

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Salem Generating Station - Unit 2										DOCKET NUMBER (2) 0 5 0 0 0 3 1 1										PAGE (3) 1 OF 4			
TITLE (4) Reactor Trip From 33% - High-High Level No.21 Steam Generator/Turbine Trip																							
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	7	0	7	8	5	8	5	0	1	1	0	0	0	8	0	6	8	5	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 1 3 1 3			20.402(b)				20.406(c)				<input checked="" type="checkbox"/> 50.73(a)(2)(iv)				73.71(b)								
			20.406(a)(1)(i)				50.36(c)(1)				<input type="checkbox"/> 50.73(a)(2)(v)				73.71(c)								
			20.406(a)(1)(ii)				50.36(c)(2)				<input type="checkbox"/> 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)				<input type="checkbox"/> 50.73(a)(2)(viii)(A)												
			20.406(a)(1)(iv)				50.73(a)(2)(ii)				<input type="checkbox"/> 50.73(a)(2)(viii)(B)												
			20.406(a)(1)(v)				50.73(a)(2)(iii)				<input type="checkbox"/> 50.73(a)(2)(ix)												
NAME J. L. Rupp-Operations Licensing Engineer										TELEPHONE NUMBER 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 NRC		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC													
SUPPLEMENTAL REPORT EXPECTED (14)										EXPECTED SUBMISSION DATE (15)										MONTH	DAY	YEAR	
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 July 7, 1985, during unit startup operations, a reactor trip occurred from thirty-three percent reactor power level. The cause of the event was personnel error, with the root cause being attributed to the failure to follow procedures. Specifically, the Nuclear Control Operator relied on memory to place the Steam Generator Water Level Control System in automatic operation, rather than utilizing the approved procedure. The result was a high-high water level in No. 21 Steam Generator, which, in turn, resulted in a turbine trip. By design, the turbine trip caused a reactor trip. This occurrence involved no undue risk to the health or safety of the public. However, because of 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). The individual involved was counselled and handled according to the disciplinary process. An eight hour training session is being conducted at the training simulator for all licensed operators; the emphasis of the training being placed on command and control functions and communications in the control room. A discussion of this event will be included in the appropriate operator training/requalification programs. Verbatim compliance with operating procedures will be stressed.

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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 33% - Turbine Trip Resulting From No. 21 Steam Generator High-High Water Level Signal

Event Date: 07/07/85

Report Date: 08/06/85

This report was initiated by Incident Report No. 85-159

CONDITIONS PRIOR TO OCCURRENCE:

Mode 1 - Rx Power 33 % - Unit Load 260 MWe

DESCRIPTION OF OCCURRENCE:

On July 7, 1985, unit startup operations were in progress. The generator was synchronized to the grid at 1859 hours. After stabilizing plant parameters following synchronization, reactor power and load was thirty-three percent (33%) and 260 MWe respectively. At this time, the Nuclear Control Operator (NCO) proceeded to shift from the Steam Generator Feedwater Regulating Valve Bypass Valves (BF40 Valves) to the Steam Generator Feedwater Regulating Valves (BF19 Valves) for automatic steam generator water level control. Starting with No. 21 Steam Generator, the NCO placed the feedwater regulating valve (21BF19) control in manual. His next action was to close the bypass valve (21BF40); however, upon doing so, No. 21 Steam Generator water level began to decrease. The NCO responded to the lowering water level by placing the controls for 21BF19 in automatic. The Steam Generator Water Level Control System [JB] is normally operated at low power levels with the regulating valve reset control "off", which makes the control system very sensitive to level error. Therefore, when the controls for 21BF19 were placed in automatic, the control system, responding to the level error signal, fully opened 21BF19. This resulted in a rapid increase in No. 21 Steam Generator water level. At 1926 hours, before any effective corrective action could be taken, the water level in No. 21 Steam Generator reached the high-high level setpoint, resulting in a turbine trip. By design, the turbine trip caused a reactor trip.

At 1933 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].

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APPARENT CAUSE OF OCCURRENCE:

The cause of this event was personnel error, with the root cause being attributed to the failure to follow procedures. Specifically, the NCO relied on memory to place the Steam Generator Water Level Control System in automatic operation, rather than utilizing the approved procedure. Contributing to this event was the lack of adequate supervisory involvement during this operation.

ANALYSIS OF OCCURRENCE:

The turbine trip, on high-high level in the steam generator, is an anticipatory trip; the primary function being the prevention of moisture carry-over, and subsequent damage to turbine blading. The primary function of the reactor trip, on turbine trip, is to prevent steam generator safety valve actuation, due to the steam generator pressure increase in the event that a turbine trip occurs during power operation. A turbine trip is sensed by two (2) out of three (3) signals from low autostop oil pressure or all turbine steam stop valves closed signals. A turbine trip causes a direct reactor trip above approximately ten percent (10%) reactor power (P-7 interlock circuitry), and results in a controlled short term release of steam to the turbine condenser. This steam release removes sensible heat from the Reactor Coolant System [AB], thereby avoiding steam generator safety valve actuation. This reactor trip is anticipatory, and included as part of good engineering practice and prudent design. No credit is taken in any of the safety analyses for this trip. Reactor protection during startup operations is provided by the Source Range, Intermediate Range and low setting of the Power Range neutron flux trips. The Reactor Protection System functioned as designed. This occurrence involved no undue risk to the health or safety of the public. Because of 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:

Willful disregard for procedures can not and will not be tolerated. The individual involved was counselled and handled according to the disciplinary process. An eight (8) hour training session is being conducted at the simulator for all licensed operators, including both supervisory and non-supervisory personnel; the emphasis of the training being placed on command and control functions and communications in the control room.

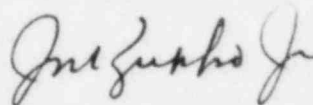
As with PSE&G's policy concerning all personnel error related incidents, a discussion of this event will be included in the appropriate operator training/requalification programs. Verbatim compliance with operating procedures will be stressed.

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CORRECTIVE ACTION: (cont'd)

Additionally, efforts are presently underway to upgrade the Salem simulator training program to include the operation/interaction of the steam generator feedwater regulating valves (BF19's) and their associated bypass valves (BF40's). This modification to the simulator is presently scheduled to be fully operational by August 31, 1985.



General Manager-
Salem Operations

JLR:tns

SORC Mtg 85-114



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

Salem Generating Station

August 6, 1985

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

Dear Sir:

SALEM GENERATING STATION
LICENSE NO. DPR-75
DOCKET NO. 50-311
UNIT NO. 2
LICENSEE EVENT REPORT 85-011-00

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

Sincerely yours,

A handwritten signature in dark ink, appearing to read "J. M. Zupko, Jr.", written in a cursive style.

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

JLR:tcs

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