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FACIL:50-400 Shearon Harris Nuclear Power Plant, Unit 1, Carolina 05000400
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RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 87-065-01:on 871124,first stage turbine pressure setpoints for P-13 incorrectly set due to personnel error. W/8 ltr.

DISTRIBUTION CODE: IE22D COPIES RECEIVED:LTR 1 ENCL 1 SIZE: 5
TITLE: 50.73 Licensee Event Report (LER), Incident Rpt, etc.

NOTES:Application for permit renewal filed. 05000400

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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)
Shearon Harris Nuclear Power Plant Unit 1	0 5 0 0 0 4 0 0	1 OF 0 4

TITLE (4) First Stage Turbine Pressure Setpoints for P-13 permissive were incorrectly set due to personnel error.

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 0 0
1 1	2 4	8 7	8 7	0 6 5	0 1	0 1	1 4	8 8		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
	AREA CODE
R. Schwabenbauer - Regulatory Compliance Technician	9 1 9 3 6 2 - 2 6 6 9

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)

ABSTRACT:

The plant was operating in Mode 1, Power Operation, at 100 percent reactor power on November 24, 1987. At approximately 1500 hours, it was discovered that the first stage turbine pressure setpoints P-13, which unblock reactor trip block permissive P-7 above 10 percent power, were incorrectly set. The installed setpoints were based on pressure equivalent to 10 percent generator load in lieu of 10 percent Rated Thermal Power which is required by Technical Specifications Table 2.2-1, item 19. The P-13 portion of the channel was then declared inoperable at 1635 hours and Technical Specification action statements were put into effect.

Personnel error was responsible for establishing the setpoints in percent load in lieu of percent rated thermal power. Personnel had used a Westinghouse document instead of the SHNPP Technical Specifications to establish the controlling setpoints.

The immediate corrective action was to declare the P-13 channel inoperable and enter applicable compensatory actions.

A plant change request has been initiated to change the setpoints to reflect first stage turbine pressure versus Rated Thermal Power.

This event is being reported in accordance with 10CFR50.73(a)(2)(iv) as a violation of Technical Specifications.

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FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Shearon Harris Nuclear Power Plant Unit 1	0 5 0 0 0 4 0 0	8 7	— 0 6 5	— 0 1	0 2 OF 0 4

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

DESCRIPTION:

The plant was operating in Mode 1, Power Operation, at 100 percent reactor power on November 24, 1987. At approximately 1500 hours, during a review of first stage turbine (EIIS:TA) pressure data taken during power ascension following the October/November outage, it was discovered that the first stage turbine pressure setpoints for P-13 permissive were incorrectly set which unblock reactor trip block permissive P-7 above 10 percent reactor (EIIS:JD) power.

The P-13 permissive is one input to the P-7 permissive. It unblocks P-7 allowing six reactor trips to occur above 10 percent power. P-13 is provided by either PB-446A or PB-447E, both of which were incorrectly set. The incorrect P-13 signal would not have unblocked P-7 until approximately 15 percent Rated Thermal Power (RTP).

The installed setpoints were based on pressure equivalent of 10 percent generator load in lieu of 10 percent RTP as required by Technical Specifications (TS) Table 2.2-1, item 19.

At 1635 hours, the P-13 inputs to P-7 were declared inoperable and TS 3.3.1. Action statement 7 was applied to verify the bistables were in the proper position for the mode of operation. Since the P-13 permissive was in the correct state, the Technical Specification allows continued operation. A Plant Change Request (PCR) was initiated on November 25, 1987 to change P-13 setpoints.

There was no additional operator action required to comply with Technical Specifications.

CAUSE:

The cause of the event was personnel error in the preparation of the initial setpoint. The initial setpoint was specified in percent generator load in lieu of the required percent RTP. The Westinghouse Precautions, Limitations, and Setpoints (PLS) and Thermal Data Kit were used to establish the initial pressure setpoints specified in the site setpoint document. The SHNPP PLS indicates the setpoints for P-13 are to be "Turbine impulse pressure equivalent to 10 percent of full load." The pressure value for 10 percent full load was obtained from the Thermal Data Kit (a correlation of first stage pressure to generator load). Data was also obtained during initial power ascension which verified the first stage turbine pressure data versus percent load. At that time no documentation was available which related turbine impulse pressure to RTP.

SHNPP TS Table 2.2-1 Functional Unit 19, lists the trip setpoint as less than or equal to 10 percent RTP-Turbine Impulse Pressure Equivalent. The 10 percent values listed in both the PLS and the TS were originally believed to be the same.

ANALYSIS:

This event is being reported in accordance with 10CFR50.73(a)(2)(iv) as a violation of Technical Specifications.

The P-13 permissive is one input to the P-7 permissive.

The P-7 interlock performs the following functions:

On increasing power P-7 automatically enables Reactor trips on low flow in more than one reactor coolant loop, reactor coolant pump motor undervoltage and underfrequency, turbine trip, pressurizer low pressure and pressurizer high level. On decreasing power, the above listed trips are automatically blocked.

However, P-7 also receives input from four power range detectors, P-10. When 2 of 4 of these detectors increase to 10 percent RTP, permissive P-10 unblocks P-7. The net result is P-7 has been unblocked by P-10 approximately 1 percent higher than a correctly set P-13 bistable. This is within TS allowable value for P-10 of less than or equal to 12.1 percent RTP. Further, P-10 is designated as the primary signal for P-7 and P-13 is a backup.

Failure of P-10 would have allowed a reactor trip to be blocked until approximately 15 percent RTP. Of the trip signals bypassed by P-7 only low pressurizer pressure, low reactor coolant flow, and RCP under voltage trip are assumed to function in accident analysis.

No accident analysis relies upon the P-7 interlock. Several accident analysis take credit for the trips unblocked by the P-7 interlock. These accidents are specified in FSAR as follows:

-Steam system piping failure (15.1).

-Partial and complete loss of forced reactor coolant flow (15.3).

-Reactor coolant pump shaft seizure (locked rotor) (15.3).

-Uncontrolled rod cluster control bank withdrawal at power (15.4).

-Inadvertent operation of the ECCS during power operation (15.5).

-Inadvertent opening of a pressurizer safety or relief valve (15.6).

-Steam Generator Tube rupture (15.6).

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
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TEXT (If more space is required, use additional NRC Form 366A's) (17)

ANALYSIS: (continued)

With the exception of pressurizer high level, these trip signals provide protection for events where DNB is a critical parameter. The transients where DNB is of concern are analyzed where reactor power pressurizer level and coolant temperatures are at their maximum valve. Based on this, the delay in unblocking of the P-7 interlock due to a failure of the P-10 logic and the incorrect P-13 setting would not present accident consequences greater than those currently evaluated in the FSAR.

There have not been any similar events reported.

CORRECTIVE ACTIONS/ACTIONS TO PREVENT RECURRENCE:

1. A Plant Change Request has been initiated to change the controlled setpoints to reflect first stage turbine pressure versus RTP.

2. The scaling documents and calibration procedures will be revised to incorporate these values.

3. The correct setpoints for P-13 will be field installed.

4. The balance of the Reactor Trip System Trip Setpoints were reviewed, and it was verified that the Technical Specifications Trip Setpoints were consistent with the setpoints specified in the site setpoint document.

CP&L
Carolina Power & Light Company

HARRIS NUCLEAR PROJECT
P.O. Box 165
New Hill, NC 27562

01-14-88

File Number: SHF/10-13510C
Letter Number: HO-870576 (O)

U.S. Nuclear Regulatory Commission
ATTN: NRC Document Control Desk
Washington, DC 20555

SHEARON HARRIS NUCLEAR POWER PLANT UNIT 1
DOCKET NO. 50-400
LICENSE NO. NPF-63
LICENSEE EVENT REPORT 87-065-01

Gentlemen:

In accordance with Title 10 to the Code of Federal Regulations, the enclosed Licensee Event Report is submitted. This report fulfills the requirement for a written report within thirty (30) days of a reportable occurrence and is in accordance with the format set forth in NUREG-1022, September, 1983.

Revision 1 to LER-87-065-00 is being submitted to add an additional corrective action.

Very truly yours,

R A Watson

R. A. Watson
Vice President
Harris Nuclear Project

RAW:ddl

Enclosure

cc: Dr. J. Nelson Grace (NRC - RII)
Mr. B. Buckley (NRR)
Mr. G. Maxwell (NRC - SHNPP)

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MEM/LER-87-065/1/OS1