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

LICENSEE EVENT REPORT (LER)

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.

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Dresden Nuclear Power Station, Unit 2	05000237	1 OF 4

TITLE (4)
Tech Spec LCO Not Met Due to Inadequate Diesel Generator Maintenance

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
05	23	94	94	-- 014 --	01	07	28	95	None	
									FACILITY NAME	DOCKET NUMBER

OPERATING MODE (9)	N
POWER LEVEL (10)	092

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)	X	50.36(c)(2)		50.73(a)(2)(viii)(A)		
	20.2203(a)(2)(iv)	X	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)
Ismael Rivera, Jr. Ext. 2549	(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
X	EK	65	W290	Y						

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 May 23, 1994, the Unit 2/3 Emergency Diesel Generator (EDG) [EK] had been made administratively inoperable due to the service water temperatures rising above 82 degrees. During the performance of a Tech Spec required operability demonstration of the Unit 2 EDG due to the Unit 2/3 EDG being administratively inoperable, the Unit 2 EDG tripped on overspeed. The Unit 2 EDG was declared inoperable and Dresden Unit 2 entered a 24 hour Limiting Condition for Operation (LCO). System Engineering was requested to assist in the overspeed trip investigation. Operations monitored the service water temperature and once they were verified to have dropped below 83 degrees, the 2/3 EDG was demonstrated operable. Unit 2 was removed from the 24 hour LCO and continued on a 7 day LCO.

The root cause of the governor failure was attributed to the compensation valve being out of adjustment due to less then optimal preventative maintenance. The current preventative maintenance and general surveillance tracking program currently in place ensures that the governors are inspected on a 2 cycle frequency in accordance with the EDG owners group recommended maintenance program. The governor was replaced under work request 26179 and the Unit 2 EDG was successfully demonstrated operable on May 25, 1994 at 2237 hours.

PLANT AND SYSTEM IDENTIFICATION:

General Electric-Boiling Water Reactor-2527 MWT rated core thermal power.

EVENT IDENTIFICATION:

Tech Spec LCO Not Met Due to Inadequate Diesel Generator Maintenance

A. PLANT CONDITIONS PRIOR TO EVENT:

Unit: 2 Event Date: May 23, 1994 Event Time: 1828

Reactor Mode: N Mode Name: Run Power Level: 92%

Reactor Coolant System Pressure: 996 psig

B. DESCRIPTION OF EVENT:

On May 23, 1994, at 1828 hours, with Unit 2, at 92% rated core power, the Unit 2 Emergency Diesel Generator (EDG) [EK] tripped on overspeed due to a governor failure. The governor failed to return the fuel rack to its normal position following a start up. The governor maintained the fuel rack in the full open position, causing the EDG to trip on overspeed. The Unit 2 EDG was being demonstrated operable per Technical Specification 3.9.D. due to the Unit 2/3 EDG being administratively inoperable. The 2/3 EDG was administratively inoperable due to the service water intake temperatures exceeding 82 degrees. This temperature limit on the 2/3 EDG was a result of calculations performed following an August 27, 1993 incident in which plant conditions were such that the cooling water flow to the 2/3 EDG was restricted. This incident was reported under LER 2-93-018. Dresden Unit 2 entered a 24 hour Limiting Condition for Operation (LCO).

System Engineering was notified and requested to assist into the investigation of the Unit 2 EDG overspeed trip. Operations verified that the service water intake temperatures had dropped below 83 degrees and performed an operability run on the 2/3 EDG. Upon completion of the 2/3 EDG operability run, Dresden Unit 2 terminated a 24 hour Limiting Condition for Operation (LCO) at 2113 hours and remained on a 7 day LCO due to the Unit 2 EDG.

C. CAUSE OF EVENT:

This report is submitted in accordance with 10CFR50.36(c)(2), which requires notification when a limiting condition for operation is not met, and 10CFR50.73(a)(2)(i), which requires reporting of a condition prohibited by the plants Technical Specifications.

The cause of the Unit 2/3 EDG being declared inoperable was the service water intake temperatures rising above 82 degrees. Once the service water temperature dropped, the Unit 2/3 EDG was demonstrated operable and removed from the degraded equipment log at 2113 hours on May 23, 1994.

The root cause of the governor failure was attributed to the compensation valve being out of adjustment due to less then optimal preventative maintenance. Upon

the fast start of the EDG, the governor failed to properly respond by not returning the fuel rack to its normal operating position. As a result of the fuel rack maintaining a full open position, the engine speed continued to increase exceeding the overspeed trip setting of 1035 RPMs.

D. SAFETY ANALYSIS:

The safety significant of this event is considered minimal for the following reasons:

The Unit 2/3 EDG had been administratively declared inoperable due to the service water intake temperature rising above 83 degrees. However, this temperature only presents a degraded condition if the cooling water flow is degraded as well. The cooling water flow is degraded when four Unit 2 Containment Cooling Service Water (CCSW) pumps are operating concurrently with the Unit 2/3 EDG operating in a loaded condition. This scenario would only be possible with a loss of offsite power (LOOP) occurring concurrently with a loss of coolant accident (LOCA). The likelihood of this scenario is extremely unlikely. Furthermore, once the temperature was verified to be below 83 degrees, the Unit 2/3 EDG was successfully demonstrated operable as required by Tech Spec 3.9.

E. CORRECTIVE ACTIONS:

Immediately following the Unit 2 EDG trip, the System Engineer was contacted to assist with the investigation into the Unit 2 EDG overspeed trip. A review of the alarms received was conducted. A mechanical overspeed trip was verified to have had occurred, eliminating the possibility of this being a spurious actuation. The generator was verified to be intact through a bridge and megger. The overspeed trip setting was verified to be at the 1035 to 1050 RPM range. After discussing the findings thus far with MKW/Power Systems, the focus was next directed at the governor. The injector control lever was inspected and found to be intermittently sticking when taken to full open and released. The injector control arms were disconnected to determine the cause of the injector control lever sticking. The injector control arms operated as designed, therefore, the cause was determined to be the governor. The governor was replaced and the Unit 2 EDG was successfully demonstrated operable at 1828 hours on May 26, 1994.

Based on a review of maintenance history, the failed governor had maintenance last performed on 12/12/90. However, this maintenance appears to have been performed without the benefit of a detailed procedure. Dresden Electrical Surveillance (DES) 6600-01 "Diesel Generator Governor Oil Change and Compensation Adjustment" was implemented on April 16, 1991. The procedure is performed on a 2 cycle frequency in accordance with the improved maintenance program currently in place. The procedure was performed on the Unit 3 EDG during D3R12 and is scheduled for the Unit 2/3 EDG governor the week of 10/09/95. No further corrective actions deemed necessary.

During the initial investigation into the Unit 2 EDG trip, the service water intake temperatures were being monitored to ensure that the temperature was within the operable range of the Unit 2/3 EDG. Site Engineering had been contacted earlier to issue the final operability evaluation pertaining to the

Unit 2/3 EDG cooling water flow requirements. Once the water temperature was verified to have dropped below 83 degrees, the 2/3 EDG was demonstrated operable at 2113 hours on May 23, 1994. Site Engineering issued an operability determination closeout (CHRON # 0301242) which states that the 2/3 EDG is operable with the service water temperature in the 83 to 95 degrees range provided that CCSW is limited to a maximum of two pump operation. The daily operating orders were revised accordingly to incorporate the Site Engineering findings. Dresden Operating Procedures (DOP) 1500-02, 1500-03, and 6600-03 have been revised to restrict the number of CCSW pumps operating to three for a service water temperature range of 82-91 degrees and to two for a service water temperature range of 91-95 degrees during required 2/3 EDG operation. In addition, the Updated Final Safety Analysis Report (UFSAR) has been revised to reflect the current cooling water flow rates of 800 gal/minute at 95 degrees for the 2/3 EDG and 900 gal/minute at 95 degrees for the Unit 2 & 3 EDGS.

F. PREVIOUS OCCURRENCES:

There are no similar previous licensee events reports of these occurrences, however, the following is a non-reportable event.

DVR Number	Title
12-2/3-89-70	Unit 2/3 Diesel Generator Overheating and Failure to Shutdown Due to Personnel Error and Shutdown Solenoid Failure.

This event involved a valve on the cooling water supply line that had been inadvertently left closed due to personnel error. This resulted in a high engine temperature condition of the EDG, but failed to trip due to an improperly adjusted Governor Shutdown Solenoid. Among the corrective actions, development of DES 6600-01 was initiated.

G. COMPONENT FAILURE DATA:

Manufacturer	Nomenclature	Model Number	Mfg. Part Number
Woodward Governor Co	Governor	UG 8	N/A

An NPRDS search identified 4 occurrences in which the governor was the root cause of an overspeed trip.