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ComEd

October 17, 1996

JSPLTR #96-0189

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

Licensee Event Report 96-008, Revision 1, Docket 50-249 is attached and is being submitted pursuant to 10CFR50.73(a)(2)(iv), and which requires the reporting of any event that results in the manual or automatic actuation of any Engineered Safety Feature.

This supplemental report provides additional information pertaining to corrective actions included in the original. This correspondence does not contain any additional regulatory commitments.

If you have any questions, please contact Pete Holland, Dresden Regulatory Assurance Supervisor at (815) 942-2920, extension, 2714.

Sincerely,

J. Stephen Perry
Site Vice President
Dresden Station

JSP/JZ:pt

Enclosure

cc: A. Bill Beach, Regional Administrator, Region III
NRC Resident Inspector's Office
Illinois Department of Nuclear Safety

IE22

NRC FORM 366 (5-92) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104
EXPIRES 5/31/95

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 (MNBB 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.

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Dresden Nuclear Power Station, Unit 3	05000249	1 OF 6

TITLE (4)
Isolation Condenser Group V Isolation While Shutdown From Trapped Air Between the Inboard and Outboard Condensate Return Valves Due to Procedure 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
06	21	96	96	008	01	10	17	96	None	
									FACILITY NAME	DOCKET NUMBER

OPERATING MODE (9)	N
POWER LEVEL (10)	000

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)

	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)	X	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)(viii)(B)		
	20.2203(a)(2)(v)		50.73(a)(2)(ii)		50.73(a)(2)(x)		

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (Include Area Code)
B. T. Woodroffe, System Engineer Ext. 2270	(815) 942-2920

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
	YES (If yes, complete EXPECTED SUBMISSION DATE).	X NO				

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

On June 21, 1996, at approximately 0941, with Unit 3 in the Shutdown Mode during a forced outage, a spurious Primary Containment Group V Isolation occurred after Operations Department performed a valve lineup in accordance with Dresden General Procedure (DGP) 02-03, "Reactor Scram" to secure the Isolation Condenser (ISCO) from Standby and prior to placing the Shutdown Cooling System (SDC) in service. The Group V isolation was received in the Unit 3 Control Room after valve manipulations by the Nuclear Station Operator, in accordance with procedure DGP 02-03. The outboard condensate return isolation valve, 3-1301-3 went closed from the open position as designed. This was the only valve that moved during the isolation. All other ISCO isolation valves had already been closed in accordance with Dresden General Procedure 02-03, "Reactor Scram". The plant lineup was restored after the isolation with no abnormalities noted. The cause was an insufficient filling of the Isolation Condenser system due to inadequacies of Dresden Operating Procedure (DOP) 1300-10, "Unit 3 Isolation Condenser Fill and Vent". Corrective actions will include enhancements to DOP 1300-10. The safety significance of this event was minimal.

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:

Isolation Condenser Group V Isolation while shutdown from trapped air between the inboard and outboard condensate return isolation valves due to procedure deficiency.

A. PLANT CONDITIONS PRIOR TO EVENT:

Unit: 3 Event Date: 06/21/96 Event Time: 0941

Reactor Mode: N Mode Name: Shutdown Power Level: 0%

Reactor Coolant System Pressure: 93 psig

B. DESCRIPTION OF EVENT:

This report is being submitted in accordance with 10CFR50.73(a)(2)(iv), which requires the reporting of any event that results in the manual or automatic actuation of any Engineering Safety Feature (ESF).

On June 21, 1996, at approximately 0941, with Unit 3 in the Shutdown Mode during Forced Outage number D3F22, a spurious Primary Containment Group V Isolation occurred after Operations Department performed a valve lineup in accordance with Dresden General Procedure (DGP) 02-03, "Reactor Scram" to secure the Isolation Condenser (ISCO) from Standby and prior to placing the Shutdown Cooling System (SDC) in service. At approximately 0941 the NSO had completed closing valves 3-1301-1 and 3-1301-2, Isolation Condenser inlet steam valves, and valve 3-1301-4, Isolation Condenser inboard condensate return isolation valve. Valve 3-1301-3, Isolation Condenser outboard condensate return isolation valve was then opened. Valves 3-1301-17 and 3-1301-20, Isolation Condenser steam inlet non-condensible vent valves were verified closed after 3-1301-3 was opened. Opening the 3-1301-3 and, resultant interlocked automatic closure of AOVs 3-1301-17 and 3-1301-20 completed the process of securing the ISCO from Standby in preparation for placing the SDC System in service. Procedure DGP 02-03 contains a NOTE which notifies users that a Group V may occur if SDC is placed in service prior to securing the ISCO System. The SDC System was next to be placed in service.

The Group V isolation was received in the Unit 3 Control Room (CR), 41 seconds after the 3-1301-3 valve was opened at 0941 hrs by the Nuclear Station Operator (NSO) [Licensed Reactor Operator], in accordance with procedure DGP 02-03, following a manual SCRAM to complete unit shutdown from low power. The outboard condensate return isolation valve, 3-1301-3 went closed from the open position as designed. This was the only valve that moved during the isolation. All other ISCO isolation valves had already been closed in accordance with Dresden General Procedure 02-03, "Reactor Scram". The plant lineup was restored after the isolation with no abnormalities noted.

Shortly after the Group V Isolation occurred, a High Temperature alarm was received for the tube (reactor) side of the ISCO. This indicated that condensate was moving through the condensate line toward the closed Isolation Condenser inboard condensate return isolation valve (3-1301-4), when the Isolation Condenser outboard condensate return isolation valve (3-1301-3), was opened.

A study and subsequent report issued on September 24, 1993 on Spurious Group V Isolations reported the annubar flow element is more sensitive to flow in the reverse direction (from the Reactor) than in the forward direction (toward the Reactor) and that at lower water temperatures the effect is increased due to increased water density.

An investigation performed in September of 1995 by Dresden Engineering Staff also found that the 3-1301-4 valve will leak, and the leakage was within the limits of Appendix J. This investigation also determined that the difficult to vent section of pipe between the condensate isolation valves is prone to trapped air and affects the annubar flow element such that appreciable fluctuations in the output of Isolation Condenser condensate return Differential Pressure Indicator Switches (DPIS) 3-1349-A and DPIS 3-1349-B are evident.

Unit 3 experienced a Scram on 05/15/96 (LER 96-004/05000249) where the ISCO was utilized to control pressure and remove decay heat while isolated from the main condenser for approximately 7 hours. It is probable that this would have caused an unusually high amount of noncondensibles to accumulate between the two condensate return valves. During the subsequent reactor startup on 06/09/96, the Isolation Condenser system was filled and vented using the Demineralized water system pressure per Dresden Operating Procedure (DOP) 1300-10, "Unit 3 Isolation Condenser Fill and Vent" and this procedure normally provides an adequate system fill. This fill and vent may not have been the optimum procedure to use because an optional method of filling the system (sluicing) would provide a more pressurized method of filling the system. However the line was adequately filled with demineralized water, and vented, to raise the level in the lines above the tube bundles and temperature elements sufficiently to prevent steaming or high temperature alarms. Corrective action E.2 is intended to validate this sequence of events. Based on the results of E.2 appropriate procedural or design enhancements will be pursued.

C. CAUSE OF EVENT:

The cause of the event was a defective procedure, NRC Cause Code D, because incomplete guidance in DOP 1300-10 did not alert the operators to the requirement to perform a sluice fill and vent to the Isolation Condenser system after the prolonged operation during the Scram which occurred on 05/15/96. This allowed a surge of water toward the closed 3-1301-4 valve, when the 3-1301-3 valve was opened, due to the presence of residual air between the valves, possibly aggravated by leakage and the absence of an upstream vent path, and the sensitivity of the annubar at reduced temperature and pressure. Fluctuations in DPIS 3-1349-A and DPIS 3-1349-B then occurred of sufficient magnitude and duration to initiate the Group V Isolation.

The inadequate design of the Isolation Condenser piping which allowed one section to be difficult to adequately fill and vent was a contributing cause to the event.

D. SAFETY ANALYSIS:

The purpose of the Isolation Condenser (ISCO) is to control pressure and/or remove decay heat from the reactor inventory during periods when the normal heat sink is unavailable. The Isolation Condenser can be manually initiated. An automatic initiation occurs when reactor pressure is sustained at greater than or equal to 1070 psig for 15 seconds. Since Unit 3 was in shutdown mode and reactor pressure was less than 150 psig, operability of the Isolation Condenser was not required.

Had this event occurred at power, the consequences of a postulated accident could be mitigated by the HPCI system or the Automatic Depressurization [SB] system in conjunction with the Low Pressure Coolant Injection (LPCI) [BO] and Core Spray [BM] systems. All of the Isolation Condenser valves automatically responded as required. Also, the ISCO is not susceptible to air entrapped caused isolations at power. Therefore the safety significance of the event is considered to be minimal.

E. CORRECTIVE ACTIONS:

1. Plant Engineering will evaluate the current piping configuration and associated past operating events, to identify enhancements to the condensate return line pipe routing and recommend a modification. Replacement of the annubar flow element will also be evaluated. (2371809600801)

2. During the reactor startup from D3F22 Operations Department performed a sluice fill and vent of the Isolation Condenser system per DOP 1300-10. During the evolution it was determined by System Engineering that it was not necessary to perform monitoring of DPIS 3-1349-A and B indication to verify that trapped air is purged. DPIS 3-1349-A and B were removed from service to avoid an unanticipated Group 5 isolation. In lieu of the DPIS instruments, Reactor water level was monitored for level changes. Level changes observed were plus 8 inches Isolation Condenser to Reactor and negative 2 inches Reactor to Isolation Condenser. One inch of Reactor water level is approximately 200 gallons of water. This method was proved to be effective in removing trapped air in the study referred to in paragraph six of part B of this LER and startup of Unit 3 and placement of the Isolation Condenser into standby occurred without incident. (Complete, Ref. NTS #:2371809600802)

3. Procedural enhancements have been made to DOP 1300-10 to require sluice venting after an Isolation Condenser event such as that of 5/15/96. DOP 1300-10 also contains actions regarding removing DPIS 3-1349-A and B from service and restoring them as appropriate. (Complete, Ref. NTS #:2371809600803)

F. PREVIOUS OCCURRENCES:

LER/Docket Number	Description
95-015/0500249	On September 5, 1995, at 0424 and 2045 with Unit 3 in the refuel mode two spurious Primary Containment Group V Isolation occurred during lineup of the Isolation Condenser for Unit 3 startup. The cause was attributed to trapped air between the inboard and outboard condensate return isolation valves.
93-011/0500249	On April 21, 1993, with Unit 3 in cold shutdown, a spurious Group V Primary Containment isolation occurred during the MO3-1301-3 valve VOTES testing. The cause was attributed to the inadvertent draining of the volume between valves 3-1301-3 & 4 following a calibration surveillance.
92-22/0500249	On October 20, 1992, while performing DGP 1-1, Unit 2(3) Normal Unit Startup, the Isolation Condenser shell side water temperature increased to the point of steaming. After the reactor pressure reached 150 psig, the Isolation Condenser was manually isolated and declared inoperable. The cause of this event was attributed to the failure to backfill the volume between valves 3-1301-3 & 4 following maintenance.

G. COMPONENT FAILURE DATA:

There is no component failure identified with this event; therefore, this section is not applicable.