

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) R. E. Ginna Nuclear Power Plant										DOCKET NUMBER (2) 0 5 0 0 0 2 4 4				PAGE (3) 1 OF 04		
TITLE (4) Automatic Actuation of Reactor Protection System																
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)			
04	11	85	85	011	01	09	13	85					0 5 0 0 0			
OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5: (Check one or more of the following) (11)														
N		20.402(b)				20.406(a)				<input checked="" type="checkbox"/> 80.73(a)(2)(iv)				73.71(b)		
POWER LEVEL (10)		20.406(a)(1)(i)				80.36(a)(1)				80.73(a)(2)(v)				73.71(a)		
0.07		20.406(a)(1)(ii)				80.36(a)(2)				80.73(a)(2)(vi)				OTHER (Specify in Abstract below and in Text, NRC Form 308A)		
		20.406(a)(1)(iii)				80.73(a)(2)(i)				80.73(a)(2)(vii)(A)						
		20.406(a)(1)(iv)				80.73(a)(2)(ii)				80.73(a)(2)(vii)(B)						
		20.406(a)(1)(v)				80.73(a)(2)(iii)				80.73(a)(2)(viii)						
LICENSEE CONTACT FOR THIS LER (12)																
NAME T. A. Meyer, Technical Manager										TELEPHONE NUMBER						
										AREA CODE 3 1 5 5 2 4 - 4 4 4 6						
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						
B	SIG	- TBIG	W 120	N		B	AA	- RLY	S 4 40	Y						
B	TIG	- 1-5	W 120	N		B	SB	- 33	N 0 15	M						
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 April 11, 1985 an investigation was being conducted to determine the source of a circulating water leak in the main turbine condenser. With condenser vacuum decreasing a manual turbine trip was attempted. The first of two actuations of the manual turbine trip pushbutton failed to result in a turbine trip. This has been attributed to the adjustment of a mechanical stop on the auto stop tripper bar. During the subsequent power reduction a reactor trip occurred as the result of the combination of the turbine being tripped, low condenser vacuum, and reactor power being above the P-7 permissive. Only the "B" reactor trip breaker opened on the reactor trip signal. This was determined to be due to separate vacuum pressure switches for each reactor trip train. An investigation is being undertaken to review the single pressure switch per reactor trip train design.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/85

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R. E. Ginna Nuclear Power Plant

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TEXT (If more space is required, use additional NRC Form 388A's) (17)

At 1130 hours on April 11, 1985, while the reactor was at approximately 25% power, an investigation was being conducted to determine the source of a circulating water leak in the main turbine condenser. While isolating and venting the condenser 1A1 water box, the condenser vacuum began to decrease and the condenser hotwell levels began to fluctuate. With consideration of loss of condensate suction and high condenser back pressure, the decision was made to manually trip the turbine. The actuation of the Main Control Board manual turbine trip pushbutton did not produce a turbine trip, although the turbine bearing oil lockout relay did trip. As personnel were being dispatched to the local turbine trip station, a second attempt was made to actuate the turbine trip from the Main Control Room. This attempt resulted in a turbine trip after approximately a 5 to 10 second delay. The reactor was stabilized at approximately 15% power, with condenser vacuum at approximately 23 in. Hg. and condenser steam dump available. The decision was made to reduce reactor power to approximately 3% to allow the stopping of the running main feedwater pump and to maintain vacuum for the condenser water box inspection. At 1220 hours, at approximately 7% reactor power, a reactor trip occurred as the result of the combination of the turbine being tripped, low condenser vacuum, and reactor power being above the P-7 permissive. The indicated vacuum in the Control Room at the time of the reactor trip was approximately 23 in. Hg. Only the "B" reactor trip breaker opened automatically on the reactor trip signal and the Operations personnel opened the "A" reactor trip breaker by actuation of the Main Control Board manual reactor trip pushbutton. Following the reactor trip the main steam isolation valves (MSIV) were manually closed from the Control Room to limit the reactor cooldown. The reactor was stabilized at hot shutdown conditions.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104

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FACILITY NAME (1) R. E. Ginna Nuclear Power Plant	DOCKET NUMBER (2) 05000244	LER NUMBER (3)			PAGE (3)		
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		85	011	01	03	OF	04

TEXT (If more space is required, use additional NRC Form 305A's) (17)

Various mechanical and electrical problems were encountered following the reactor trip. The control rod bottom indicating light failed to illuminate for control rod H-2. A boron addition to the primary system was initiated per the Emergency Procedure. The actual control rod position was verified by the rod position indicator, a core exit thermocouple map, and by the incore detection system. This problem was determined to be the result of oxidation of a relay contact. The indicating lights for both MSIV's showed the valves to be in the mid-position although they were physically verified to be in the closed position. This was determined to be due to the sticking of valve position limit switches. The nuclear instrument system intermediate range channel N-35 appeared to be overcompensated. This was due to the detector having been replaced during the refueling outage. These problems are similar to those discussed in LER 85-009.

The loss of condenser vacuum has been determined to be due to the isolation and venting of a section of the condenser. This section had been damaged by the failure of a steam impingement baffle plate for drain lines from secondary steam traps and the moisture separator reheaters. Following the baffle plate failure, approximately forty condenser tubes were damaged. The failure of the baffle plate has been attributed to fatigue caused by increased steam loading from upgrading of the secondary system. A new baffle plate has been installed, which incorporates a much stronger design, and the damaged condenser tubes have been plugged.

The failure of the turbine to trip initially from actuation of the Main Control Board manual turbine trip pushbutton has been determined to be due to the adjustment of a mechanical stop for the auto stop tripper bar. This mechanical stop intermittently would not allow the tripper bar to release the auto stop oil fluid. An adjustment was made to the mechanical stop and the trip mechanism was successfully tested. This failure has been described for a previous event in LER 85-007.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMS NO. 3190-0104

EXPIRES 8/31/88

FACILITY NAME (1) R. E. Ginna Nuclear Power Plant	DOCKET NUMBER (2) 0500024485	LER NUMBER (3)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		0	11	01	04	OF	04

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

The cause of the reactor trip has been determined to be the result of a decrease in condenser vacuum due to the ruptured tubes. A two out of three low turbine autostop oil pressure or a two out of two turbine stop valves closed signal will trip the reactor when permissives P-7 and P-9 are present. Permissive P-7 is present when two out of four power range instruments are greater than 8% (three out of four power range less than approximately 6% are needed to clear the permissive) or two out of two turbine first stage pressure channels are greater than 8%. Permissive P-9 is present when steam dump to the condenser is blocked by low vacuum (less than 20 in. Hg.) or loss of both circulating water pumps. The automatic opening of only the "B" reactor trip breaker was determined to be the result of separate vacuum pressure switches for each reactor trip train (one out of one logic.) Pressure switch PS-484A is used in the "A" train and pressure switch PS-484B is used in the "B" train. The pressure switches sense condenser vacuum from a common manifold, also shared by the pressure switches (two) used for the condenser steam dump logic. This is contrary to the training material taught to the Operators on the reactor protection system. Testing following the event verified that the "B" train pressure switch would actuate at 21.7 in. Hg. and the "A" train pressure switch would actuate at 20.3 in. Hg. The slow decrease in condenser vacuum allowed the "B" train to trip prior to the "A" train. The Control Room indication at the time of the trip was approximately 23 in. Hg., this was due to the sensing line for its transmitter being located at a different point in the condenser.

Although the system responded per design, R.G. & E. is investigating the desirability of a logic change to have each pressure switch trip each reactor protection train. The actuation setting of the "B" train pressure switch has been lowered to coincide with the "A" train switch. This LER and LER's 85-005 through 85-010, that were associated with the 1985 refueling outage startup, will be reviewed with the Operators.

An Engineering Work Request (EWR) has been initiated to study, design, procure and install as necessary a modification to the reactor protection logic circuits. As stated above, the reactor protection system responded as per design and this design was determined to provide adequate reactor trip protection. As such, this EWR has been assigned a lower priority (Category D) and will be implemented when resources become available.



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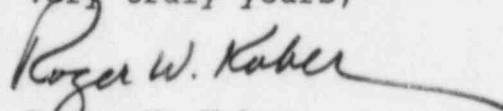
September 13, 1985

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

Subject: LER 85-011-01, Automatic Actuation of the Reactor
Protection System (RPS)
R.E. Ginna Nuclear Power Plant
Docket No. 50-244

In accordance with 10 CFR 50.73, Licensee Event Report System, item (a)(2)(iv) which requests a report of, "any event or condition that resulted in manual or automatic actuation of any Engineered Safety Feature (ESF), including the Reactor Protection System (RPS)", the attached Revision 1 to Licensee Event Report LER 85-011 is hereby submitted.

Very truly yours,


Roger W. Kober

RWK/lms

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