



Commonwealth Edison

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

February 9, 1993

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

Dear Sir:

The enclosed supplemental Licensee Event Report Number 89-008-01, Docket No. 50-295/DPR-39 from Zion Generating Station is being transmitted to you to update the event description, the safety analysis of the event, and the corrective actions taken.

Very truly yours,

for *W. R. Kunch*
T. P. Joyce
Station Manager
Zion Generating Station

TPJ/dmb

Enclosure: Licensee Event Report

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

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PDR ADOCK 05000295
S PDR

ZDVRLER-583(2)

JEH

LICENSEE EVENT REPORT (LER)

Form Rev 2.0

Facility Name (1) Zion Unit 1										Docket Number (2) 0 5 0 0 0 2 9 5					Page (3) 1 of 0 3					
Title (4) C. S. Room Cooler Service Water Supply Discrepancy																				
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	6	0	9	8	9	8	9	---	0	0	8	---	0	1	0	2	0	8	9	5
OPERATING MODE (9)			THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10CFR (Check one or more of the following) (11)																	
LOWER LEVEL (10) 0 9 9			20.402(b)				20.405(c)				50.73(a)(2)(iv)				73.71(b)					
			20.405(a)(1)(i)				50.36(c)(1)				<input checked="" type="checkbox"/> 50.73(a)(2)(v)				<input type="checkbox"/> 73.71(c)					
			20.405(a)(1)(ii)				50.36(c)(2)				<input checked="" type="checkbox"/> 50.73(a)(2)(vii)				Other (Specify in Abstract below and in Text)					
			20.405(a)(1)(iii)				50.73(a)(2)(i)				50.73(a)(2)(viii)(A)									
			20.405(a)(1)(iv)				50.73(a)(2)(ii)				50.73(a)(2)(viii)(B)									
20.405(a)(1)(v)				50.73(a)(2)(iii)				50.73(a)(2)(x)												
LICENSEE CONTACT FOR THIS LER (12)																				
Name Brad Usyak, Tech Staff Engineer										TELEPHONE NUMBER AREA CODE 7 0 8 7 4 6 - 2 0 8 4										
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	///									
					///						///									
SUPPLEMENTAL REPORT EXPECTED (14)										Expected Submission Date (15)				Month Day Year						
<input type="checkbox"/> 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)																				

During a review of Containment Spray (CS)[BE] Pump Cubicle Room Cooler service water (SW) [BI] supply piping configuration, it was identified that a potential problem exists concerning the service water system's ability to supply both room coolers with the current piping configuration and the cross-tie valves OSW0341 and OSW0342 in the normally closed position. The cause of the condition is a probable design deficiency and procedural deficiencies. It was subsequently determined during an engineering evaluation that the CS system is capable of performing its design function in the event of a loss of all cooling to the cubicle coolers. In addition, valves OSW0341 and OSW0342 are now procedurally maintained open to ensure that a redundant supply is available.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

Form Rev 2.0

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)						Page (3)		
		Year		Sequential Number		Revision Number		C	OF	
Zion Unit 1	0 5 0 0 0 2 9 5	8	9	-	0	0	8	-	0	1
TEXT	Energy Industry Identification System (EIIIS) codes are identified in the text as [XX]									

A. CONDITION PRIOR TO EVENT

MODE 1 - Power Operation RX Power 99% RCS [AB] Temperature/ Pressure 559 °F/ 2235 psig

B. DESCRIPTION OF EVENT

During a review of room cooler Service Water (SW) [BI] supply configuration, it was identified that a potential problem exists concerning the SW system's ability to supply both containment spray (CS) [BE] room coolers, given the plant's current SW piping configuration and the normal position of cross-tie valves 0SW-341 and 0SW0342 (normally closed). With these valves closed, the potential exists that during a safety injection actuation on one unit, SW will be supplied to one containment spray room cooler. The configuration is potentially in conflict with the FSAR which states that "essential coolers are provided with two cooling water supplies by loop headers coming off the main header".

The SW system is configured such that the CS [BE] cubicle room coolers, AV008 and AV009, are supplied SW in parallel and the outlets merge into a single header which then supplies the diesel engine cooler, CS003. A solenoid operated valve, SOV-SW0153, opens when the engine starts and allows SW to flow through the engine cooler. Therefore, if the solenoid valve failed to open when required, cooling would not be available to the cubicle room coolers or to the diesel engine. Upon discovery of this condition, steps were taken to maintain the necessary cooling water supplies by administratively controlling valves 0SW-0341 and 0SW-0342 in the open position as well as opening the CS [BE] diesel cooling water supply solenoid bypass valves, 1/2SW-1614. An engineering evaluation was initiated to determine the effects on the system in a worst case configuration.

C. APPARENT CAUSE OF EVENT

The cause is attributed to design and procedural oversight with regards to this portion of the SW system. Specifically, the proper configuration for cross-tie valves 0SW0341 and 0SW0342 was reviewed. Having the cross-tie valves open allows the coolers to have a redundant service water supply source.

D. SAFETY ANALYSIS OF EVENT

During the performance of operational Performance Tests (PTs) and maintenance runs, equipment provides a heat input within the CS pump room that is removed by SW cooling. Without the SW cooling, the long term reliability of the equipment will be decreased. The 1C and 2C CS [BE] pumps are diesel driven and require a cooling supply to maintain normal operating temperatures. Therefore, if SOV-SW0153 failed to open, the diesel engines would be operated at high temperatures which is not conducive to long term reliability of this equipment.

An analysis was performed to determine the actual heat load on the coolers in an accident situation and assess the need for room coolers. Sargent & Lundy issued a report, at the request of W.A. Mammoser (CECo), which evaluated the operability of equipment located in the Containment Spray (CS) pump room at the elevated temperature transient caused due to loss of HVAC cubicle coolers. The report was summarized in a letter, Chron #114099, issued by W.A. Mammoser of the ENC Projects Department to Zion Station on 10/25/91. The evaluation was performed due to the piping configuration of the Service Water (SW) piping supplying the HVAC cubicle room coolers and the diesel driven 1C & 2C CS pumps. The evaluation concluded that all the equipment within the CS pump room would perform the design function at the elevated temperature caused by the loss of the HVAC cubicle room coolers.

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		Year		Sequential Number		Revision Number									
Zion Unit 1	0 5 0 0 0 3 0 4	8	9	-	0	0	8	-	0	1	0	3	OF	0	3

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

D. SAFETY ANALYSIS OF EVENT (Continued)

The letter is not and will not be interpreted as justification for continued operation of the CS system due to any future problems associated with the SW cooling.

The CS pump room coolers and associated SW cooling equipment will still be maintained as important, safety related equipment and any problems with the equipment will be dealt with in a timely fashion.

E. CORRECTIVE ACTIONS

Immediate corrective action was to open the cross-tie valves, 0SW0341 and 0SW0342, and place them under an administrative out of service. Currently, these valves are maintained as normally open valves in accordance with SOI-61, "Service Water Valve Lineup". This will ensure that a redundant supply of SW is available to all essential coolers in accordance with the FSAR.

Additionally, the bypass valve for SOV-SW0153, SW-1614, was taken OOS administratively open per the Shift Engineer to assure SW flow to the room coolers and the diesel driven pump in the event of SOV-SW0153 failing to open. Upon receipt of the engineering evaluation, the administrative OOS for the bypass valve SW-1614 was removed and the valve was placed in the normally closed position.

F. PREVIOUS EVENTS

A previous events search was conducted. No events were found that involved similar design and procedural oversight relative to the Service Water System.

G. COMPONENT FAILURE DATA

None