LICENSEE EVENT REPORT (LER)

Form Rev 2.0

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

Title (4)

Emergency Source of Water to ECCS Keep Fill Valved Out, Supplement 1

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

OPERATING MODE (9): N

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIRMENTS OF 10CFR

(Check one or more of the following) (11)

POWER LEVEL (10)																	
	0	0	0		20.402(b)		20.405(c)		50.73(a)(2)(iv)		73.71(b)						
					20.405(a)(1)(i)		50.36(c)(1)		50.73(a)(2)(v)		73.71(c)						
					20.405(a)(1)(ii)		50.36(c)(2)		50.73(a)(2)(vii)		Other (Specify in Abstract below and in Text)						
					20.405(a)(1)(iii)		50.73(a)(2)(i)		50.73(a)(2)(viii) (A)								
					20.405(a)(1)(iv)	X	50.73(a)(2)(ii)		50.73(a)(2)(viii)(B)								
					20.405(a)(1)(v)		50.73(a)(2)(iii)		50.73(a)(2)(x)								

LICENSE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
Nicos P. Digrindakis, Technical Staff Engineer Ext.3584	AREA CODE 8 1 5 9 4 2 - 2 9 2 0

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 fifteen single-space typewritten lines) (16)

At 1600 hours on March 3, 1993, with Unit 2 in Refuel mode and Unit 3 in Shutdown mode, a Problem Identification Form was initiated by the Nuclear Engineering Department (NED) which stated that the emergency source of water to the Containment Cooling Service Water (CCSW) Keep Fill system was "valved out" and is currently unavailable on both Units 2 and 3. In an effort to ensure adequate cooling water flow to the Emergency Diesel Generator by valving out flow to the ECCS room coolers, the emergency source of water to the Containment Cooling Service Water Keep Fill system was inadvertently "valved out". The exact cause of the improper valve line up is still under investigation. A loss of keep fill pressure for a prolonged time could allow system drain down. If system drain down occurs a water hammer could occur which could pipe stresses to exceed pipe stress allowables identified in the FSAR. It appears, that after analyzing a water hammer event discovered in October 1981, a temporary loss of keep fill to a filled CCSW system will not result in a water hammer and therefore the safety significance of this event is minimal. Corrective actions include the installation of a new keep fill line on both Units Two and Three. These new keep fill lines will be in addition to the existing keep fill system and will be fed directly from the corresponding Unit's Emergency Diesel Generator Cooling Water Lines.

PLANT AND SYSTEM IDENTIFICATION:

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

Nuclear Tracking System (NTS) tracking code numbers are identified in the text as (XXX-XXX-XX-XXXXX)

EVENT IDENTIFICATION:

Emergency Source of Water to ECCS Keep Fill Valved Out, Supplement 1

A. CONDITIONS PRIOR TO EVENT:

Unit(s): 2(3) Event Date: March 3, 1993 Event Time 1600 Hours

Reactor Mode: N(N) Mode Name: Refuel (Shutdown) Power Level: 0%(0%)

Reactor Coolant System (RCS) Pressure: 0 psig (0 psig)

B. DESCRIPTION OF EVENT:

At 1600 hours on March 3, 1993, with Unit 2 in Refuel mode and Unit 3 in Shutdown mode, a Problem Identification Form was initiated by the Nuclear Engineering Department (NED) in accordance with Dresden Administrative Procedure (DAP) 02-27. The Problem Identification Form stated that the emergency source of water to the Containment Cooling Service Water (CCSW) Keep Fill system was "valved out" and is currently unavailable on both Units 2 and 3. The Unit Emergency Diesel Generator Cooling Pump supplies the emergency source of water to the CCSW keep fill system and water to the Emergency Core Cooling System (ECCS) room coolers on that Unit. The supply to these two systems is fed through the same line. It had been determined that the Emergency Diesel Generator Cooling Water Pump did not have the capacity to supply the ECCS room coolers and the Emergency Diesel Generator at the same time, so this connection was isolated. By isolating this line the emergency source of water to the Containment Cooling Service Water Keep Fill system was inadvertently "valved out".

C. APPARENT CAUSE OF EVENT:

This report is submitted in accordance with 10 CFR 50.73 (a)(2)(ii)(A), which requires the reporting of any event or condition that resulted in the condition of the nuclear power plant, including its principle safety barriers, being seriously degraded, or resulted in the nuclear power plant being in an unanalyzed condition that significantly compromised plant safety.

The cause of the Containment Cooling Service Water Keep Fill system being inadvertently "valved out" was an inadequate Onsite Review of the new valve line up. The Onsite Review failed to document that the new valve line up would isolate the Emergency Diesel Generator Cooling Water from the Containment Cooling Service Water Keep Fill system.

During the design phase of modifications M12-2(3)-87-54 and M12-2/3-87-21 (modifications to install flow instrumentation in the Emergency Diesel Generator Cooling Water lines) concerns were raised which revealed that if the Emergency Diesel Generator Cooling Water Pumps were required to provide cooling to both the Emergency Diesel Generator as well as the ECCS Room Coolers then the Emergency Diesel Generator would not receive adequate

cooling water flow. Based on a study performed by Nuclear Fuel Services on Low Pressure Coolant Injection (LPCI), Core Spray and High Pressure Coolant Injection (HPCI) systems operability with their respective room coolers inoperable a new valve line up was established. The new valve line up isolated Emergency Diesel Generator Cooling Water from the Reactor Building Emergency Air Coolers. The approved valve line up for isolating Emergency Diesel Generator Cooling Water to the ECCS Room Coolers also isolated Emergency Diesel Generator Cooling Water to the Containment Cooling Service Water Keep Fill line.

D. SAFETY ANALYSIS OF EVENT:

The CCSW Keep Fill system maintains the CCSW discharge piping, from the CCSW pump discharge check valves to the Containment Cooling Heat Exchanger outlet valve, in a filled and pressurized condition. The CCSW Keep Fill system receives its primary source of water from balance of plant service water and its back up supply of water from Emergency Diesel Generator Cooling Water from its corresponding Unit.

It is unlikely that service water would be lost to the keep fill system. All service water pumps feed a common header. If all service water is lost due to a loss of partial or all A/C power, emergency procedures provide guidance for starting a service water pump fed from an Emergency Diesel Generator. A loss of keep fill pressure for a long period of time could cause system drain down. System drain down would take a considerable amount of time (draining rate would be no greater than 25 gpm). If system drain down occurs, a water hammer could occur which could cause pipe stresses to exceed pipe stress allowables identified in the FSAR. System drain down is unlikely because the keep fill system is designed to supply no more than 25 gallons per minute (at a pressure equal to Service Water pressure which is approximately 100 psig) of water total to both loops of CCSW per unit. If system leakage exceeds keep fill make up, the control room would be aware of the condition due to low Containment Cooling Heat Exchanger differential pressure. Upon recognition of this condition the source of leakage would be investigated.

The CCSW Keep Fill system was installed in response to a Confirmatory Action Letter dated October 9, 1981. This Confirmatory Action Letter was issued as a result of damage sustained from a water hammer event. This damage was discovered on October 5, 1981 and it was determined that this water hammer occurred due to a condition in which the loop was inordinately drained and inadequately refilled before starting the system. Since normal operation had not previously caused water hammer damage, it was suspected that this condition was created during a recent refueling outage, when the Containment Cooling Heat Exchangers were retubed and the CCSW Loop piping was drained. It appears, that after analyzing the water hammer event of October 1981, a temporary loss of keep fill to a filled CCSW system will not result in a water hammer.

Additionally, the Nuclear Engineering Department performed an evaluation of the effects of another water hammer event on CCSW as it applies to today's piping configuration. This evaluation concluded that the CCSW system as currently configured (with the Keep Fill line valved out) could withstand a water hammer event of the same magnitude of the October 1981 event and still perform its designed safety function of delivering cooling water to the Containment Cooling Heat Exchangers.

E. CORRECTIVE ACTIONS:

To prevent a loss of keep fill to CCSW which would occur during a loss of Service Water, a new keep fill line has being installed on both Units Two and Three. These new keep fill lines are in addition to the existing keep fill system and are fed directly from the corresponding Unit's Emergency Diesel Generator Cooling Water Lines.

To address the inadequate Onsite Review, a required reading package will be assembled which documents this event and provides guidance to prevent a recurrence of this type. This required reading will be given to qualified Onsite Review participants and be completed by September 10, 1993 (237-180-93-01101S1).

F. PREVIOUS OCCURRENCES:

No previous occurrences were found involving the inadvertent isolation of emergency water supply to a CCSW keep fill system, during a review of past reportable events of the CCSW system.

G. COMPONENT FAILURE DATA:

A component failure did not occur during this event; therefore, this section is not applicable.