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FACIL:50-316 Donald C. Cook Nuclear Power Plant, Unit 2, Indiana & 05000316
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RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 88-011-00:on 881213,engineered safety features actuation due to test method deficiencies.W/890106 ltr.
W/8 ltr.

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NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/88

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
D. C. Cook Nuclear Plant - Unit 2	0 5 0 0 0 3 1 6	1 OF 0 4

TITLE (4) Engineered Safety Features Actuation During Time Response Testing Due ot Test Method Deficiencies

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 5 0 0 0
1 2	1 3	8 8	8 8	0 1 1	0 0	0 1	0 6	8 9		0 5 0 0 0

OPERATING MODE (9)	6	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (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, NRC Form 366A)
		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)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
T. K. Postlewait - Technical Engineering Superintendent	AREA CODE 6 1 6 4 6 5 - 5 9 0 1

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)

On December 13, 1988, at 0912 hours, Unit 2 experienced an unexpected Engineered Safety Features (ESF) Phase B actuation. The actuation occurred during the 18 month ESF Time Response Surveillance Testing. At the time of the event the Unit was in Mode 6 (Refueling) and there was no fuel in the core.

As the result of Vendor Solid State Protection System (SSPS) training, test personnel were using, for the first time, a new test method utilizing the SSPS Logic Panel which indicated that limited equipment actuations, and not a Phase B isolation, would occur. Subsequent discussions with the vendor confirmed that the SSPS logic performed as designed.

Following the actuation, Operations personnel verified that all Phase B equipment inservice responded as expected.

To prevent recurrence of an unexpected Phase B actuation, and to minimize the number of Phase B equipment actuations, the portion of the test that caused the Phase B isolation signal will be incorporated into the section of the procedure that tests the Phase B circuitry.

IE22

NRC Form 366

Conditions Prior to Occurrence

Unit 2 in Mode 6 (Refueling - no fuel in the core).

Description of Event

On December 13, 1988, at 0912 hours, Unit 2 experienced an unexpected Engineered Safety Feature (ESF) Phase B actuation. The actuation occurred during the 18 month ESF Time Response Surveillance testing of the Steam Generator (S/G) (EIIS-AB-SG) Stop Valve (EIIS-AB-ISV) Dump Valves (EIIS-AB-V) on Train A. The Phase B actuation was not identified as an expected result of the test procedure and was unanticipated by test and Operations personnel.

The procedure section being performed measured the response time from the actuation of master relay coil (EIIS-JE-44) K504 to the start of the opening of the S/G Stop Valve Dump Valves. Actuation of the master relay coil was achieved using the Solid State Protection System (SSPS) (EIIS-JG) logic test panel and the associated logic test switches "Logic B switch position 20 Hi-Hi Cont. Pressure Steam Stop Valves". The only action expected as a result of the test signal was the opening of the S/G Stop Valve Dump Valves. In addition to this expected action an unexpected Phase B Isolation Signal was also generated. All Phase B actuated equipment that was inservice was verified to have responded properly to the Phase B signal.

Testing was delayed on Train B until the procedure could be revised to identify the Phase B isolation signal as an expected result of the test. The Nuclear Regulatory Commission was notified of the event, via the Emergency Notification System, at 1053 hours.

There were no inoperable structures, components, or systems that contributed significantly to this event.

Cause of Event

As the result of Vendor SSPS training, test personnel incorporated a new test method into the test procedure using the SSPS logic panel which indicated that only the slave relays to the S/G Stop Valves would be actuated.

Cause of Event (continued)

Test personnel had recently attended Vendor SSPS training. During the training a discussion was held on time response test methods. In past tests, the plant method was to manually activate the master relays by removing the covers on the relays and pushing together the master relay contacts. The Vendor advised the test personnel that the preferred method of activating the master relays was to use the logic test panel and the logic test switches installed in the system. The Vendor included, as part of the training, instructions on how to energize the master relays using the above devices. The instruction implied that use of the logic test panel and switches would allow testing of each function individually, with actuations limited to those required or expected from each function. A review of the SSPS Manual and the monthly surveillance procedure on the logic circuitry also implied that each logic test switch tested one function only and that no signals were generated to the other functions circuitry. Based on the above, the procedures were revised to incorporate the new test method. As the test personnel understood that the only signal generated would be to the S/G Stop Valve Dump Valves, precautions or warnings concerning a Phase B isolation signal were neither appropriate nor included.

Subsequent discussions with the Vendor indicated that the Phase B Isolation signal was in fact a correct response to the new test method and should be expected.

Analysis of Event

This event is being reported per 10CFR50.73(a)(2)(ii) as an event that resulted in an unplanned automatic actuation of an Engineered Safety Feature.

All Phase B equipment inservice responded as expected, including closure of various containment isolation valves, opening of several pump discharge and tank outlet valves and tripping or starting of several ventilation fans. Based on the above, it is concluded that the event did not constitute an unreviewed safety question as defined in 10CFR50.59(a)(2) nor did it adversely impact the health and safety of the public.

Corrective Actions

The surveillance test procedure for Train B was revised prior to being used to identify the Phase B Isolation signal as an expected result of the test procedure.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
D. C. Cook Nuclear Plant - Unit 2	0 5 0 0 0 3 1 6	8 8	— 0 1 1	— 0 0	0 4 OF 0 4

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

Corrective Actions (continued)

To prevent recurrence of an unexpected Phase B actuation, and to minimize the number of actuations of Phase B equipment, this portion of the test procedure will be incorporated into the section of the procedure which tests the Phase B circuitry. These procedure revisions will be completed prior to their next scheduled use following the current Unit 2 Refueling Outage.

Failed Component Identification

None

Previous Similar Events

None

Indiana Michigan
Power Company
Cook Nuclear Plant
P.O. Box 458
Bridgman, MI 49106
616 465 5901

INDIANA MICHIGAN POWER

January 6, 1989

United States Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555

Operating License DPR-58
Docket No. 50-316

Document Control Manager:

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

88-011-00

Sincerely,

W. G. Smith, Jr.
Plant Manager

WGS:clw

Attachment

cc: D. H. Williams, Jr.
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IE22
1/1