

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Zion Unit 1										DOCKET NUMBER (2) 0 5 0 0 0 2 9 5 1 OF 0 3										PAGE 18					
TITLE (4) Failure to Periodically Test Service Bus Undervoltage Start of Steam Driven Aux. fw Pump																									
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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0 8 0 6 8			5 8 5 - 0 2 8 - 0 1 0 9 2 3 8 5															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)																						
1			20.402(b)					20.406(e)					80.73(a)(2)(iv)					73.71(b)							
POWER LEVEL (10)			20.406(a)(1)(i)					80.36(c)(1)					80.73(a)(2)(v)					73.71(e)							
01 9 8			20.406(a)(1)(ii)					80.36(c)(2)					80.73(a)(2)(vii)					OTHER (Specify in Abstract below and in Text, NRC Form 366A)							
			20.406(a)(1)(iii)					X 80.73(a)(2)(i)					80.73(a)(2)(viii)(A)												
			20.406(a)(1)(iv)					80.73(a)(2)(ii)					80.73(a)(2)(viii)(B)												
			20.406(a)(1)(v)					80.73(a)(2)(iii)					80.73(a)(2)(ix)												
LICENSEE CONTACT FOR THIS LER (12)																									
NAME										TELEPHONE NUMBER															
Xavier Polanski										AREA CODE															
Xavier Polanski, Tech Staff Engineer										3 1 2 7 4 6 - 2 0 8 4															
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	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDOS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDOS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDOS	
D				No																					
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)																									
<p>During a review of Technical Specification surveillance requirements, it was discovered that the service bus undervoltage start of the steam-driven Aux. Feedwater Pump, is not periodically tested. The Tech. Spec.-required test frequency is on a refueling interval. A new procedure to test the automatic start was prepared and performed successfully with the unit at power. The protection afforded by this feature is not employed in the plant safety analysis.</p> <p>Further investigation identified another failure to meet Technical Specifications. Due to a procedural deficiency, the relays, which start the aux. feedwater pumps on low-low steam generator level, were not being tested for three of the four steam generators. An investigation of computer alarm typer records showed that all relays had operated properly during the most recent testing. A check of all of the relays will be incorporated in future tests.</p>																									
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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

APPROVED OMB NO. 3150-0104

EXPIRES 8/31/85

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)		
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Zion Unit 1	0500029585	—	028	—	01	02	OF 03

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

During a review of the surveillance requirements specified in Technical Specification Table 4.4-1, it was discovered that the service bus undervoltage start of the steam-driven Aux. Feedwater pump is not periodically tested. The Tech. Spec. table requires such testing on a refueling interval. The logic is the same as that for the bus undervoltage reactor trip (an undervoltage signal on 2/4 service buses) which is tested monthly. However, for the Aux. Feedwater Pump start, the logic matrix feeds a time-delay relay. During monthly reactor trip testing, a coincidence is not normally made up long enough for that relay to time out. Consequently, neither the operation of the relay, nor its ability to start the pump is tested.

The plant was in Mode 1 at the time of this discovery. NRC Region III was contacted, and it was agreed that the best course of action would be to continue operation and immediately prepare test procedures. A new procedure, PT-5C, was written to test the pump start while the plant is operating. It consists of setting up for rx. trip logic testing, and then holding the undervoltage test switches, for each combination, long enough for the time delay relays to operate the solenoid for the aux feedwater pump steam admission valve. The test was completed successfully. The procedure, or one similar to it, will be placed on the surveillance schedule by 11-15-85.

It was noted during this investigation that the protection afforded by the automatic start is not employed in the plant's safety analysis. A Tech. Spec. change to delete the testing requirement will be considered.

Because this protection is not employed in the safety analysis, effects on the public health and safety, of failing to perform this testing, are negligible. This is the first known occurrence of this type of failure to test.

Subsequent investigations uncovered another failure to comply with Technical Specifications. It was discovered that operation of the relays that automatically start the aux. feedwater pumps, on low-low steam generator level, is not tested for all steam generators. There is, associated with each steam generator, a Train A AFP relay, and a Train B AFP relay. Their coils are operated by contact coincidences from the three level channels on their respective generator. Operation of any one AFP relay will start one of the two motor-driven pumps, while operation of any two AFP relays in the same train (representing low-low levels on two steam generators), will start the steam-driven pump. Test switches are provided to make up the level logic in any combination on a given steam generator, and they are used for monthly test of the reactor trip on low-low steam generator level. Although the procedure requires the rx. trip to be verified for each combination of 2/3 level channels on each steam generator, the auto start of the aux. feedwater pump is done only once, for the first combination of level channels on the first steam generator tested. The pump is left running during testing of other level channels. This verifies operation of the AFP relays for the first generator. However, there is no verification of operation of the AFP relays for the other three steam generators. This is a violation of Technical Specification Table 4.4-1, which requires quarterly testing of aux. feedwater pump start on low-low steam generator level.

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A discussion was held with NRC staff concerning testing requirements. It was agreed that start of each pump for each combination of level channels was not required. Testing of every single contact on each relay is not required. What is required is testing that all relay coils function properly.

Investigation revealed a printed computer alarm for each operation of an AFP relay. Immediate review of alarm typer printed output showed that each AFP relay had cycled for each combination of 2/3 of its respective level channels during the most recent Reactor Protection Test, PT-5. Therefore, it has been proven that all AFP relays functioned properly.

The root cause is procedural deficiency. To correct this, PT-5 will be revised by 10/1/85 to require verification of the computer alarm or a local check of relay actuation, for each combination of level channels on each steam generator.

Discussion with three other Westinghouse plants indicate that the shortcoming is unique to Zion.

The systematic review that uncovered both of these problems included all surveillances required by Technical Specifications; therefore, we believe that these are isolated occurrences.



Commonwealth Edison

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Telephone 312/746-2084

September 23, 1985

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

References: 10CFR50

Dear Sir:

The enclosed revised Licensee Event Report from Zion Generating Station is being transmitted to you in order to provide information regarding a related event.

This report is number 85-028-01, Docket No.50-295/DPR-39.

Very truly yours,

G. J. Pliml
Station Manager
Zion Generating Station

GJP/gn

Enclosure: Licensee Event Report No. 85-028-01

Attachment

cc: J. G. Keppler, NRC Region III Administrator
M. Holzmer, NRC Resident Inspector
INPO Record Center
CECo Distribution List

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