



Commonwealth Edison

Zion Generating Station
101 Shiloh Blvd.
Zion, Illinois 60099
Telephone 708 / 746-2084

March 7, 1994

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

Dear Sir:

The enclosed Licensee Event Report number 94-002-00, Docket No. 50-304/DPR-48 from Zion Generating Station is being transmitted to you in accordance with the requirements of 10CFR50.73(a)(2)(i)(b), which requires a 30 day written report when any operation or condition occurs that is prohibited by the plant's Technical Specifications.

Very truly yours,


E. A. Broccolo
Station Manager for
Zion Generating Station

EAB/neb

Enclosure: Licensee Event Report

cc: NRC Region III Administrator
NRC Resident Inspector
INPO Record Center
CECo distribution List

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LICENSEE EVENT REPORT (LER)

Form Rev 3.0

Facility Name (1) Zion Unit 2	Docket Number (2) 0 5 0 0 0 3 0 4	Page (3) 1 of 0 2
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Title (4)
Exceeded Limiting Condition for Operation 3.7.2. Action e for Placing Unit in Mode 4 with a Turbine-Driven and Motor-Driven AFW Pump Inoperable.

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 3	0 7	9 4	9 4	--- 0 0 2 ---	0 0 0 4	0 7	9 4		Zion Unit 1	0 5 0 0 0 2 9 5	

OPERATING MODE (9) 3	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10CFR (Check one or more of the following) (11)										
POWER LEVEL (10) 0 0 0	<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.405(c)	<input type="checkbox"/> 50.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)							
	<input type="checkbox"/> 20.405(a)(1)(i)	<input type="checkbox"/> 50.36(c)(1)	<input type="checkbox"/> 50.73(a)(2)(v)	<input type="checkbox"/> 73.71(c)							
	<input type="checkbox"/> 20.405(a)(1)(ii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(vi)	Other (Specify							
	<input type="checkbox"/> 20.405(a)(1)(iii)	<input checked="" type="checkbox"/> 50.73(a)(2)(i)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)	in Abstract							
	<input type="checkbox"/> 20.405(a)(1)(iv)	<input type="checkbox"/> 50.73(a)(2)(ii)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)	below and in							
	<input type="checkbox"/> 20.405(a)(1)(v)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(x)	Text)							

LICENSEE CONTACT FOR THIS LER (12)

Name Norman E. Shelton, Operating	ext. 3078	TELEPHONE NUMBER AREA CODE 7 0 8 7 4 6 - 2 0 8 4
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COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORTABLE TO NPRDS
0				N					

SUPPLEMENTAL REPORT EXPECTED (14)

<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)	<input checked="" type="checkbox"/> NO	Expected Month	Expected Day	Expected Year

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

On March 7, 1994, during Technical Staff Surveillance (TSS) 15.9.43, "Endurance Testing of Diesel Generators During Refueling", the 2A Auxiliary Feedwater Pump (AFW) [BA] tripped on overspeed. At 0533 hours, the 2A AFW pump was declared inoperable and a Periodic Test (PT)-14, "Technical Specification Related Inoperable Equipment Test Sheet," was initiated. At 0618 hours, the 2B Diesel Generator (DG)[EK] began experiencing frequency swings and was manually tripped. The 2B DG was also declared inoperable and a PT-14 was initiated. On March 8, 1994, it was determined that Technical Specification (Tech Spec) LCD 3.7.2 Action e should have been entered at 0618 hours on March 7, 1994 due to Tech Spec 3.0.5 applicability for the redundant motor driven AFW pump inoperability.

The cause of this event is procedural deficiency. PT-14 did not require Licensed Operators to review Tech Spec 3.0.5 for applicability and it did not reference the Zion Operability Determination Manual. The cause of the 2A AFW pump trip is still being investigated, and the cause of the 2B DG failure was zebra mussels in the lube oil and jacket water coolers and a blown fuse.

Corrective Actions include revising PT-14, continuing to investigate the 2A AFW pump, removing the zebra mussel shells, and replacing the blown fuse.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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

A. CONDITION PRIOR TO EVENT

MODE 3 - Hot Standby RX Power 0 % RCS [AB] Temperature/ Pressure NOT / NDP psig

B. DESCRIPTION OF EVENT

On March 7, 1994, Unit 2 was in Mode 3, performing Technical Staff Surveillance (TSS) 15.6.43, "Endurance Testing of Diesel Generators During Refueling." During TSS 15.6.43, the 2A Auxiliary Feedwater [BA] Pump (AFW) [BA] tripped after being started due to overspeed. At 0533 hours, the 2A AFW pump was declared inoperable per Technical Specification (Tech Spec) 3.7.2 Action c, and a Periodic Test (PT)-14, "Tech Spec Related Inoperable Equipment Test Sheet," was initiated. The AFW Headers were split at 0606 hours. With a turbine driven AFW pump inoperable, both motor driven feedwater pumps are required to be operable with the normal and emergency AC and DC power supplies also being operable.

At 0618 hours, the 2B Diesel Generator (DG) began experiencing frequency swings and was manually tripped. The 2B DG was declared inoperable per Tech Spec 3.15 and a PT-14 was initiated. However, the series of questions and checks of the PT-14 procedure does not require licensed personnel to check Technical Specification 3.0.5 and the correlation was not drawn.

On March 8, 1994, the question was raised concerning the inoperable 2A AFW pump and the operability status of the associated motor driven AFW pump with the 2B DG being inoperable. Subsequently, at 1000 hours, it was determined that Technical Specification LCO 3.7.2 Action e should have been entered at 0618 hours on March 7, 1994 which requires that the Unit be placed in Mode 4 (Hot Shutdown with Tavg less than or equal to 350°F) within 20 hours due to 2A AFW pump being inoperable and 2C AFW pump being technically inoperable due to its AC power source from 2B DG being inoperable. A 20 hour clock to Mode 4 was started at 1000 hours. A Unit cooldown was commenced and Unit 2 entered Mode 4 on 03/09/94 at 0130 hours. This resulted in exceeding the 20 hour Limiting Condition for Operation, 3.7.2 Action e, to go to Mode 4 by 23 hours and 12 minutes.

C. APPARENT CAUSE OF EVENT

The cause of this event is procedural deficiency. PT-14, which is utilized to status and track inoperable equipment, did not require reviewing Technical Specification 3.0.5 for applicability or referencing the Zion Operability Determination Manual (ZODM).

The cause of the 2A AFW pump tripping due to overspeed had not yet been determined. Extensive testing has been ongoing since this event, but no conclusions have been able to be made.

The cause of the 2B DG frequency swings was component failure. Two problems occurred simultaneously on the 2B DG. The first problem was that zebra mussel shells were found in the lube oil and jacket water coolers. These shells blocked the flow through the coolers and caused the increase in lube oil and jacket water temperatures that were seen by the equipment operator before the DG was manually tripped. These shells were from the fire protection header that was used for DG cooling water during the dual unit service water outage. The second problem was that a potential transformer fuse failed in the voltage regulator sensing circuit. Without this fuse the sensing voltage had no reference and was erratically driving the circuit.

D. SAFETY ANALYSIS OF EVENT

The AFW system provides a reliable source of water to the steam generators for decay heat removal. The turbine-driven AFW or one of the two motor-driven AFW pumps are capable of meeting the decay heat removal demands for the unit during accident conditions. However, with only one motor-driven AFW pump available, the accident analysis is not met which assumes one active failure in coincident with a loss of offsite power. Although the margin of safety was impacted, there was no safety significance during this event because one motor-driven AFW pump was available.

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E. CORRECTIVE ACTIONS

1. PT-14 was revised to require a Licensed Shift Supervisor review of Technical Specification 3.0.5 applicability and ZODM review for each PT-14 initiated.
2. System Engineering is still determining the cause of the 2A AFW pump failure. The results will be documented under 304-200-94-CAT3-066.
3. The zebra mussel shells were removed from the 2B DG tube oil and jacket water coolers. The coolers for the 0 DG and the 2A DG were inspected and little or no shells were found. The coolers for the 1A and 2A DG's were not inspected, but testing was performed to verify that the DG's were operable.

F. PREVIOUS EVENTS

LER 2-92-004 documented an event where the 2A EDG and the 2A safety injection pump were both inoperable and Zion Unit 2 entered Technical Specification 3.0.3. The corrective actions from LER 2-92-004 would not have prevented LER-2-94-002.

G. COMPONENT FAILURE DATA

None