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)
Catawba Nuclear Station, Unit 1	0 5 0 0 0 4 1 1 3	1 OF 0 5

TITLE (4) Receipt Of Automatic Signal For Alignment Of The Nuclear Service Water System To The Standby Nuclear Service Water Pond Due To Lack Of Attention To Detail

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 4	1 3	8 8	8 8	0 1 8	0 0	0 5	1 3	8 8	Catawba, Unit 2	0 5 0 0 0 4 1 1 4
										0 5 0 0 0

OPERATING MODE (9)	1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
POWER LEVEL (10)	1 0 0	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 (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)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
Julio G. Torre, Associate Engineer - Licensing	AREA CODE 7 0 4 3 1 7 3 1 - 1 8 1 0

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 April 13, 1988, at 1104 hours, the Nuclear Service Water (RN) System received a signal to swap suction from Lake Wylie to the Standby Nuclear Service Water Pond. This Engineered Safeguards Feature (ESF) actuation occurred during calibration of RN pit level instrumentation. Duke Power Technicians mistakenly disconnected 2RNLT7370 instead of 1RNLT7370 which satisfied ESF logic for the swap. Unit 1 and Unit 2 were in Mode 1, Power Operation, at 100% power at the time of the event.

This incident has been attributed to a personnel error. Duke Power Technicians did not correctly identify or independently verify the identification of RN instrumentation prior to proceeding with the calibration. Disciplinary action was taken with the Technicians performing the calibration following review of this event.

The health and safety of the public were unaffected by this event.

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

BACKGROUND:

The Nuclear Service Water (EIIS:BI) (RN) System serves as the ultimate heat sink for heat loads in the Auxiliary and Reactor (EIIS:RCT) Buildings. During normal operation, the RN pumps take suction from Lake Wylie. Upon receiving an Emergency Low Level signal in the RN Pits, the RN pumps (EIIS:P) suction source automatically swaps from Lake Wylie to the Standby Nuclear Service Water Pond (SNSWP). This Emergency Low Level signal also starts all idle RN pumps and actuates train separation valves.

The RN System has an Engineered Safeguard Feature (ESF) which initiates the actions required to ensure adequate suction for the RN pumps. Technical Specification 3.3.2, Table 3.3-3, Action Statement 21, requires a minimum of two channels for RN Pit level to be operable in Mode 1, Power Operation, through Mode 4, Hot Shutdown. However, one channel may be bypassed for up to 2 hours for surveillance testing. In addition, a Technical Specification Interpretation for 3.3.2 specifies an acceptable compensatory action with less than 2 channels operable by performing all actions which would have resulted from automatic actuation of the Emergency Low Pit Level with less than 2 channels operable.

If any of these actions are not taken, Technical Specifications state: "be in at least HOT STANDBY within 6 hours and at least HOT SHUTDOWN within the following 6 hours."

DESCRIPTION OF INCIDENT:

On April 13, 1988, at approximately 0900 hours, Duke Power Instrumentation and Electrical (IAE) Technicians went to the Control Room to obtain clearance to begin work for calibration of 1RN7370 loop, RN Pump Intake Pit B level, per Standing Work Request (SWR) 3849. The Operations Shift Supervisor (SS) delayed clearance until a review of Technical Specification actions was made. After evaluation of Technical Specification 3.3.2 and the associated Interpretation, the SS decided to take compensatory action which would allow IAE more time to perform the calibration. The compensatory action specified in the Interpretation is to perform all actions which would have resulted from Emergency Low Level in the RN pits. These actions consisted of aligning RN to SNSWP, separating trains and starting all idle RN pumps. At 0924 hours, Operations (OPS) aligned RN to the SNSWP but did not close the train isolation valves (EIIS:V) and start all idle RN pumps as would occur on an actual ESF signal. RN was aligned per Enclosure 4.10, Shifting Suction and Discharges from Lake Wylie to the SNSWP, of OP/0/A/6400/06C, Nuclear Service Water System. The starting of idle RN pumps and closing of the train separation isolation valves is a design function to account for a single failure during an auto transfer. It is technically not required after the transfer is complete.

After the SS verified what he considered to be adequate compensatory action, he allowed IAE to begin work on calibration of 1RN7370 and entered this work in the Technical Specification Action Item Log (TSAIL) for tracking purposes only. At approximately 0930 hours, IAE placed a jumper in 1EATC6 which defeated the interlock for Unit 1 Emergency Low Level in RN Pit B.

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IAE Technicians proceeded to the RN Pump Structure to complete calibration of 1RN7370. During identification of the transmitter, the IAE Technician mistakenly identified the RN instrument by an orange work request tag instead of the permanent identification tag. Another IAE Technician independently verified the transmitter in the same manner. This incorrect process of identification and independent verification led to disconnecting the capacitance probe of 2RNLT7370 instead of 1RNLT7370. Instantaneously, the loss of signal actuated the level interlock on RN Pit B and RN received an automatic signal to swap to the SNSWP as designed. This actuation occurred at 1104 hours. All idle RN pumps started and all RN valves not aligned when compensatory action was taken, actuated to their required positions.

Operations immediately contacted the IAE Technicians and instructed them to restore RN instruments to normal because an ESF actuation had occurred. The IAE Technicians restored the instrument to normal at the RN Pump Structure. At 1108 hours, the Emergency Low Level Pit B signal cleared. The IAE Technicians returned to the Control Room for further instructions.

At this point, the SS was not aware that the jumper was still installed in 1EATC6 in the Auxiliary Building which disabled one channel of RN pit level interlocks. The SS became involved in evaluating the ESF actuation and preparing for actions required by the Response Procedure. At 1115 hours, RN was aligned to take suction from Lake Wylie with one channel of RN pit level instrumentation unknowingly inoperable due to the jumper still being in place.

At approximately 1230 hours, the SS, the IAE Supervisor and Technicians met in the Control Room and decided not to complete calibration of 1RN7370 at that time. The IAE Technicians stated that they informed the SS that the jumper was still installed making one channel inoperable. The SS did not recall this statement being made. The IAE Technicians proceeded to the Auxiliary Building and removed the jumper.

At 1255 hours, Operations notified the NRC as required by RP/0/B/5000/12, NRC Notification Requirements. At approximately 1330 hours, the IAE Technicians had removed the jumper which reinstated the interlock for 1RN7370. At this time, the Technical Specification Action Statement was exited. The IAE Technicians returned to the Control Room with 3849 SWR and the SS cleared the TSAIL entry.

CONCLUSION:

This event has been attributed to a personnel error. The IAE Technicians performing the calibration did not identify and independently verify the correct instrument. The IAE Technicians incorrectly identified the instrument by using an orange work request tag instead of the permanent identification tag. Disciplinary actions were taken with the IAE Technicians involved.

Four ESF actuations have been identified within the past three years due to the identification of the incorrect component resulting from lack of attention to detail (see LER 414/87-32, LER 414/87-30, LER 413/85-45, and LER 413/85-35). Three of these incidents involved IAE personnel. In all incidents, a discussion with the involved personnel was performed.

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Subsequent to this incident, a Technical Specification Action Statement was entered due to a jumper remaining installed at 1115 hours until approximately 1330 hours, which rendered one channel of RN Pit Level instrumentation inoperable for approximately 2.25 hours. Recognition of being in the Technical Specification Action Statement from 1115 hours to approximately 1330 hours, was not identified until this investigation. However, the requirements of Technical Specification 3.3.2, Table 3.3-3, Action Statement 21, which requires the Unit to be in Hot Standby within 6 hours following a single RN Level Channel being inoperable for greater than 2 hours, were not exceeded. Operations is initiating an enclosure to the RN System operating procedure for appropriate line up actions to be taken with one RN Pit out of service.

During this investigation, it was discovered that valves 1RN37B and 1RN36A, RN Pump Injection Filter Crossover valves, were indicated on the flow diagram to actuate on Emergency Low Level in RN Pits. These valves actuate only upon a Safety Injection signal. Design Engineering is aware of this erroneous information on the flow diagram and will initiate a Duke Power Station Problem Report to correct this information.

In addition, Operations personnel identified that the Annunciator Response for Emergency Low Level contained in the Operator Aid Computer Response Manual contained errors. Operations initiated action to correct the errors.

CORRECTIVE ACTION:

SUBSEQUENT

(1) 2RNLT7370 was restored by the IAE Technicians.

(2) The jumper in 1EATC6 was removed by the IAE Technicians.

(3) Disciplinary action was taken with the IAE Technicians involved.

PLANNED

(1) An enclosure to OP/0/A/6400/6C, Nuclear Service Water System, will be developed for actions to be taken with one RN Pit out of service.

(2) Annunciator Response for Emergency Low Pit Level will be corrected.

(3) A Station Problem Report to correct the flow diagram will be initiated.

(4) This incident will be discussed with all IAE crews.

(5) An IAE guide will be developed which specifies instructions for procedure use/control.

(6) All IAE personnel will be trained on the IAE guideline which is to be developed by August 1, 1988.

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SAFETY ANALYSIS:

The alignment in which the RN System was placed as a compensatory measure ensured that the system was capable of performing its safety function, even though the alignment was not to the extent required by the Technical Specification Interpretation.

The RN System received a signal to automatically swap suction to the SNSWP, actuate train separation valves, and start all idle RN pumps as designed on Emergency Low Level in RN pit. The RN System was subsequently aligned back to Lake Wylie. Adequate heat load removal capability was available at all times to both Units.

This event is reportable pursuant to 10 CFR 50.73, Section (a)(2)(iv).

The health and safety of the public were unaffected by this incident.

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HAL B. TUCKER
VICE PRESIDENT
NUCLEAR PRODUCTION

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May 13, 1988

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

Subject: Catawba Nuclear Station, Units 1 and 2
Docket Nos. 50-413 and 414
LER 413/88-18

Gentlemen:

Pursuant to 10 CFR 50.73 Section (a) (1) and (d), attached is Licensee Event Report 413/88-18 concerning receipt of an automatic signal for alignment of the Nuclear Service Water System to the Standby Nuclear Service Water Pond due to a personnel error. This event was considered to be of no significance with respect to the health and safety of the public.

Very truly yours,

H. B. Tucker Jr

Hal B. Tucker

JGT/21/sbn

Attachment

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