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March 10, 2000

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 315/1999-005-01, "Reactor Protection System Actuations During Testing Not Previously Reported."

The following commitment was identified in this submittal:

- Unit 1 procedure 1 EHP 4030 STP.386, "Multiple Rod Drop Measurements," will be revised prior to the next performance of the procedure to incorporate Reactor Protection System actuation information.

Should you have any questions regarding this correspondence, please contact Mr. Robert C. Godley, Director, Regulatory Affairs, at 616/465-5901, extension 2698.

Sincerely,

M. W. Rencheck  
Vice President – Nuclear Engineering

/srd  
Attachment

c: J. E. Dyer, Region III  
R. C. Godley  
D. Hahn  
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R. P. Powers  
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Records Center, INPO  
NRC Resident Inspector

IE22

**LICENSEE EVENT REPORT (LER)**

(See reverse for required number of digits/characters for each block)

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-8 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

FACILITY NAME (1) Donald C. Cook Nuclear Plant Unit 1	DOCKET NUMBER (2) 05000-315	PAGE (3) 1 of 3
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TITLE (4)  
Reactor Protection System Actuations During Testing Not Previously Reported

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	12	1994	1999	-- 005 --	01	03	10	2000	FACILITY NAME	DOCKET NUMBER	

OPERATING MODE (9) 3	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)	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)	X 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 n NRC Form 366A						
	20.2203(a)(2)(iv)	50.36(c)(2)	50.73(a)(2)(vii)							

LICENSEE CONTACT FOR THIS LER (12)									
NAME M. B. Depuydt, Regulatory Affairs						TELEPHONE NUMBER (Include Area Code) 616 / 465-5901, x1589			

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)		
YES (If Yes, complete EXPECTED SUBMISSION DATE)	X	NO	MONTH	DAY	YEAR		

**Abstract (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)**  
 On February 11, 1999, during a review of industry Licensee Event Reports submitted by other utilities for actuations of the Reactor Protection System (RPS) during rod drop surveillance testing, Engineering personnel questioned the reportability of past Donald C. Cook Nuclear Plant RPS actuations during rod drop surveillance testing. In the course of performing rod drop testing, the RPS was manually actuated to open the reactor trip breakers when unanticipated test equipment problems occurred during the surveillance. These RPS actuations should have been reported in accordance with 10 CFR 50.72(b)(2)(ii) and 10 CFR 50.73(a)(2)(iv) as conditions that result in a manual or automatic actuation of any Engineered Safety Feature (ESF), including the Reactor Protection System, but they were not reported. An ENS notification was made on February 16, 1999, at 1808 hours in accordance with 10 CFR 50.72(b)(2)(ii), and this LER is submitted in accordance with 10 CFR 50.73(a)(2)(iv).

The causes of this event were a lack of knowledge of NRC reportability requirements related to unplanned ESF and RPS actuations during surveillance testing, and surveillance procedure inadequacies. Training on 10 CFR 50.72 and 10 CFR 50.73 reportability requirements has been provided to Operations and is being considered for additional plant personnel. Administrative procedures were revised to provide a requirement to evaluate procedure changes for the possibility of a manual actuation of an ESF, including the RPS. Rod drop surveillance procedures will be revised to allow a manual actuation of RPS when specific types of problems occur during testing.

It has been determined that there is no safety significance due to these manual actuations of the RPS or the delay in reporting the events. When unanticipated problems were encountered during the rod drop surveillance, manual actuation of the RPS was a conservative action and was not in response to adverse plant conditions.

**LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION**

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		1999	--	005	--	

Donald C. Cook Nuclear Plant Unit 1

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

**Conditions Prior to Event**

Unit 1 was in Mode 3, Hot Standby

**Description of Event**

On February 11, 1999, during a review of industry Licensee Event Reports submitted by other utilities for actuations of the Reactor Protection System (RPS) (EIS: JC) during rod drop surveillance testing, Engineering personnel questioned the reportability of past Donald C. Cook Nuclear Plant (CNP) RPS actuations during rod drop surveillance testing. In the course of performing rod drop testing, the RPS was manually actuated to open the reactor trip breakers (EIS: BRK) when unanticipated test equipment problems occurred during the surveillance. If initial troubleshooting methods were unsuccessful in resolving these problems, the RPS was manually actuated to open the reactor trip breakers and return the rod control system (EIS: JD) to its normal shutdown configuration by fully inserting the control rods.

Review of CNP Unit 1 and Unit 2 data from past performances of rod drop surveillances revealed that the RPS was manually actuated on two occasions without pre-planning the actuations in the surveillance test procedure. The two unplanned events occurred during rod drop surveillance testing on Unit 1 in Cycle 14 (on 05/09/94 and 05/12/94) when problems with test signal measuring equipment were identified. During rod drop testing on 05/08/94, Shutdown Bank 'A' (SBA) was withdrawn to 231 steps. A high level of noise was observed on the test equipment measuring the stationary gripper coil signal. Troubleshooting of the test equipment noise began and was unsuccessful. SBA was inserted to 5 steps and the RPS was manually actuated to open the reactor trip breakers, fully inserting SBA. The determination was made to continue test equipment noise troubleshooting. On 05/12/94, rod drop testing was resumed. SBA was withdrawn to 231 steps. Noise was still present on the stationary gripper coil signal test equipment. The Reactor Operator inserted SBA and actuated the RPS to open the reactor trip breakers. No procedural guidance to actuate the RPS existed for these situations where test equipment problems were encountered.

This event was reported via the ENS on February 16, 1999 at 1808 hours under 10 CFR 50.72(b)(2)(ii), as a condition that results in a manual or automatic actuation of any Engineered Safety Feature (ESF), including the Reactor Protection System. This LER is being submitted in accordance with the related 10 CFR 50.73(a)(2)(iv) requirement.

**Cause of Event**

The causes of this event were a lack of knowledge of NRC reportability requirements related to unplanned ESF and RPS actuations during surveillance testing, and surveillance procedure inadequacies. Personnel involved in the surveillance testing did not question the reportability aspects of a manual actuation of the RPS during the events or during the procedure change process.

**Analysis of Event**

Rod drop testing is performed in Mode 3, Hot Standby condition, with the average Reactor Coolant System (RCS) (EIS: AB) temperature greater than or equal to 541°F and the reactor coolant pumps (EIS: P) operating. The surveillance is required for the rods following each removal of the reactor vessel head, for specifically affected individual rods following any maintenance on or modification to the control rod drive system (EIS: AA) which could affect the drop time of those specific rods, and at least once per 18 months. The intent of rod drop testing is to ensure the drop time meets the limiting condition for operation, as specified in the Technical Specifications, and which is consistent with the assumed rod drop time used in the accident analysis.

The investigation indicated that there is no safety significance due to these manual actuations of the RPS or the delay in reporting the events. When unanticipated problems were encountered during the rod drop surveillance, manual actuation of the RPS to open the reactor trip breakers was a conservative action. In all cases, RPS actuation during rod drop testing was not in response to adverse plant conditions. Manual actuation of the RPS enabled the rod control system to be returned to its normal shutdown configuration with all rods inserted into the core.

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TEXT CONTINUATION**

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

While performing rod drop testing in Mode 3, the reactor is maintained subcritical. Subcriticality is ensured in the following ways throughout rod drop testing: 1) Boron concentration is required to be greater than "All Rods Out" critical boron concentration plus shutdown margin plus 50 ppm for conservatism; 2) Boron concentration is sampled throughout the surveillance; and, 3) Source Range detectors (EIS: JI) are monitored throughout the surveillance for an unusual increase in counts. Regardless of the rod configuration obtained during the surveillance, subcriticality was maintained. Therefore, these RPS actuations had no safety significance.

**Corrective Actions**

Training on the reporting requirements of 10 CFR 50.72 and 10 CFR 50.73 was performed for the Operations Department, and is being considered for additional plant personnel.

Procedure PMP 2010.PRC.002, "Procedure Correction, Change, and Review," was revised to provide a requirement to evaluate procedure changes for the possibility of a manual actuation of an ESF, including the RPS.

CNP performed an evaluation of existing procedures to verify procedural adequacy in terms of pre-planning a manual actuation of any ESF, including the RPS. Eight additional procedures were identified that include pre-planned ESF actuations. These procedures will benefit from adding precaution statements addressing manual actuation of any ESF, including the RPS, and related instructions to write a condition report in the event of a manual ESF or RPS actuation that is not pre-planned.

Unit 2 procedure 2 EHP 4030 STP.386, "Multiple Rod Drop Measurements," was revised to allow for manual actuation of the RPS if problems occur during surveillance testing with Rod Sequencing, Demand Counter Indications, etc., and troubleshooting methods are unsuccessful or repair requires the Reactor Trip Breakers to be opened. Additionally, the procedure now provides direction to write a condition report for all unplanned manual ESF or RPS actuations or when problems are encountered during the surveillance test. Unit 1 procedure 1 EHP 4030 STP.386 will be revised prior to the next performance of the procedure to incorporate the same RPS actuation information.

**Previous Similar Events**

None