

CATEGORY 1

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ACCESSION NBR: 9812140132 DOC.DATE: 98/12/08 NOTARIZED: NO DOCKET #
 FACIL: 50-315 Donald C. Cook Nuclear Power Plant, Unit 1, Indiana M 05000315
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 RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 98-039-01 re EOP step conflicts with small break LOCA analysis. LER 98-039-00 has been canceled. With 981208 ltr.

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Indiana Michigan
Power Company
Cook Nuclear Plant
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Bloomington, IN 47406
317-465 5501



December 8, 1998

United States Nuclear Regulatory Commission
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Washington, DC 20555

Operating License DPR-58
Docket No. 50-315

Document Control Manager:

In accordance with the criteria established by 10 CFR 50.73 entitled Licensee Event Report System, the following report is being submitted:

LER 315/98-039-01, "Retraction - Emergency Operation Procedure Step Conflicts with Small Break LOCA Analysis".

No commitments were identified in this document.

Sincerely,

A handwritten signature in cursive script, reading "John R. Sampson".

J. R. Sampson
Site Vice President

/mbd
Attachment

c: J. L. Caldwell (Acting), Region III
R. P. Powers
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9812140132 981208
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NRC Form 366 (6-1998)		U.S. NUCLEAR REGULATORY COMMISSION				APPROVED BY OMB NO. 3150-0104 EXPIRES 06/30/2001													
LICENSEE EVENT REPORT (LER) (See reverse for required number of digits/characters for each block)										<small>ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS MANDATORY INFORMATION COLLECTION REQUEST: 50.0 HRS. REPORTED LESSONS LEARNED ARE INCORPORATED INTO THE LICENSING PROCESS AND FED BACK TO INDUSTRY. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (T-6 F33), 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</small>									
FACILITY NAME (1) <div style="text-align: center;">Cook Nuclear Plant Unit 1</div>										DOCKET NUMBER (2) <div style="text-align: center;">05000-315</div>				PAGE (3) <div style="text-align: center;">1 of 2</div>					
TITLE (4) <div style="text-align: center;">Retraction - Emergency Operating Procedure Step Conflicts with Small Break LOCA Analysis</div>																			
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 Cook Unit 2				DOCKET NUMBER 05000-316						
08	24	1998	1998	- 039 -	01	12	08	1998	FACILITY NAME				DOCKET NUMBER						
OPERATING MODE (9)		5		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)															
POWER LEVEL (10)		00		20.2201 (b)				20.2203(a)(2)(v)				50.73(a)(2)(i)		50.73(a)(2)(viii)					
				20.2203(a)(1)				20.2203(a)(3)(i)				X 50.73(a)(2)(ii)		50.73(a)(2)(x)					
				20.2203(a)(2)(i)				20.2203(a)(3)(ii)				50.73(a)(2)(iii)		73.71					
				20.2203(a)(2)(ii)				20.2203(a)(4)				50.73(a)(2)(iv)		OTHER					
				20.2203(a)(2)(iii)				50.36(c)(1)				50.73(a)(2)(v)		Specify in Abstract below or on NRC Form 366A					
				20.2203(a)(2)(iv)				50.36(c)(2)				50.73(a)(2)(vii)							
LICENSEE CONTACT FOR THIS LER (12)																			
NAME <div style="text-align: center;">Mr. Larry Weber, Operations Manager</div>										TELEPHONE NUMBER (Include Area Code) <div style="text-align: center;">616/465-5901 X2443</div>									
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																			
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX									
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 August 24, 1998, with both units in Cold Shutdown, a review of the current revision of Emergency Operating Procedure (EOP), "Transfer to Cold Leg Recirculation," identified a step that did not appear to satisfy an assumption in the Westinghouse Small Break Loss of Coolant Accident (SBLOCA) analysis at the point in time when high head safety injection (SI) pump flow would be delivered to the reactor coolant system (RCS). The EOP step required the SI pumps to be turned off if RCS pressure exceeded 1250 psig (1000 psig for adverse containment condition) after isolation of the pump minimum flow line returning SI pump flow to the refueling water storage tank (RWST). The SI pumps would be turned off to prevent pump damage due to inadequate pump minimum flow. This would leave only the centrifugal charging pumps injecting to the RCS during a SBLOCA with high RCS pressure. The Westinghouse analysis assumes SI pump injection to the RCS whenever RCS pressure is less than 1350 psig. When RCS pressure instrument uncertainty was applied, the EOP step to terminate SI was considered capable of placing the plant in a condition outside of the safety analysis during a SBLOCA that allowed RCS pressure to remain high but less than 1350 psig. An ENS notification was made on August 24, 1998, at 1705 hours EDT in accordance with 10CFR50.72(b)(2)(i). An interim LER was submitted on September 22, 1998, in accordance with 10CFR50.73(a)(2)(ii). Operations provided Westinghouse with details of the use of the EOP step and requested an analysis of the significance of the condition. On November 4, 1998, Westinghouse provided an assessment based on its analysis. Our review of the assessment confirmed that by use of the EOPs the plant would not have been placed in a condition where the SI pump termination criterion would have been reached. Therefore, the plant was within its analyzed basis, and LER 315/98-039-00 is being retracted.																			

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER(2)	LER NUMBER (6)				PAGE (3)
		YEAR	SEQUENTIAL NUMBER		REVISION NUMBER	
		1998	--	039	--	01

Cook Nuclear Plant Unit 1

05000-315

2 of 2

TEXT (If more space is required, use additional copies of NRC Form (366A) (17))

On August 24, 1998, with both units in Cold Shutdown, a review of the current revision, Revision 5, of Emergency Operating Procedure (EOP) 01/02-OHP 4023.ES-1.3, "Transfer to Cold Leg Recirculation," identified a step that did not appear to satisfy an assumption in the Westinghouse Small Break Loss of Coolant Accident (SBLOCA) analysis at the time when high head safety injection (SI) pump flow would be delivered to the reactor coolant system (RCS). The EOP step required the SI pumps to be turned off if RCS pressure exceeded 1250 pounds per square inch gage (psig), 1000 psig for adverse containment conditions, after isolation of the pump minimum flow line returning SI pump flow to the refueling water storage tank (RWST). The SI pumps would be turned off to prevent pump damage due to inadequate pump minimum flow. The normal minimum flow path to the RWST cannot be used during a LOCA because it is undesirable to pump radioactively contaminated water from the containment sump to the RWST. Therefore, prior to switching SI pump suction from the RWST to the containment sump, as directed by the EOP, the SI pump minimum flow lines to the RWST would be isolated. The SI pumps would then have to rely on RCS injection flow to satisfy the requirement for adequate pump minimum flow of approximately 70 gallons per minute. This flow rate is determined by actual RCS pressure and the physical characteristics of the pumps.

Indicated RCS pressure was chosen as the procedural criterion for operators to determine if the SI pumps needed to be stopped. Earlier revisions of the procedure had directed the pumps to be stopped at various indicated RCS pressures between 1000 psig and 1630 psig. Some revisions of the procedure also used indicated low SI flow to direct stopping the pumps. Due to instrument uncertainty the indicated values could have represented higher or lower actual values. During a SBLOCA, pressure in containment could be high enough to have an adverse effect on RCS pressure instruments. In such an adverse containment condition, instrument uncertainty could be greater.

Turning off the high head SI pumps would leave only the centrifugal charging pumps injecting to the RCS during a SBLOCA with persistent high RCS pressure. The Westinghouse SBLOCA analysis assumes high head SI pump injection to the RCS whenever RCS pressure is less than approximately 1350 psig during a SBLOCA. When instrument uncertainty was applied, the EOP step to terminate high head SI was considered capable of placing the plant in a condition outside of the safety analysis during a SBLOCA that allowed RCS pressure to remain high, but less than 1350 psig. An ENS notification was made on August 24, 1998, at 1705 hours EDT in accordance with 10CFR50.72(b)(2)(i). An interim LER was submitted on September 22, 1998, in accordance with 10CFR50.73 (a)(2)(ii).

Operations provided Westinghouse with details on the use of the EOP step and requested an analysis of the significance of the condition. On November 4, 1998, Westinghouse provided its assessment of the condition based on its analysis. The Westinghouse assessment examines whether a design basis SBLOCA for the Cook Nuclear Plant would lead to conditions required by the various revisions of the procedure for SI termination. To assess the conditions that could be presented by control room indications following a postulated SBLOCA, design basis simulations using the MAAP4 computer code were used. The effects of plant specific uncertainties were included in the assessment. A range of SBLOCA sizes, down to very small breaks that would result in RCS repressurization, was considered. The potential for operation without SI flow, with RCS pressures as low as 835 pounds per square inch absolute, was considered. This represents the lowest adverse containment RCS pressure when instrument error is considered, without the error due to excess radiation exposure. Excess radiation was not an expected condition. The assessment concludes that no design basis SBLOCA, requiring one or more SI pumps, would be deprived of flow as a result of a SBLOCA. The conclusion is cited as applicable for all past operation and also as applying to a proposed future revision of the EOP which would call for stopping the SI pumps when the indicated RCS pressure is 1250 psig (1200 psig for adverse containment). Therefore, the plant was within its analyzed condition of operation, and LER 315/98-039-00 is being retracted.