

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Cooper Nuclear Station	DOCKET NUMBER (2) 0 5 0 0 0 2 9 8	PAGE (3) 1 OF 0 3
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TITLE (4) **Actuation of ESF Group Isolations Subsequent to a Planned Manual Scram Due to Momentary Low Reactor Vessel Water Level**

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	5	8	8	8	8	8	0	0	4	0	0	0	0	0	0	0	5	0	0	0

OPERATING MODE (9) N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § (Check one or more of the following) (11)									
POWER LEVEL (10) 0, 3, 0	<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.405(c)	<input checked="" type="checkbox"/> 50.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)						
	<input type="checkbox"/> 20.405(a)(1)(i)	<input type="checkbox"/> 50.36(c)(1)	<input type="checkbox"/> 50.73(a)(2)(v)	<input type="checkbox"/> 73.71(c)						
	<input type="checkbox"/> 20.405(a)(1)(ii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(vi)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)						
	<input type="checkbox"/> 20.405(a)(1)(iii)	<input type="checkbox"/> 50.73(a)(2)(i)	<input type="checkbox"/> 50.73(a)(2)(vii)(A)							
	<input type="checkbox"/> 20.405(a)(1)(iv)	<input type="checkbox"/> 50.73(a)(2)(ii)	<input type="checkbox"/> 50.73(a)(2)(vii)(B)							
	<input type="checkbox"/> 20.405(a)(1)(v)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(ix)							

LICENSEE CONTACT FOR THIS LER (12)

NAME Donald L. Reeves, Jr.	TELEPHONE NUMBER 4 0 2 8 2 5 - 3 8 1 1
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COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS

SUPPLEMENTAL REPORT EXPECTED (14)

<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE) <input checked="" type="checkbox"/> NO	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

On March 5, 1988, at 4:31 A.M. an automatic actuation of Group Isolations 2, 3, and 6 (Primary Containment, Reactor Water Cleanup and Secondary Containment including initiation of the Standby Gas Treatment System) occurred due to a momentary "shrink" in reactor vessel water level following a planned manual scram. A plant shutdown, in preparation for the 1988 Refueling Outage, was in progress. Just prior to the scram, reactor thermal power was approximately 20 percent. The water level transient which occurred is one which can typically be expected upon a scram (either AUTO or MANUAL) from power. Prior to manually scrambling the reactor, water level had been raised 10 inches above the normal level to 45 inches. This action was taken, in anticipation of the expected momentary "shrink", so as to avoid these unnecessary actuations. However, the ensuing water level "shrink" from the scram was of sufficient magnitude (33 1/2 inches) that the low level reactor water level sensors were tripped.

Reactor vessel water level was immediately recovered through operation of the normal Feedwater System and plant systems were restored to their normal condition. As previously noted, in spite of this attempt to avoid Engineered Safety Features (ESF) actuations by raising reactor vessel water level, the magnitude of the expected transient resulted in actuation of the low reactor vessel water level trip sensors, anyway. This situation will be evaluated further in an effort to determine additional actions that can reasonably be taken to avoid these unnecessary ESF actuations.

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TEXT (If more space is required, use additional NRC Form 365A's) (17)

A. Event Description

Immediately following a planned manual reactor scram from approximately 20 percent power at 4:31 A.M. on March 5, 1988, in preparation for the 1988 refueling outage, a momentary reactor vessel water level "shrink" of approximately 33 1/2 inches occurred, resulting in actuation of Groups 2, 3, and 4 Isolations (Primary Containment, Reactor Water Cleanup, and Secondary Containment including initiation of the Standby Gas Treatment System). Prior to the manual scram, in an effort to avoid these unplanned Engineered Safety Features (ESF) actuations due to the normally expected "shrink" in water level when the reactor is scrambled from low power, reactor vessel level had been increased from the nominal value of 35 inches, as monitored on the narrow range recorder, to approximately 45 inches. However, upon manually scrambling the reactor, the ensuing water level "shrink" was of a sufficient magnitude that the low reactor vessel water level setpoint was reached.

B. Plant Status

In operation at approximately 20 percent power, conducting a plant shutdown in preparation for commencement of the 1988 Refueling Outage.

C. Basis for Report

Unnecessary actuations of Engineered Safety Features (ESF) (Group Isolations), reportable in accordance with 10CFR50.73(a)(2)(iv).

D. Cause of Event

Plant Design. A momentary reactor vessel water level decrease (shrink) of the magnitude experienced is a normal operational water level transient which can be expected upon reactor scram from power.

E. Safety Significance

None. The Group Isolations, actuated as a result of the reactor vessel water level transient, performed as designed.

F. Corrective Action

Reactor vessel water level was immediately recovered through operation of the normal Feedwater System. Additionally, Group Isolations were reset, valves which had been automatically closed were reopened, normal Secondary Containment ventilation was restored, and the Standby Gas Treatment System was returned to a standby condition. Scram recovery activities, already initiated due to the manual scram, were continued and a plant cooldown was commenced, as scheduled.

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TEXT (If more space is required, use additional NRC Form 306A's) (17)

As previously noted in spite of this attempt to avoid ESF actuations by raising reactor vessel water level 10 inches, the magnitude of the expected transient resulted in actuation of the low reactor vessel water level trip sensors, anyway. This situation will be evaluated further in an effort to determine additional actions that can reasonably be taken to avoid these unnecessary ESF actuations.

G. Prior Similar Events

Water level transients of the nature described can be expected during most automatic (or manual) scrams from any significant power level. With respect to Licensee Event Reporting, actuation of the Groups 2, 3, and 6 Isolations are typically noted in the associated LERs as additional ESF actuations. Reactor scram data for all scrams that have occurred since 1986 were reviewed to identify those situations where these ESF actuations occurred. Tabulated below is a list of those scrams by their LER identifier. (Scrams from power that were initiated due to a low reactor vessel water level condition are not included in this listing.)

LER NUMBER	TRANSMITTAL DATE	TYPE OF SCRAM	COMMENTS
86-016	9/12/86	Auto	Group Isolations not specifically addressed.
86-022	10/30/86	Manual	Conditions virtually identical to those which existed for this LER (LER 88-004).
87-005	2/9/87	Auto	Group Isolations not specifically addressed.
87-011	6/12/87	Auto	The second set of trips noted in this LER were due to an actual low level condition, not an expected "shrink".
87-014	6/15/87	Manual	
88-002	2/26/88	Auto	