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U.S. NUCLEAR REGULATORY COMMISSION

AFPROVED OM8 NO. 3150-0104 EXPIRES 8/31/85

FREILITY NAME (0)	DOCKET NUMBER (2)	LER NUMBER (6)	PAGE (3)	
		YEAR SEQUENTIAL REVISION NUMBER NUMBER		
Catawba Nuclear Station, Unit 1	0 5 0 0 0 4 11	3 8 6 - 0 2 4 - 0 0	0 1 2 OF 0 14	

BACKGROUND

Form 358A

The Nuclear Service Water (RN) System (EIIS:BI) is a raw water cooling system which serves as the ultimate heat sink for essential and non-essential primary loads, as assured source of suction for the Auxiliary Feedwater System (EIIS:BA), and as assured source of cooling for heat loads served by the Containment Chilled Water System (EIIS:BK). The RN Pumps normally take suction from Lake Wylie via the RN Pumphouse Pits and discharge back to the lake via the Low Pressure Service (RL) System (EIIS:KQ). In the RN Pumphouse, there are two separate suction pits from which the two independent and redundant trains of RN are supplied. Each train includes two RN Pumps, with one pump being capable of supplying Unit 1 and Unit 2 with ample cooling during normal operation, and with one pump per unit required to supply ample cooling in emergency conditions.

When an emergency low level is initiated in either Pit A or B, the following functions will automatically occur:

- (1) All four RN Pumps start.
- (2) Closure of RN Pump seal injection water crossover valve (to provide supply channel isolation).
- (3) The RN Pumphouse Intake Pits are isolated from the lake and aligned to take suction from the Standby Nuclear Service Water Pond (SNSWP).
- (4) The normal RN discharge through the RL System is isolated and the RN System is aligned to discharge to the SNSWP.
- (5) RN supply headers A and B are isolated into two separate headers, and the RN non-essential supply header is isolated.
- (6) RN discharge headers A and B are isolated into two separate headers, and the RN non-essential discharge header is isolated.
- (7) The Diesel Generator cooling water returns to the lake are closed, and the returns to the SNSWP are opened.

When maintenance is required on either of the RN Pits level instrumentation, the affected pit must be drained. To prevent the automatic alignment of RN to the SNSWP on low pit level, jumpers must be installed per a Temporary Station Modification (TSM). To satisfy Technical Specifications, during the time an RN pit level instrumentation is out of service, the affected train of RN will be isolated and declared inoperable. The inservice train of RN to the SNSWP will also be aligned.

The automatic alignment of the RN System to the SNSWP constitutes an Engineered Safeguard Feature actuation.

LICENSEE EVENT REP	ORT (LER) TEXT	CONTINUATION
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US NUCLEAR REGULATORY COMMISSION APPROVED OMB NO 3150-0104

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FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)	PAGE (3)	
		YEAR SEQUENTIAL REVISION NUMBER		
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DESCRIPTION OF INCIDENT

RC Form 366A

On May 5, 1986, preparations were begun to drain RN Pit A for maintenance on the level instrumentation. At 0015 hours, RN Train A was declared inoperable. At approximately 0400 hours, RN Train B was aligned to the SNSWP and RN Train A was isolated. At approximately 0415 hours, Technicians A and B started the installation of the TSM to prevent the automatic alignment of RN to the SNSWP on low pit level. At 0421:00 hours, an RN Alignment to the SNSWP signal was received. All valves, not previously aligned responded as designed. Just prior to completing the installation of the TSM at approximately 0430 hours, Technicians A and B were notified of the RN alignment.

RN Pit A was drained and the scheduled maintenance on the level instrumentation was completed. On May 6, 1986, at 1200 hours, the TSM was removed, and RN Train A was declared operable and RN was returned to the normal mode of operation.

CONCLUSION

This incident is assigned Cause Code A, Personnel Error. A subsequent investigation revealed that the TSM to prevent the automatic alignment of RN to the SNSWP on low pit level involved the installation of jumpers across four relay contacts. The jumpers used by Technicians A and B contained spaded lugs, which are open ended ring lugs. The method used to install these jumpers involved loosening the nut on the terminal stud, placing the spaded lug between the nut and the ring lug, and re-tightening the nut. At the time when the nut on one of the seven terminal studs was loose, the ring lug on that terminal stud lost contact resulting in the automatic RN alignment to the SNSWP.

All station groups which specify jumper installations and connections should determine the appropriate method, or consult with Instrumentation and Electrical (IAE) personnel, prior to the installation.

There have been four previous Reports concerning the automatic alignment of the RN to the SNSWP (see LER's 413/85-26, 413/85-30, 413/85-31, and 413/85-32).

CORRECTIVE ACTION

- A memorandum will be issued to all responsible personnel emphasizing the possible consequences when a terminal stud nut is lossened.
- (2) IAE personnel will review possible situations to determine desirable methods of providing jumpers and connections. Suitable methods will be communicated to all responsible IAE personnel.

NRC Foim 366A (9-83)	LICENSEE EVENT REP	ULATORY COMMISSION MB NO 3150-0104 85				
FACILITY NAME (1)		DOCKET NUMBER (2)	LER NUMBER (6	PAGE (3)		
		2	YEAR SEQUENTIAL NUMBER	REVISION		
Catawba Nucle	ear Station, Unit 1	0 5 :0 0 0 4 1	3 8 6 - 0 2 4	-010	04 05	014

SAFETY ANALYSIS

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

Upon receipt of the inadvertent RN Alignment to the SNSWP signal, the system functioned as designed. RN Train A was imperable and isolated with RN Fumps IA and 2A tagged. RN Train B was aligned to the SNSWF with RN Fumps IB and 2B in service. Therefore, the automatic alignment of RN to the SNSWP did not affect the operation of the system and sufficient RN flow was available at all times to both units.

The safety and health of the public were not affected by this incident.

DUKE POWER COMPANY P.O. BOX 33189 CHARLOTTE, N.C. 28242

HAL B. TUCKER VICE PRESIDENT NUCLEAR PRODUCTION

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and a

TELEPHONE (704) 373-4531

June 4, 1986

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

Subject: Catawba Nuclear Station, Unit 1 Docket No. 50-413

Gentlemen:

Pursuant to 10 CFR 50.73 Section (a) (1) and (d), attached is Licensee Event Report 413/86-24 concerning an automatic 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. Tu Hal B. Tucker

RWO:s1b

Attachment

xc: Dr. J. Nelson Grace, Regional Administrator U. S. Nuclear Regulatory Commission Region II 101 Marietta Street, NW, Suite 2900 Atlanta, Georgia 30323

> American Nuclear Insurers c/o Dottie Sherman, ANI Library The Exchange, Suite 245 270 Farmington Avenue Farmington, CT 06032

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NRC Resident Inspector Catawba Nuclear Station