXPECTED SUBMISSION DATE).									

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

On May 4, 2000, at 2018 hours, Operations inserted a manual reactor scram per station procedure DOA 3300-12, Loss of Vacuum, when the condensate inlet temperature to the demineralizers reached 135 degrees.

A degrading condenser vacuum during a plant startup, coupled with an increasing condensate temperature characterized this event. A manual scram was initiated per procedure, on high condensate temperature, to protect the condensate demineralizer resins.

The cause of the scram was determined to be degradation in the thermal performance of the Condensate and Offgas System to the point that adequate heat removal from the Main Condenser was challenged. The investigation identified four failures that in the aggregate establish the conditions that result in Operations taking a manual scram.

The safety significance of this event was minimal. Plant equipment response was per design. No engineered safety systems were needed in response to this event with exception of the expected automatic isolations designed to occur following a scram.

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET (2)	LER NUMBER (6)			PAGE (3)
Dresden Nuclear Power Station, Unit 3	05000249	YEAR 2000	SEQUENTIAL NUMBER 003	REVISION NUMBER 00	2 OF 3

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 (EIS) Codes are identified in the text as [XX] and are obtained from IEEE Standard 805-1984, IEEE Recommended Practice for System Identification in Nuclear Power Plants and Related Facilities.

EVENT IDENTIFICATION:

Manual Scram on Loss of Vacuum from Air Binding of Condenser Tubes due to Off Gas Recombiner Train Failure

A. PLANT CONDITIONS PRIOR TO EVENT:

Unit: 03	Event Date: 05-04-2000	Event Time: 2018
Reactor Mode: 1	Mode Name: Run	Power Level: 44 %
Reactor Coolant System Pressure: 942 psig		

B. DESCRIPTION OF EVENT:

This LER is being submitted pursuant to 10 CFR 50.73 (a)(2)(iv), which requires within 30 days after the discovery of the event, the licensee shall report any event or condition that resulted in a manual or automatic actuation of any engineered safety feature (ESF), including the reactor protection system (RPS).

At 0800 hours on May 4, 2000, Operations brought Unit 3 critical following a forced outage. At 1320 hours the control room received a 3A Offgas [SD] Condenser Low Level alarm. Being early in the unit startup, Operations discussed the low-level condition and concluded that as unit load increased, an increase in condensation would occur, restoring level in the condenser.

At 1330 hours, Operations received an Offgas holdup Volume High Temperature alarm. At 1335 hours, the Steam Jet Air Ejector (SJAE) suction valves closed due to a high temperature condition in the holdup volume. The SJAE suction valves were re-opened. At 1602 hours, the unit was placed on-line.

At 1950 hours, procedure DOA 3300-02, "Loss of Condenser Vacuum" was entered. Operations initiated a load drop to minimum recirculation flow, attempting to compensate for the loss in condenser vacuum. At 2003, with the unit at minimum recirculation flow, the Unit Nuclear Shift Operator (NSO) initiated insertion of control rods to further drop power. It was concluded that the vacuum drop could not be recaptured and that inlet temperature to the demineralizers was 133 degrees. A crew briefing was held and at 2018 hours with demineralizer inlet temperature at 135 degrees, a manual scram is inserted.

No other systems, components or structures were identified which contributed to the isolation event.

C. CAUSE OF EVENT:

The Primary Root Cause is currently indeterminate, however, material condition of the 3A SJAE appears to be the most likely cause. A primary root cause will be determined pending completion of analysis and root cause on the following equipment failures:

- A failure within the 3A Recombiner train resulted in increased steam flow through the OG system. The result was initially decreased SJAE efficiency, but over time contributed to reaching "stall flow" of the air ejector.
- The unavailability of SJAE flow indication for the modified SJAE. Subsequent testing of the redesigned instrument found it not functioning as intended (low sensitivity / response), potentially caused by a manufacturing

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Dresden Nuclear Power Station, Unit 3	05000249	2000	003	00	3 OF 3

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

design deficiency.

- The separation of the Steam Seal Bypass valve yoke.

Contributing factors appear to be knowledge deficiency regarding OG operation with the installation of the Dilution Steam modification. The training supplied was limited to presenting the dilution steam modification as a "like for like" change out, with the 3A Dilution Steam orifice plate modification performing the same function as a pressure control valve. The cause for this failure was inadequate review scope by the Curriculum Review Committee (CRC) who failed to take into consideration the need for a greater understanding of system performance to support troubleshooting of the OG system under abnormal system operation.

D. SAFETY ANALYSIS

The safety significance of this event was limited to the fact that it was a challenge to Operations, as is every situation involving a need for prompt diagnosis and decision to manually trip the reactor. The Operations decision to manually scram was proper per procedure and pre-briefed in accordance with conservative decision making philosophy. With exception of the abnormalities causing and contributing to the need for a manual scram, plant equipment response was per design and required no operator action. No engineered safety systems were needed in response to this event with exception of the expected automatic isolations designed to occur following a scram.

E. CORRECTIVE ACTIONS:

Corrective Actions Completed:

Maintenance performed an interim repair of the Steam Seal Bypass Valve.

Contingency monitoring utilizing alternate indications was put into place to monitor condenser performance during the subsequent unit startup.

Operations submitted a Training Request (TR# 2000-884) requesting the CRC to provide (1) specific training on this event and the lessons learned, (2) further training on modified SJAE operation, and (3) utilization of alternate indications to determine Offgas system performance. The results of CRC response to this Training Request will be provided to the Operations Manager for review and acceptance.

Corrective Actions to be Completed:

The Operations Manager will disposition the CRC results for Training Request # 2000-884. If no additional action will be taken on the Training Request, the Operations Manager will discuss this decision with the Station Manager for acceptance prior to closing this ATI. (ATI #28456-14)

A supplemental LER will be issued upon final root cause determination with additional corrective actions as required. (ATI #28456-22)

F. PREVIOUS OCCURRENCES:

N/A

G. COMPONENT FAILURE DATA:

N/A