

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Fermi 2										DOCKET NUMBER (2) 0 5 0 0 0 3 4 1 1					PAGE (3) 1 OF 4				
TITLE (4) Engineered Safety Features Actuation Of Division 2 Emergency Equipment Cooling Water System During Fill And Vent Evolution																			
EVENT DATE (5)			LER NUMBER (6)					REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)								
MON	DAY	YR	YR	SEQUENTIAL NUMBER			REVISION NUMBER	MON	DAY	YR	FACILITY NAMES								
10	15	96	96	-	0	1	5	-	0	0	11	14	96	DOCKET NUMBER (5) 0 5 0 0 0					
OPERATING MODE (9) 5			THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR: (11)																
POWER LEVEL (10) 0 0 0			<div style="text-align: center;"> 10 CFR <u>50.73(a)(2)(iv)</u> OTHER - _____ (Specify in Abstract below and in text, NRC Form 366A) </div>																

LICENSEE CONTACT FOR THIS LER (12) Andrew V. Antrassian - Compliance Engineer										TELEPHONE NUMBER AREA CODE 313 NUMBER 586-1856	
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)											
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDs	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDs		
SUPPLEMENTAL REPORT EXPECTED (14)					EXPECTED SUBMISSION DATE (15)		MONTH	DAY	YEAR		
[] YES (If yes, complete EXPECTED SUBMISSION DATE)					[X] NO						

On October 15, 1996, at 0905 hours, with the plant in Operational Condition 5 for the Fifth Refueling Outage (RFO5), an Engineered Safety Features (ESF) actuation of the Division 2 Emergency Equipment Cooling Water (EECW) System occurred during a fill and vent evolution of the portion of this system located in the drywell. A briefing was conducted prior to commencing the evolution in which it was agreed to manually initiate Division 2 EECW/ Emergency Equipment Service Water (EESW) in order to avoid automatic initiation of these ESF systems. Partial fill and vent of EECW system piping is not specifically addressed by plant procedures. During the evolution, a Division 2 EECW/EESW automatic initiation signal was received in response to a valid low differential pressure condition between the system supply and return headers. It is believed that this condition resulted because the Division 2 EECW piping in the drywell was not vented. The cause of this event is considered personnel error. The operating shift did not effectively control the fill and vent evolution and the briefing conducted prior to the evolution was not sufficiently detailed. In addition, the Control Room Log entry made prior to the evolution did not address the potential for an automatic EECW/EESW initiation. Corrective actions include training for licensed and non-licensed operators, discussion of the lessons learned with on-shift Nuclear Shift Supervisors, and development of an Operations evolution guide to assist in coordination and proper sequencing of events.

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Initial Plant Condition:

Operational Condition: 5 (Refueling)
 Reactor Power: 0 Percent
 Reactor Pressure: 0 psig
 Reactor Temperature: 88 degrees Fahrenheit

Description of the Event:

On October 15, 1996, at 0905 hours, with the plant in Operational Condition 5 for the Fifth Refueling Outage (RFO5), an Engineered Safety Features (ESF) actuation of the Division 2 Emergency Equipment Cooling Water (EECW) [BI] System occurred during a fill and vent evolution of the drywell portion of this system. A four-hour non-emergency notification was made to the Nuclear Regulatory Commission regarding this event at 1253 hours in accordance with 10CFR50.72(b)(2)(ii).

On October 15, 1996, at approximately 0800 hours the Nuclear Shift Supervisor (NSS), Nuclear Assistant Shift Supervisor (NASS), Control Room Nuclear Supervising Operator (CRNSO), and Reactor Building Nuclear Supervising Operator (RBNSO) conducted a brief for a fill and vent evolution of the drywell piping of Division 2 EECW. The Division 2 EECW piping outside the drywell was already filled and vented. Partial fill and vent of EECW system piping is not specifically addressed by plant procedures.

During the briefing it was acknowledged that the evolution could result in automatic initiation of Division 2 EECW/Emergency Equipment Service Water (EESW) [BI]. It was agreed to isolate Division 2 EECW from its normal Reactor Building Closed Cooling Water (RBCCW) [CC] System supply and to manually initiate Division 2 EECW/EESW for the fill and vent evolution in order to avoid automatic initiation of these ESF systems. The plan, as discussed in the brief, was to manually initiate Division 2 EECW/EESW, fill the drywell portion of EECW system piping by throttling open the drywell supply valve, vent the system at high points in the drywell and in the torus room, and finally to throttle open the drywell return valve.

Four Nuclear Power Plant Operators (NPPOs) were assigned activities for this evolution, however, none of the NPPOs were included in the brief. One NPPO was assigned to manipulate the EECW drywell supply valve, return valve, and drywell supply piping vent valve located in the torus room. One NPPO was assigned to monitor the Division 2 EECW Makeup Tank pressure and level. Two NPPOs were assigned to manipulate EECW vent valves located in the drywell.

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At 0821 hours, Division 2 EECW/EESW was manually initiated. The valves which automatically close to isolate non-essential loads upon EECW initiation were restored. A Control Room Log entry was made at this time, however, it stated only that Division 2 EECW/EESW was manually initiated to support fill and vent of EECW drywell piping. At approximately 0830 hours, the fill and vent evolution began. The NPPO in the torus room throttled open the drywell supply valve and subsequently obtained a satisfactory vent from the vent valve in the torus room.

The NPPOs assigned to vent the drywell piping were also assigned other work activities in the drywell which they performed before the EECW venting. Prior to beginning the EECW venting, these NPPOs left the drywell because their assigned accumulated dose limits were being approached. The NPPO in the torus room was not aware that the venting in the drywell had not been performed and understood his instructions to be to proceed to the drywell return valve and throttle it open after satisfactorily completing the venting in the torus room. The NPPO in the torus room proceeded to the drywell return valve and throttled it open.

At 0905 hours, a valid automatic initiation signal was received for Division 2 EECW/EESW in response to a low differential pressure condition between the system supply and return headers. Division 2 EECW/EESW was already in operation due to the manual initiation. The automatic initiation signal resulted in the closure of three Division 2 EECW valves which isolate non-essential loads. These valves were subsequently restored.

During the initial investigation of this event there were discussions related to whether the event could be considered a planned evolution based on the briefing that was conducted prior to beginning the evolution, and because manual initiation of Division 2 EECW/EESW was for the purpose of avoiding automatic initiation. However, due to there being no procedural guidance regarding the partial system fill and vent evolution, and because the log entry made prior to the evolution lacked sufficient detail to indicate that the evolution sequence of events could be considered preplanned, it was determined that this event would be reported. Consequently, this event is being reported as an unplanned ESF actuation in accordance with 10CFR50.73(a)(2)(iv).

Cause of the Event:

The Division 2 EECW/EESW automatic initiation signal was in response to a valid low differential pressure condition between the system supply and return headers. It is believed that this condition resulted because the Division 2 EECW piping in the drywell was not vented.

The cause of this event is considered personnel error. The operating shift did not effectively control the fill and vent evolution. The briefing conducted prior to the evolution was not sufficiently detailed, did not include a clear sequence of events to be followed, did not include all personnel involved in the evolution, and did not address contingencies in the event an automatic initiation signal was received. In addition, the Control Room Log entry made prior to the evolution did not address the potential for an automatic EECW/EESW initiation.

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Analysis of the Event:

This event is considered of minimal safety significance. The EECW and EESW Systems responded as expected to the low differential pressure condition and all components actuated properly. The safety-related function of the EECW System is to transfer accident heat loads from ESF equipment to the EESW System via the EECW Heat Exchangers. The EECW System also provides an intermediate loop between potentially contaminated reactor auxiliary systems and the EESW System. The safety-related function of the EESW System is to transfer heat loads from the EECW System to the ultimate heat sink. Both systems were available throughout this event to provide these safety-related functions.

Corrective Actions:

This event will be discussed in Training Cycle 97-01 for licensed and non-licensed operators. The training will emphasize the need for proper pre-evolution briefings, logging requirements for expected ESF actuations, and management expectations.

The involved NSS will discuss the lessons learned from this event with all on-shift NSSs by November 30, 1996.

An Operations evolution guide will be developed by December 31, 1996. This guide will assist in ensuring that personnel involved in a particular evolution are coordinated and aware of the proper sequence of events.

Additional Information:

A. Failed Components

None

B. Previous LERs on Similar Problems

In the past ten years, previous occurrences of ESF actuations of the EECW System in response to a low differential pressure condition have been reported in LER 92-006, LER 87-051, and LER 87-038. None of these events involved personnel error associated with fill and vent evolutions.