

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Catawba Nuclear Station, Unit 1	DOCKET NUMBER (2) 0   5   0   0   0   4   1   3	PAGE (3) 1 OF 0   3
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TITLE (4)  
Inadvertent Reactor Trip Breaker Actuation During Testing

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	1	0	9	8	5	8	5	0	0	0	3	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0

OPERATING MODE (9) 2	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   0	20.402(b)	20.405(c)	<input checked="" type="checkbox"/>	50.73(a)(2)(iv)	73.71(b)					
	20.405(a)(1)(i)	50.38(a)(1)	<input type="checkbox"/>	50.73(a)(2)(v)	73.71(c)					
	20.405(a)(1)(ii)	50.38(a)(2)	<input type="checkbox"/>	50.73(a)(2)(vii)	<input checked="" type="checkbox"/> OTHER (Specify in Abstract below and in Text, NRC Form 366A)					
	20.405(a)(1)(iii)	50.73(a)(2)(i)	<input type="checkbox"/>	50.73(a)(2)(viii)(A)	50.72(b)(2)(ii)					
	20.405(a)(1)(iv)	50.73(a)(2)(ii)	<input type="checkbox"/>	50.73(a)(2)(viii)(B)						
20.405(a)(1)(v)	50.73(a)(2)(iii)	<input type="checkbox"/>	50.73(a)(2)(ix)							

LICENSEE CONTACT FOR THIS LER (12)		TELEPHONE NUMBER	
NAME Roger W. Ouellette, Assistant Engineer - Licensing		AREA CODE 7   0   4	3   7   3   -   7   5   3   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
<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)	<input checked="" type="checkbox"/> NO					

ABSTRACT (Limit to 1400 spaces; i.e. approximately fifteen single-space typewritten lines) (16)

On January 9, 1985, at 1430 hours, Reactor Trip Breaker RTB opened on a High Flux Source Range Reactor Trip signal. This signal occurred during the monthly testing of the Solid State Protection System. The reactor did not trip because Bypass Breaker BYB was closed. The Control Room Operator then blocked the trip signal by depressing the Source Range block pushbutton which allowed reclosing of Reactor Trip Breaker RTB.

This incident is classified as a Procedural Deficiency. The procedure used during the test did not prevent a Source Range High Flux Reactor Trip signal from being generated when testing between a P-6 (10-10 amps on the Intermediate Range) condition and a P-10 (10% power) condition. Unit 1 was in Mode 2 at the time of the incident.

This incident is reportable pursuant to 10 CFR 50.73 Section (a) (2) (iv) and 10 CFR 50.72 Section (b) (2) (ii).

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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

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

The Solid State Protection System (SSPS) circuitry is tested monthly using procedure IP/O/A/3200/02 (Solid State Protection System (SSPS) Periodic Test). The test is performed such that each train is tested every other month. The procedure includes sections to test the following SSPS circuitry: logic, permissives, memories, output relays, Containment Spray Actuation, and Safety Injection. Through most of the testing, the Input Error Inhibit switch remains in the "Inhibit" position. This switch allows only test signals to enter that train of the SSPS.

Section 10.7 of IP/O/A/3200/02 is the Spray Actuation Test. This test checks the Containment Spray logic and input relays without operating the output relays. Since the input relays are tested, the Input Error Inhibit switch must be placed in the "Normal" position during this test.

The Source Range Trip Logic circuitry consists of the associated input relays, logic cards, and output relays. The output relays operate the Source Range Detector High Voltage. With the High Voltage applied, and with the Source Range count above  $10^5$  counts per second (cps), a reactor trip signal from the logic card will open the associated Reactor Trip Breaker. This trip signal may be blocked by depressing the Source Range block pushbutton located on the Main Control Board. This pushbutton will also de-energize the Source Range Detector High Voltage. The Trip signal may also be blocked during testing by placing the Input Error Inhibit switch in the "Inhibit" position. Once the reactor exceeds the 10% power level (P-10 condition), the P-10 signal will disable the Source Range Trip Logic.

A reactor trip is accomplished by interrupting power to the Rod Control System. In a normal operating condition, Reactor Trip Breakers RTA and RTB, which are in series with each other, are normally closed. Bypass Breakers BYA and BYB are in parallel with the Trip Breakers and are normally open. Each SSPS train operates one Reactor Trip Breaker and one Bypass Breaker. SSPS Train A operates RTA and BYB. SSPS Train B operates RTB and BYA. Only one train of the SSPS can be tested at any one time. During the test, the associated Bypass Breaker is closed. For example, when SSPS Train B is tested, Bypass Breaker BYB is closed. If a Reactor Trip signal occurs during the test, Train A will open RTA and BYB, thereby removing power to the Rod Control System.

Train B of the SSPS was tested on January 9, 1985. The Intermediate Range neutron count at the time was approximately  $1 \times 10^{-8}$  amps. Before any circuitry was tested, procedure step 10.2.7 verified that the Train B Bypass Breaker (BYB) was closed. Step 10.2.13 had the Technician place the Input Error Inhibit switch in the "Inhibit" position. As far as the Source Range is concerned, this action ensured that the Detector High Voltage remained de-energized (the High Voltage had been previously de-energized by the Operator depressing the Source Range block pushbutton as the unit entered the Intermediate Range Detectors).

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

TEXT (If more space is required, use additional NRC Form 365A's) (17)

During performance of the Memories Check (Section 10.5), the Source Range block signal was removed. Although this signal was removed, the Input Error Inhibit switch prevented the Detector High Voltage from being applied because it was in the "Inhibit" position. Section 10.7 (Spray Actuation Test) requires the Input Error Inhibit switch to be placed in the "Normal" position. When this was accomplished, no Source Range block signals existed, and the Detector High Voltage was applied and energized the Detectors. Since Unit 1 was above the 10<sup>5</sup> cps Source Range trip setpoint, but below the P-10 condition, a Train B Reactor Trip signal was initiated. This caused Reactor Trip Breaker RTB to trip open. An actual Reactor Trip did not occur because Bypass Breaker BYB was closed.

This event is classified as a Procedural Deficiency, because the procedure did not prevent a Source Range High Flux Reactor Trip signal from being generated when testing between the P-6 (10-10 amps on the Intermediate Range) and the P-10 (10% power on the Power Range) conditions.

CORRECTIVE ACTION

- 1) The Control Room Operator depressed the Source Range block pushbutton to de-energize the Source Range Detectors.
- 2) Reactor Trip Breaker RTB was re-closed.
- 3) Procedure Change #10 was written to IP/0/A/3200/02. This change added a step which calls for depressing the Source Range Block pushbutton before the Input Error Inhibit is placed back in the "Normal" position. Steps were also added to ensure that the same actions are performed for the Intermediate Range and Power Range Block Circuitry.

SAFETY ANALYSIS

The Train B Reactor Trip Breaker opened when the actuation signal was applied from the SSPS. The Reactor Trip Breakers are required to open to shut down the unit. RTA and BYB were closed during this incident. These would have opened if a Reactor Trip signal had been generated by SSPS Train A which was in service at the time.

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

DUKE POWER COMPANY

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HAL B. TUCKER  
VICE PRESIDENT  
NUCLEAR PRODUCTION

TELEPHONE  
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February 8, 1985

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 413/85-03 concerning an inadvertent reactor trip breaker actuation during testing. 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 / BT*

Hal B. Tucker

RWO:slb

Attachment

cc: Dr. J. Nelson Grace, Regional Administrator  
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