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10CFR50.73

Docket No. 50-461

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

Subject: Clinton Power Station - Unit 1
Licensee Event Report No. 94-001-00

Dear Sir:

Enclosed is Licensee Event Report No. 94-001-00: Unexpected Automatic Isolation of Reactor Core Isolation Cooling System during Channel Calibration Surveillance Due to Lifting Wrong Thermocouple Lead. This report is being submitted in accordance with the requirements of 10CFR50.73.

Sincerely yours,

J.S. Perry
Senior Vice President

RSF/csm

Enclosure

cc: NRC Clinton Licensing Project Manager
NRC Resident Office, V-690
Regional Administrator, Region III, USNRC
Illinois Department of Nuclear Safety
INPO Records Center

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NRC FORM 366 (5-92) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104
EXPIRES 5/31/95

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), 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.

LICENSEE EVENT REPORT (LER)

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

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Clinton Power Station	05000461	1 OF 4

TITLE (4) Unexpected Automatic Isolation of Reactor Core Isolation Cooling System during Channel Calibration Surveillance Due to Lifting Wrong Thermocouple Lead

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
									None	05000
01	15	94	94	001	00	02	14	94	FACILITY NAME: None	DOCKET NUMBER: 05000

OPERATING MODE (9)	1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)			
POWER LEVEL (10)	100	20.402(b)	20.405(c)	X 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
		20.405(a)(1)(iii)	50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	(Specify in Abstract below and in Text, NRC Form 366A)
		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)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (Include Area Code)
K. R. Foster, Plant Maintenance Specialist	(217) 935-8881, Extension 3577

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 15 single-spaced typewritten lines) (16)

With the plant at 100 percent reactor pressure, Control and Instrumentation Maintenance (C&I) technicians were performing a channel calibration surveillance on a Reactor Water Cleanup System heat exchanger room area temperature channel. The technicians reviewed the drawing to verify the correct field thermocouple termination to be lifted, but then inadvertently lifted a lead from a different terminal, placing the Reactor Core Isolation Cooling (RCIC) system equipment room ambient temperature channel in a tripped condition. As a result, a RCIC steam supply containment isolation valve automatically closed and the RCIC pump turbine tripped from the standby mode. The RCIC system was restored within sixteen minutes. The cause of this event is personnel error. The technicians performed inadequate double verification and self-checking in locating and lifting the field thermocouple lead. Unusual characteristics of the work area contributed to the cause of this event. Corrective actions include the technicians understanding their error, installing improved labeling and using maxi-grabbers to identify and mark leads to be lifted.

DESCRIPTION OF EVENT

On January 15, 1994, the plant was in Mode 1 (POWER OPERATION) at about 100 percent reactor [RCT] power. Control and Instrumentation (C&I) Maintenance technicians were preparing to perform a channel calibration surveillance on Reactor Water Cleanup (RWCU) system [CE] heat exchanger [HX] room area temperature channel 1E31-N620B [TS]. The channel calibration is performed in accordance with surveillance procedure CPS 9432.17, "RWCU Equipment Area Temp E31-N620A(B), E31-N621A(B,E,F), E31-N622A(B), E31-N626A(B) Channel Calibration."

At about 0840, the C&I technicians started the calibration. The surveillance procedure requires technicians to lift field thermocouple leads from terminal strip TB001, terminal 10, in panel [PL] 1H13-P714B to allow a simulated thermocouple input into the channel. As directed by the surveillance procedure, the RWCU isolation function was placed in the bypass mode to prevent an RWCU system isolation during the channel calibration.

Prior to lifting the leads, the technicians noted that the label identifying terminal numbers was missing from the terminal strip. Recalling that corrective action from a previous error in lifting leads requires them to verify terminal numbering using the wiring diagram anytime terminal numbering is unclear, the technicians left the area to consult the drawings. Before leaving, the technicians noted that the lead to be lifted was on the bottom terminal strip (TB001). However, upon returning from reviewing the drawing, the technicians mistakenly located terminal 10 on the bottom row of screws but on the top terminal strip, TB003. As required by the surveillance procedure, two technicians verified the terminal location (double verification) for the lead to be lifted.

At about 0858 hours, the technicians lifted the lead from the wrong terminal strip, TB003, terminal 10, which is located directly above terminal strip TB001, terminal 10 (the correct terminal).

Lifting the wrong lead placed Reactor Core Isolation Cooling (RCIC) system [BN] equipment room ambient temperature channel 1E31-N602B in a tripped condition and completed the one-out-of-two trip logic for actuating containment isolation valves in Group 5 (RCIC). As a result, Residual Heat Removal [BO] and RCIC steam supply inboard (Division 2) containment isolation valve [ISV] 1E51-F063 automatically closed and caused the RCIC pump [P] turbine [TRB] to trip off from the standby mode.

Operators immediately recognized the unexpected automatic closure of valve 1E51-F063 and directed the C&I technicians to re-land the lifted lead and stop the channel calibration. Operators declared the RCIC system inoperable and entered the action of Technical Specification 3.7.3, "Reactor Core Isolation Cooling System." The action allows continued plant operation while the RCIC system is inoperable, provided the High Pressure Core Spray (HPCS) system [BG] is operable. It requires the RCIC system to be restored to operable status within fourteen days or a plant shutdown must be initiated. The HPCS system was operable during this event.

At about 0901 hours, operators confirmed that the appropriate containment isolation valves closed by completing off-normal procedure checklist CPS 4001.02C001, "Automatic Isolation Checklist."

By 0914 hours, the RCIC isolation trip signals were reset, isolation valve 1E51-F063 was reopened, the RCIC system was restored to the standby mode, and the action of Technical Specification 3.7.3 was exited.

Condition Report (CR) 1-94-01-030 was initiated to track a root cause analysis and corrective action determination for the event.

No automatic or manually initiated safety system responses were necessary to place the plant in a safe and stable condition. No other equipment or components were inoperable at the start of this event to the extent that their inoperable condition contributed to this event.

CAUSE OF EVENT

The cause of this event is personnel error by the C&I technicians performing the channel calibration. The technicians properly reviewed the wiring diagram to identify the correct terminal when its location was in question. However, the technicians performed inadequate double verification and self-checking in locating the correct terminal in the field and as a result lifted the wrong lead, located on the terminal strip directly above the correct terminal.

Contributing to the cause of this event is the difficulty of performing surveillances in Leak Detection (LD) system [IJ] panels due to congestion and obstructed terminals and labeling.

CORRECTIVE ACTION

The technicians responsible for causing this event fully understand the errors they made.

To decrease the potential for lifting the wrong leads, labels that are more visible have been installed on all thermocouple terminal strips in Main Control Room panels that have wires lifted during surveillance testing. In addition, all C&I technicians will be given orange maxi-grabbers for attaching to wires prior to lifting the leads. The grabbers will be used to identify the wires to be lifted and will enhance visibility of the wires and ensure that momentary distractions will not cause the technician to lose track of the terminal being worked. Using the grabbers will also facilitate double verification of the lead to be lifted by allowing a technician to exit the panel so a second technician can enter the panel and verify the lead to be lifted.

ANALYSIS OF EVENT

This event is reportable under the provisions of 10CFR50.73(a)(2)(iv) due to the unplanned automatic closure of containment isolation valve 1E51-F063, an engineered safety features actuation.

Assessment of the safety consequences and implications of this event indicates that this event was not nuclear safety significant. The RCIC system responded to the RCIC equipment room high ambient temperature signal as designed by isolating the system. The RCIC system was in the standby mode at the time of this event. The HPCS system, the alternate means of providing reactor core cooling under high reactor vessel pressure conditions, was available and operable at the time of this event.

During this event, the RCIC system was inoperable from about 0858 hours until about 0914 hours on January 15, 1994.

ADDITIONAL INFORMATION

No equipment or components failed during this event.

A review of CPS LER history identified two events having similar circumstances. LER 87-016 discussed an unexpected automatic RCIC system isolation caused by personnel error in lifting the wrong lead. The specific cause of LER 87-016 was the failure to use available terminal block designation numbers when identifying the lead to be lifted. Corrective actions included ensuring the involved personnel understood their mistake and briefing others on lessons learned. The corrective actions taken for LER 94-001 enhance the actions taken for LER 87-016.

LER 89-036 discussed an unexpected automatic RCIC system isolation caused by personnel error in failing to perform work at eye level and connecting a millivolt source to the wrong terminal. Corrective actions included ensuring that involved personnel understood their mistake; briefing others on using ladders/stools so work is at eye level; applying different color tape strips to terminal boards to enhance recognition of boards; revising procedures to reduce frequency of entering termination cabinets; and revising procedures to require installation of the millivolt source in a deenergized state. The leads lifted in the event discussed in LER 94-001 were at eye level.

Corrective action for Condition Report 1-93-08-020 required labeling of terminals in the LD system panels. Following the occurrence of LER 94-001, Illinois Power identified that this corrective action had not been completed in a timely manner. Therefore, CR 1-94-01-035 was initiated to track a root cause analysis and corrective action for this deficiency.

For further information regarding this event, contact K. R. Foster, Plant Maintenance Specialist, at (217) 935-8881, extension 3577.