

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Salem Generating Station - Unit 2 DOCKET NUMBER (2) 050003111 PAGE (3) 1 OF 3

TITLE (4) Reactor Trip From 100% Due to Low Low Level #24 Steam Generator

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)		
08	26	84	84	021	0	09	25	84		05000		
										05000		

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)

OPERATING MODE (9) 1	20.402(b)	20.406(c)	<input checked="" type="checkbox"/>	50.73(a)(2)(iv)	73.71(b)
POWER LEVEL (10) 100	20.406(a)(1)(i)	50.38(e)(1)		50.73(a)(2)(v)	73.71(e)
	20.406(a)(1)(ii)	50.38(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)(vii)(A)	
	20.406(a)(1)(iv)	50.73(a)(2)(ii)		50.73(a)(2)(vii)(B)	
	20.406(a)(1)(v)	50.73(a)(2)(iii)		50.73(a)(2)(viii)	

LICENSEE CONTACT FOR THIS LER (12) NAME: J. L. Rupp TELEPHONE NUMBER: 609 339-4309

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS
B	SJ	SC	E149	Y					
X	SJ	ALM	X999	Y					

SUPPLEMENTAL REPORT EXPECTED (14) YES (if yes, complete EXPECTED SUBMISSION DATE) NO MONTH DAY YEAR

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

On August 26, 1984, during normal power operation, a trip of No. 21 Steam Generator Feed Pump resulted in a steam flow/feed flow mismatch on No. 23 Steam Generator. This was followed by mismatches on the remaining three steam generators. The feed pump trip was not immediately recognized due to the failure to receive the bezel alarm. This resulted in a power reduction delay, and a reactor trip due to low-low water level in No. 24 Steam Generator. No. 21 Steam Generator Feed Pump tripped as a result of a false overspeed trip signal, caused by a failure of the magnetic speed pick-up sensor. The sensor was replaced and aligned to proper specification. The bezel "trip" alarm for No. 21 Steam Generator Feed Pump trip was not received due to a faulty flasher relay in the alarm circuit; the flasher unit was also replaced. The feed pump was tested, with the trip and alarm function operating satisfactorily. The Reactor Protection System functioned as designed to prevent steam generator dry-out and to maintain the reactor heat sink. The occurrence involved no undue risk to the health or safety of the public; however, 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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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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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 Protection System [JC] - Reactor Trip From 100% - Low-Low Level No. 24 Steam Generator

Event Date: 08/26/84

Report Date: 09/25/84

This report was initiated by Incident Report No. 84-130

CONDITIONS PRIOR TO OCCURRENCE:

Mode 1 - Rx Power 100 % - Unit Load 1150 MWe

DESCRIPTION OF OCCURRENCE:

At approximately 1709 hours, August 26, 1984, during normal power operation, a steam flow greater than feed flow was experienced on No. 23 Steam Generator. This was followed shortly by steam flow/feed flow mismatches on the remaining three (3) steam generators. Operators observed that the suction flow to No. 22 Steam Generator Feed Pump (SGFP) was abnormally high, and that No. 21 SGFP indicated no flow. The operators then realized that No. 21 SGFP had tripped, although no bezel alarm was received. An immediate load reduction was initiated; however, at 1711 hours, a reactor trip occurred as the result of No. 24 Steam Generator low-low water level.

APPARENT CAUSE OF OCCURRENCE:

The local annunciator panel for No. 21 SGFP indicated that the pump had tripped on overspeed. Investigation revealed that the pump trip was the result of a false overspeed trip signal. This signal was determined to have been caused by a faulty magnetic speed pick-up sensor, which supplies the speed input to the control tachometer. The "No. 21 SGFP Trip" alarm was not received due to a faulty flasher relay.

ANALYSIS OF OCCURRENCE:

The purpose of the reactor trip, on low-low steam generator level, is to prevent operation with the steam generator water level below the minimum volume required for adequate heat removal; thereby preventing the loss of the reactor heat sink.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

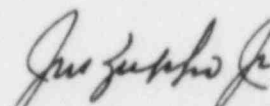
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ANALYSIS OF OCCURRENCE: (cont'd)

The trip is actuated on two (2) out of three (3) low-low water level signals in any steam generator. The setpoint ensures that there is adequate inventory in the steam generators, at the time of the reactor trip, to allow for any possible starting delays of the Auxiliary Feedwater Pumps [BA]; thus preventing steam generator dry-out and the Reactor Coolant System [AB] thermal and hydraulic transients that would be associated with a loss of the heat sink. The Reactor Protection System [JC] functioned as designed, and the heat sink was maintained. The Reactor Coolant System has been designed to withstand the thermal and hydraulic effects of four-hundred (400) reactor trips from full power; therefore, this transient was within the design limits of the system. 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:

The flasher relay for "No. 21 SGFP Trip" alarm was replaced. No. 21 SGFP control tachometer and associated overspeed trip switch were inspected and tested, with satisfactory results. The magnetic speed pick-up exhibited a low resistance reading. This sensor was replaced and aligned to proper specifications. A loop check was performed on the overspeed circuitry, including actual trip of the feed pump. The testing results were satisfactory, with the trip and alarm features functioning as designed. During the subsequent Unit startup, No. 21 SGFP operation was monitored, and its operation was determined to be satisfactory.


General Manager-
Salem Operations

JLR:tns

SORC Mtg 84-126



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

Salem Generating Station

September 25, 1984

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 84-021-00

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,

A handwritten signature in cursive script, appearing to read "J. M. Zupko, Jr.", is written above the typed name.

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

JR:k11

CC: Distribution