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June 13, 1996

JSPLTR. #96-0092

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

Licensee Event Report 96-003, Docket 50-237, Revision 1, is attached and is being submitted pursuant to 10CFR50.73(a)(2)(ii)(B), which requires the reporting of any event or condition that results in the plant being outside of the design bases.

This supplemental LER documents the cause of the event and does not contain additional commitments.

Sincerely,

J. Stephen Perry
Site Vice President
Dresden Station

cc: H. Miller, Regional Administrator, Region III
NRC Resident Inspector's Office
Illinois Department of Nuclear Safety

200098

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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 2	05000237	1 OF 5

TITLE (4)
Main Control Room HVAC Outside of Design Basis Due to Inadequate Implementation of Modification.

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
02	19	96	96	-- 003 --	01	06	13	96	Dresden	05000249
									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)		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)	X	50.73(a)(2)(ii)		50.73(a)(2)(x)		

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (Include Area Code)
Nick Konstantinou, Design Engineering Ext. 2225	(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 February 19, 1996 at 0800, it was discovered that Dresden Station emergency procedure DGA-12, "Partial or Complete Loss Of AC Power", would not allow the Control Room Heating Ventilation and Air Conditioning (HVAC) emergency Air Filtration Unit system to operate and pressurize the Control Room as required in the design bases and Updated Final Safety Analysis Report (UFSAR). In the event of coincident loss of offsite power (LOOP) and loss of coolant accident (LOCA) conditions, power is lost to the Toxic Gas analyzer which fails safe, and causes the control room to isolate without pressurization. DGA-12 failed to provide the Control Room Operator action needed to reestablish pressurization. Immediate corrective actions included revision of the emergency operating procedure to give guidance on restoration of the Control Room HVAC in the pressurization mode. The root cause is personnel error during implementation of a Control Room HVAC modification.

EVENT IDENTIFICATION:

Main Control Room HVAC Outside of Design Basis due to inadequate implementation of Modification.

A. PLANT CONDITIONS PRIOR TO EVENT:

Unit: 2,3 Event Date: 2/19/96 Event Time: 1800 (CST)

Reactor Mode: N,R Mode Name: Refuel,Run Power Level: 0,99%

Reactor Coolant System Pressure: 0,1005 psig

B. DESCRIPTION OF EVENT:

B.1 This report is being submitted in accordance with 10CFR50.73(a)(2)(ii)(B), which requires the reporting of any event or condition that results in the plant being outside of the design bases.

B.2 On February 19, 1996, at 0800(CST) while revising Dresden General Abnormal (DGA) Station emergency procedure DGA-12, "Partial or Complete Loss Of AC Power", for the station blackout modification, the System Engineer found a potential deficiency with the Control Room Air Filtration Unit (AFU) isolation steps. It was believed that the procedure as written would not provide directions to the operators to allow the Control Room AFU a to operate as required by it's design basis and the UFSAR. Station Engineering personnel then commenced to evaluate the operability of the Control Room HVAC system.

On February 20, 1996 at 1800 (CST) Engineering personnel determined that the Control Room HVAC equipment configuration along with implementing procedures did not meet the UFSAR design Basis. The engineering review identified that the Toxic Gas Analyzer was designed such that in the event of a Loss of Offsite Power (LOOP) and a Loss Of Coolant Accident (LOCA) the AFU booster fans would not then be able to operate and the AFU discharge dampers will fail closed on loss of instrument air which will not be available during a LOOP. The implementing procedures for the operation of the Control Room HVAC system under LOOP and LOCA conditions did not provide procedural guidance to realign the failed dampers and the booster fans. The design basis of the system requires that realignment of the system be performed within forty minutes of high radiation detection in the Reactor Building ventilation manifolds . Without adequate procedural guidance it would have taken the control room operators longer than the required design basis time period to realign the system. The forty minute design basis requirement to realign the system could not therefore be met.

The NARC ENS notification center was advised of the event at 1947 (EST) on February 20, 1996 pursuant to 10CFR50.72(b)(2)(iii)(D).

B.3 Toxic Gas Analyzer Operation

An engineering review identified that the toxic gas analyzer (TGA) is designed such that during LOOP and LOCA the air filtration unit dampers will fail closed and the booster fan cannot operate to pressurize the control room to +1/8 inch water column as required by FSAR sections 9.4.1, 6.4, and 15.6.5.5.2.

The present design of the Control Room HVAC Train B system is such that the TGA places the system in a recirculation mode (fail-safe) upon a toxic gas detection in the outside air path. The present control circuitry of the TGA initiates the system in a recirculation mode and disables the initiation of the AFU booster fans during a LOOP. The TGA is not connected to the essential power source; consequently, power to the TGA is lost during a LOOP. Therefore during a LOOP the TGA is not available and its control circuit will not allow the AFU booster fans to start until the circuit is manually restored. The manual restoration of the circuit will be done in conjunction with the manual opening of the isolation damper of each booster fan. The pneumatic operators of these dampers close on loss of instrument air due to LOOP.

If a coincident LOOP and LOCA DBA were to occur, power to the toxic gas analyzer would be lost and the AFU fans could not be operated.

B.4 Basis For Forty Minute AFU Start Requirement

The AFU provides radiation protection by pressurizing the control room emergency zone with 2000 cfm of filtered make up air from the outside. The AFU maintains the control room emergency zone at +1/8 inch water pressure post LOCA so that the radiation exposure to the Control Room personnel does not exceed the limits of NUREG-0800, Standard Review Plan (SRP) 6.4, or 10 CFR 50, Appendix A, General Design Criteria (GDC) 19. Halliburton NUS calculation 546Y-M-09 Rev.0 dated 11/20/87, "Dresden Control Room Dose Analysis w/90% SGTS Eff." concluded that the Control Room thyroid dose could be reduced to a value less than 30 rem by initiating the Control Room pressurization mode 40 minutes into the accident scenario. Analysis has demonstrated that the AFU must be started within 40 minutes after radiation has been detected in the Reactor Building ventilation manifolds to pressurize the control room zone and thus maintain the radiation exposures within the design limits.

B.5 DGA 12, "Partial or Complete Loss Of AC Power"

DGA 12 provides procedural guidance to the control room operators in the event of a partial or complete loss of AC power and at the time of discovery of this event this procedure did not provide procedural guidance to realign the failed dampers and the booster fans which could result under LOOP and LOCA conditions. Without adequate procedural guidance it would have taken the Control Room operators longer than the required design basis time period to realign the system.

C. CAUSE OF EVENT:

C.1 The final root cause investigation has identified that the required change to station procedures should have been performed during the installation of the B Train of Control Room HVAC modification (M12-2/3-82-1). ComEd personnel were responsible for developing procedures for Modification M12-1/2-82-1. The root cause of this event is thus personnel error, NRC cause code A.

D. SAFETY ANALYSIS:

During a LOCA DBA the control room HVAC will help maintain radiation exposures within design limits. If a LOOP would have occurred at the same time as the LOCA, the HVAC mitigating factor relative to radiation exposure to Control Room personnel would not have been available. However, if a coincident LOOP and LOCA were to occur, other factors would have been in place to mitigate against Control Room radiation levels. The Control Room HVAC automatically transfers to the recirculation mode which maintains the same air within the Control Room. Thus, the air already in the control room would be free of radionuclides released during a LOCA except for the amount brought in through inleakage. In addition, the Standby Gas Treatment (SBGT) system charcoal efficiency is higher than the 90% as required by the technical specifications. This would provide for some removal of radionuclides from the reactor building. Also, the Control Room does not have any exterior walls affected by outside wind which could affect infiltration into the Control Room. Bottled air and iodine tablets are also available to the operators to mitigate against the effects of airborne contamination in the Control Room. Therefore, the safety significance of this event is considered minimal.

E. CORRECTIVE ACTIONS:

E.1 The immediate corrective action was to revise Dresden General Abnormal procedure (DGA-12) to give guidance on restoration of the Control Room HVAC in the pressurization mode if plant conditions dictate.

E.2 A review of station procedures for operation of the control Room HVAC following design basis events will be performed to verify appropriate actions are specified. (2371809600301)

E.3 A walk down was performed by Operations Department and it was determined that the actions required to start the control room air filter unit can be done in the allowed time.

F. PREVIOUS OCCURRENCES:

92-032/050237 Inadequate 4KV Degraded Voltage Setting Resulting in Control Room Air Filtration Unit Booster Fans Inoperable due to Inaccurate Calculational Assumption.

The Nuclear Engineering Department notified Dresden Station that a calculation of the "Second Level Under voltage Setpoint" revealed an inadequate voltage supply to the A and B Train Booster Fans. Replacement of control power transformers resolved the situation, and the system was declared operable.

94-007/050237 Potentially Unanalyzed Control Room Habitability Condition due to Purge Mode.

A Systems Engineer noted that the Control Room HVAC System was operating in the "outside purge" mode. This mode provided for a supply of outside make-up air at a rate in excess of the analyzed value of 2000 scfm. Administrative controls were put in place to assure the system remains in the normal mode of operation.

95-001/050237 Inoperable Control Room HVAC Booster Fans, due to improperly sized thermal overload heater devices.

Trip of HVAC booster fan was determined to be due to improperly sized thermal overload (TOL) devices for the booster fans of both A and B of the Control Room HVAC system. The TOL devices for both Booster Fans were replaced, set properly, and tested. A review of the modification that installed the B Train of Control Room HVAC (modification M12-2/3-82-1) was performed.

G. COMPONENT FAILURE DATA:

None.