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SUBJECT: LER 90-004-02:on 900508,inadvertent operation of wrong control switch due to personnel error.W/901129 ltr.

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INDIANA MICHIGAN POWER

November 29, 1990

United States Nuclear Regulatory Commission
Document Control Desk
Rockville, Maryland 20852

Operating Licenses DPR-58
Docket No. 50-315

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:

90-004-02

Sincerely,

for A.A. Blind
Plant Manager

AAB:clj

Attachment

cc: D.H. Williams, Jr.
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NRC FORM 366 (6-89)

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104
EXPIRES: 4/30/92

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

LICENSEE EVENT REPORT (LER)

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

TITLE (4) Inadvertent Operation of the Wrong Control Switch Due to Personnel Error Resulted in Opening of the Ice Condenser Lower Inlet Doors

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 8	9 0	9 0	0 0 4	0 2	1 1	3 0	9 0		0 5 0 0 0
										0 5 0 0 0

OPERATING MODE (9)	1
POWER LEVEL (10)	0 7 0

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: *(Check one or more of the following)* (11)

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)	X 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)	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)	Voluntary

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
	AREA CODE
J. R. Sampson, Operations Department Superintendent	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)

This revision reschedules and clarifies the preventive action.

On May 8, 1990, at 1555, a Reactor Operator inadvertently started a containment recirculation fan (CEQ) instead of the intended hydrogen recombiner during a surveillance test. The fan operation caused sufficient differential pressure across the ice condenser lower inlet doors to open them.

Various ventilation alignments were attempted to reclose the inlet doors, but without success. The ice condenser was declared inoperable at 2129 when it was determined that the TS 3.6.5.1 maximum ice bed temperature of 27°F had been exceeded. Power was decreased to eight percent at 1125 on May 9, 1990, to allow lower containment entry and manual closure of the lower ice condenser inlet doors. The inlet doors were closed and declared operable at 1248. The ice bed temperatures were determined to be within the TS limits at 1325 on May 19, 1990. Therefore, the TS 3.6.5.1 requirement to restore the ice bed to operable status within 48 hours was met. The required work practices to prevent recurrence of a similar event were reviewed with the involved Reactor Operator. A comprehensive self-checking program will be fully implemented by November 15, 1991.

This revision reschedules and clarifies the preventive action.

Conditions Prior to Occurrence

Unit 1 in Mode 1 at 70 percent reactor thermal power.

Description of Event

On May 8, 1990, at 1555 hours, a Reactor Operator (RO) (licensed operator) inadvertently started a containment recirculation fan (CEQ) (EIIS/BB-FAN) instead of the intended hydrogen recombiner (EIIS/BB-RCB) during surveillance testing. The fan operated for approximately five seconds which created sufficient differential pressure across the ice condenser lower inlet doors (EIIS/BC-DR) to open all the doors.

The opening of the lower ice condenser inlet doors was annunciated in the control room. Initially, there was uncertainty concerning why the doors opened because the RO did not realize the fan had been started. The RO had correctly located the hydrogen recombiner control switch (EIIS/BB-RCP-HS), but looked away from the panel to the clock in the front of the room when reaching for the hydrogen recombiner control switch. The RO inadvertently grasped the CEQ fan control switch (EIIS/BB-FAN-HS), located directly adjacent to the hydrogen recombiner control switch, and, unknowingly, applied enough pressure to momentarily take the control switch out of the "automatic" position and make up the run contacts. The pressure on the control switch was released sufficiently to return it to the automatic position, which allowed the CEQ fan breaker to reopen (green light on) prior to the RO realizing that he had grasped the wrong control switch. It was subsequently identified at 1630 that the CEQ fan inlet damper (EIIS/BB-BDMP) was open.

Although a start of the CEQ fan is one of the signals which will cause automatic opening of the inlet damper, it was not identified that a start of the CEQ fan had caused the damper opening. It was speculated that the damper was opened inadvertently or spuriously and that this opening had allowed the pressure differential which opened the inlet doors.

Since the ice condenser (EIIS/BC) is one of the Engineered Safety Features (ESF), the decision was made to consider the opening of the inlet doors as an ESF actuation and a four-hour report was made to the Nuclear Regulatory Commission (NRC) at 1743 hours.

Description of Event (Continued)

It was not until 1930 hours while reviewing computer event printouts of a selected component operations that it was recognized that the CEQ fan had been started and operated for five seconds.

Between 1945 on May 8, 1990, and 0505 on May 9, 1990, several containment ventilation alignments were attempted as a means to set up a differential pressure between lower containment and the ice condenser, which would cause closure of the passive lower ice condenser inlet doors. These attempts were not successful and a reduction in power to less than 10 percent was required to allow containment entry and manual closure of the doors. The power reduction was commenced at 0516, with the initial power at 70 percent.

It was determined that it would be necessary to tape the inlet doors closed for a short period to allow buildup of the cold air head, which normally keeps the doors closed. Although the ice condenser inlet doors were not closed as required by TS 3.6.5.3, it was believed that they could perform their design function. The taping of the doors, however, removed assurance that the doors would open with less than or equal to 675 inch pounds of force as required by the surveillance requirement 4.6.5.3.1.b.2. Although the action statement of TS 3.6.5.3 allows up to 14 days of operation with one or more inlet doors inoperable, it was decided to voluntarily restrict operation with the inlet doors taped closed, to the time limits imposed by TS 3.0.3. An update call to the NRC on this decision was made at 1048 on May 9, 1990.

The reactor was brought to eight percent power at 1125 on May 9, 1990. Lower containment entry was then made to close the inlet doors and temporarily tape them closed. The time limits of TS 3.0.3 were entered at 1130, prior to taping of the first door. It was found that five pairs of lower ice condenser inlet doors (bays 1, 4, 10, 15, and 17) were held open approximately 1" to 6" by ice formation. The ice, which prevented door closure, was described as "soft ice" by personnel who removed the ice and closed the doors. It was the opinion of these persons that the "soft ice" would not have significantly hindered opening of the inlet doors under accident conditions. The ice was removed and all the inlet doors were taped at approximately 1200.

Prior to closing and taping the lower inlet doors, the personnel in the containment inspected the doors and seals to ensure that there was no ice or moisture which would inhibit operability of the doors. After the cold air head was established in the ice condenser, the tape was removed from the doors. After verifying that all the doors indicated closed and independently

Description of Event (Continued)

verifying removal of the tape, the inlet doors were declared operable at 1248. Although the unit was in the condition for greater than one hour, no power reduction was commenced. This was justified by the fact that the unit was already less than 10 percent power and a shutdown within six hours could be easily achieved.

Although the ice condenser had been considered inoperable since 2129 on May 8, 1990, when the maximum ice bed temperature exceeded 27°F (TS 3.6.5.1), it was decided to raise power to a stable value of 20 percent while reviewing the ice condenser conditions after the inlet doors were closed. This power level allowed automatic feedwater control and transfer of auxiliary power to the generator (normal source). The power increase began at 1310. An update call was made to the NRC a 1334.

A Plant Nuclear Safety Review Committee meeting was held at 1504 on May 9, 1990, to review the results of the ice condenser inspection and the engineering evaluation of ice condenser operability. It was concluded that the amount of ice loss was approximately 550 lbs and that the remaining ice condenser ice inventory was adequate to meet the requirements of TS 3.6.5.1. It was further determined that the ice condenser temperatures were decreasing at an acceptable rate to ensure the maximum ice bed temperature would be below 27°F within 48 hours from 2129 on May 8, 1990. The decision was made to increase power to 49 percent based on these conditions. An update call was made to the NRC at 1625 on May 9, 1990.

The ice bed temperatures were verified to be less than or equal to 27°F at 1325 on May 1990 and the ice condenser was declared operable. A power increase of five percent per hour was started at 1438. The power increase was stopped at the pre-event power level at 2058 on May 10, 1990.

Cause of Event

The cause of this event was determined to be an inadequate work practice in that the RO visually located the right control switch, but looked away from the control panel while actually reaching for, and grasping, the control switch. The RO did perform a self-check prior to giving the control switch an intentional movement.

Cause of Event (Continued)

The following factors also influenced the RO's performance:

- o Insufficient degree of attention applied - the RO did not have himself at a sufficient level of attention when performing the initial action.

- o Perceived pressure to complete the task - although there was no rush to complete the surveillance, the RO experienced some self-imposed pressure to complete the surveillance to avoid requiring the next shift to finish it.

Analysis of Event

While this event was initially reported in accordance with 10 CFR 50.72 as an ESF actuation, subsequent detailed review of the Ice Condenser System (including the sequence necessary for it to perform its intended safety function) and the reporting requirements/guidance as documented in 10 CFR 50.73 and NUREG 1022 concluded that the subject event did not constitute the actuation of the ice condenser - an ESF System at D. C. Cook.

The ice condenser was considered inoperable from 2129 on May 8, 1990, when the ice bed temperature was determined to have exceeded the TS limit, until 1325 on May 10, 1990, when the ice bed temperature was restored to within the TS limit.

The review of this event determined that during the event the ice condenser remained capable of performing its design function. Since the ice condenser was capable of performing its design function, it is concluded that the event did not constitute an unreviewed safety question as defined by 10 CFR 50.59(a)(2), nor did it adversely impact the health and safety of the public.

Corrective Actions

The ice condenser was restored to operability by closing the lower ice condenser inlet doors and restoring the ice condenser temperature to within the TS limits.

The required work practices to prevent recurrence of a similar event were discussed with the involved RO. A comprehensive self-checking program will be fully implemented by November 15, 1991.

Failed Component Identification

None.

Previous Similar Events

There were no previous similar events which involved opening of the lower ice condenser inlet doors due to inadvertent CEQ fan operation.