

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Salem Generating Station - Unit 1										DOCKET NUMBER (2) 0 5 0 0 0 2 7 2 1 OF 0 3										PAGE (3) 1 OF 0 3																					
TITLE (4) Reactor Trip From 8% While Performing Turbine Overspeed Test																																									
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)								
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1 0			2 2			8 4			8 4			0 2			3 0			0 0			1 1			1 6			8 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) 0 0 8						20.402(b)						20.406(e)						<input checked="" type="checkbox"/> 50.73(a)(2)(iv)						73.71(b)																	
						20.406(a)(1)(i)						50.36(e)(1)						50.73(a)(2)(v)						73.71(e)																	
						20.406(a)(1)(ii)						50.36(e)(2)						50.73(a)(2)(vi)						OTHER (Specify in Abstract below and in Text, NRC Form 366A)																	
						20.406(a)(1)(iii)						50.73(a)(2)(i)						50.73(a)(2)(viii)(A)																							
						20.406(a)(1)(iv)						50.73(a)(2)(ii)						50.73(a)(2)(viii)(B)																							
20.406(a)(1)(v)						50.73(a)(2)(iii)						50.73(a)(2)(ix)																													
LICENSEE CONTACT FOR THIS LER (12)																																									
NAME J. L. Rupp												TELEPHONE NUMBER AREA CODE 6 0 9 3 3 9 - 4 3 0 9																													
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																																									
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDOS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDOS																															
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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 October 22, 1984, during Unit startup operations, a turbine overspeed trip test was being performed in accordance with approved procedures. When the turbine trip initiated, a reactor trip occurred. The cause of the reactor trip was the loss of the P-7 permissive, which is designed to block a reactor trip, on turbine trip, below approximately ten percent power level. P-7 permissive, which is provided by signals from turbine first stage pressure and from power range flux channels, was not available due to an erroneous output from one of the turbine first stage pressure transmitters (PT-506). Following this occurrence, both PT-506 and the redundant transmitter (PT-505) were replaced with ones of a different design due to their sensitivity to induced vibration. In addition, the turbine overspeed instruction will be amended to include verification of the P-7 permissive prior to tripping the turbine. This occurrence involved no undue risk to the health or safety of the public. The Reactor Protection System functioned as designed to trip the reactor upon a turbine trip with a signal indicative of reactor power level being greater than ten percent. Due to the automatic actuation of the Reactor Protection System, the event is reportable in accordance with 10CFR 50.73(a)(2)(iv).

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PLANT AND SYSTEM IDENTIFICATION:

Westinghouse - Pressurized Water Reactor

Energy Industry Identification System (EIIS) codes are identified in the text as [XX].

IDENTIFICATION OF OCCURRENCE:

Reactor Trip From 8% While Performing Turbine Overspeed Test

Event Date: 10/22/84

Report Date: 11/16/84

This report was initiated by Incident Report No. 84-164

CONDITIONS PRIOR TO OCCURRENCE:

Mode 1 - Rx Power 008 % - Unit Load 0000 MWe

DESCRIPTION OF OCCURRENCE:

On October 22, 1984, during Unit startup operations, a turbine overspeed trip test was being performed in accordance with Operating Instruction OI-III-1.3.2. At 1544 hours, a reactor trip occurred when the turbine trip initiated. The first out annunciator on the reactor was Turbine Trip and P-7. At 1608 hours, in accordance with the requirements of the Code of Federal Regulations, 10CFR 50.72(b)(2)(ii), the Nuclear Regulatory Commission was notified of the automatic actuation of the Reactor Protection System [JC].

APPARENT CAUSE OF OCCURRENCE:

The cause of the reactor trip was the loss of the P-7 permissive. One of the functions of the P-7 permissive is to block a reactor trip on turbine trip, below approximately ten percent (10%) power level, providing the following coincidence signals are present: 2/2 turbine impulse chamber pressure signals below the setpoint (this signal is provided by P-13), and 3/4 Power Range neutron flux channels less than ten percent (this signal is provided by P-10). Investigation revealed that one of the turbine impulse chamber pressure transmitters (PT-506) was transmitting an erroneous signal which caused a loss of the P-7 permissive, thus preventing the P-7 permissive from blocking a reactor trip on turbine trip.

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ANALYSIS OF OCCURRENCE:

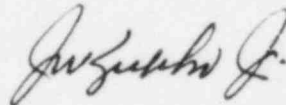
The reactor trip, on turbine trip, is designed to avoid steam generator safety valve actuation in the event that the turbine should trip with reactor power level greater than ten percent (10%). This trip is anticipatory, and is included as part of good engineering practice and prudent design. No credit is taken in any of the safety analyses for this trip. In addition, the failure of PT-506 was in such a direction to remove the P-7 permissive, and assure a reactor trip would be initiated for any turbine trip. Had PT-506 failed in the opposite direction, such that its input to P-13 was always present, a reactor trip would not have been prevented because the output of the other turbine impulse chamber pressure transmitter (PT-505) would have cleared the permissive.

This occurrence involved no undue risk to the health or safety of the public. The Reactor Protection System functioned as designed to trip the reactor upon a turbine trip with a signal indicating that reactor power level was greater than ten percent (10%). Due to the automatic actuation of the Reactor Protection System, the event is reportable in accordance with the Code of Federal Regulations, 10CFR 50.73(a)(2)(iv).

CORRECTIVE ACTION:

Turbine impulse pressure transmitter PT-506 was replaced, calibrated and functionally tested with satisfactory results. Testing with the aid of a recorder to monitor PT-505 and PT-506 did, however, determine that the transmitters were very sensitive to induced vibration. Because of this, an engineering investigation was requested to review the design of the transmitters. A design change was subsequently developed and both transmitters were replaced with ones of a different design.

In addition, the turbine overspeed test instruction, OI-III-1.3.2, will be revised to include verification that the P-7 permissive is satisfied, by verifying that the below P-7 lights on RP-4 for first stage pressure (P-13) and reactor power (P-10) are illuminated.



General Manager-
Salem Operations

JLR:tns

SORC Mtg 84-154



Public Service Electric and Gas Company P.O. Box E Hancocks Bridge, New Jersey 08038

Salem Generating Station

November 16, 1984

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

Dear Sir:

SALEM GENERATING STATION
LICENSE NO. DPR-70
DOCKET NO. 50-272
UNIT NO. 1
LICENSEE EVENT REPORT 84-023-00

This Licensee Event Report is being submitted pursuant to the requirements of 10CFR 50.73(a)(2)(iv). This report is required within thirty (30) days of discovery.

Sincerely yours,

J. M. Zupko, Jr.
General Manager -
Salem Operations

JR:kl1

CC: Distribution

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