



Commonwealth Edison

Zion Generating Station
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May 16, 1994

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

Dear Sir:

The enclosed Licensee Event Report number 94-003-01. Docket No. 50-304/DPR-48 from Zion Generating Station is being transmitted to you to update the corrective actions taken.

Very truly yours,

E. A. Broccolo
Station Manager
Zion Generating Station

EAB/sks

Enclosure: Licensee Event Report

cc: NRC Region III Administrator
NRC Resident Inspector
INPO Record Center
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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

Form Rev 3.0

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)						Page (3)				
		Year	/// /// ///	Sequential Number	/// /// ///	Revision Number						
Zion Unit 2	0 5 10 0 0 3 0 4	9	4	-	0	0	3	-	0	1	0 2 OF	0 3

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

A. CONDITION PRIOR TO EVENT

MODE 5 - Cold Shutdown RX Power 0 % RC: [AB] Temperature/ Pressure <200°F/<400 psig

B. DESCRIPTION OF EVENT

On 03/05/94 at 1230 Unit 2 left mode 5 and went to mode 4. Prior to start up all four steam generators (SG) [SB] are sampled daily for pH, sulfate, chloride and sodium.

At 0930 on 03/08/94 during daily analyses, 2D steam generator was discovered to have an unusually low pH of 6.0. To provide verification of these unusual results, 2D SG was resampled. The resample of 2D SG confirmed the pH result of 6.0. Chemistry then requested boron and isotopic analysis to be performed on 2D SG. The boron results were completed first and indicated a primary to secondary leak.

The chemist immediately went to the sample room to check the inline instrumentation indications. The chemist sequenced the inline sample sequencer to analyze 2D SG.

At this same time the Operating Department received the Unit 2 Steam Generator Blowdown Radiation Monitor [IL] 2RE0019 alarm and notified the Radiation Protection (RP) Department. When RP notified Chemistry that 2RE0019 had alarmed, Chemistry reviewed the Technical Specifications and determined that this monitor was required to be operable in modes 1, 2, 3, 4, and 7. Chemistry recognized that the sequencer was manipulated at the same time that the radiation monitor alarmed and questioned the relationship between the monitor and the sequencer.

Further investigation found that the radiation monitor does not receive sequenced flow and subsequently is not operable unless the sequencer is energized. In addition, the sequencer has a sampling capability of 30 seconds, 30 minutes, or 30 hours. The sequencer was found to be set at a sample frequency of 30 hours even though the standard frequency setting is 30 minutes. If the sequencer had been set at the recommended frequency of 30 minutes, and the sample isolation valves opened the radiation monitor would have identified the leak sooner. Because the necessary condition, 30 minute time sequence, adequate flow and opened sample valves were not met, 2RE0019 should have been declared inoperable. When 2RE0019 is inoperable, shiftly SG samples must be obtained per Technical Specification 3.14-1 Action Statement #26. Since the SG samples were not being obtained on a shiftly basis, the Technical Specification for 2RE0019 was not met.

C. APPARENT CAUSE OF EVENT

The cause of this event was procedural deficiency. Zion Station Procedures do not document that the operability of 2RE0019 is dependent on flow being established through the sequencer.

D. SAFETY ANALYSIS OF EVENT

The inoperable condition of 2RE0019 prevented qualitative sampling of steam generator blowdown. While this inoperable condition raises safety concerns, the safety significance of this specific event is minimal because the unit was shutdown at the time of the event.

Per Technical Specification 3.14, Table 3.14-1, 2RE0019 is required to operable during modes 1, 2, 3, 4, and 7. With the monitor inoperable, Tech Spec requires isotopic grab samples to be taken at least once per shift. The Tech Spec action requirement was not performed because the operability requirements for 1(2)RE0019 were not defined or proceduralized therefore inoperability of the monitor went unnoticed. As a result, the leak in the 2D SG went undetected for a period of time.

The undetected leak led to the contamination of some portions of the secondary side. The areas that were contaminated were relatively small, and the activity was very low. Had grab sample been taken per the Tech Spec action statement, the leak could have been detected earlier and corrective actions begun immediately.

This event did not impact the health and safety of the public. This is because in a steam generator tube rupture accident, the mechanism for spreading contamination to the surrounding area involves the opening of the atmospheric valves. During this event these valves were not opened, however, steam from 2D SG was briefly routed to 2A Auxiliary Feedwater (AFW) [BA] pump which is released through turbine exhaust. In mode 3, Reactor Coolant System (RCS) [AB] noble gas and iodine activity is almost zero compared to that at full power. Additionally, carryover of particulate was minimal as verified by isotopic analysis of the condenser.

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D. SAFETY ANALYSIS OF EVENT (Continued)

Had the leak occurred at power, there are other mechanisms besides the blowdown radiation monitor to detect a primary to secondary leak. One is the RCS leak rate, which tracks the RCS inventory. Also, there are the Air Ejector and Steam Line radiation monitors which are capable of detecting a primary to secondary leak once steam is being produced and a vacuum is developed in the condenser.

E. CORRECTIVE ACTIONS

1. A sample was immediately taken for 2RE0019 per Technical Specification Table 3.14-1 Action Statement #26. 2RE0019 was also placed on a shiftly manual sampling frequency.
2. General Operating Procedure (GOP) -1, "Plant Heatup", will be changed for Operating to notify Chemistry to verify that the SG sample sequencer is running and that it is set at a 30 minute sampling frequency prior to entering mode 4. (304-180-94-00301)
3. Chemistry has installed a label on the SG blowdown sequencer to indicate that the sequencer must be set at a 30 minute sample frequency.
4. ZOOM-AR, "Area Radiation Monitors", and ZOOM-SS, "Primary Sample System" will be changed to include the operability requirements for 1RE0019 and 2RE0019. In addition, System Engineering and RP will examine the operability requirements for all radiation monitors and update the ZOOM as necessary. (304-180-94-00302)
5. ZRP 5820-12 Sections 76 and 81 will be changed to include the operability requirement that the SG sample sequencer must be energized with sequencing set at a 30 minute sample frequency and flow >350 cc/min for 1RE0019 and 2RE0019 to be operable. (304-180-94-00303)
6. The Chemistry Department will perform flow verification and check SG Sample sequencer function on a shiftly basis. This action will be documented on Zion Chemistry Procedure 401 Table 55. (304-180-94-00304)
7. System Engineering will change Technical Staff Surveillance (TSS) 15.6.35, "Manual Actuation of the Safety Injection and Safe Shutdown Systems and Diesel Generator Loading Test", and TSS 15.6.43, "Endurance Testing of Diesel Generators During Refueling", to ensure that the SG blowdown valves that go closed during the performance of the tests are opened after each section is performed. (304-180-94-00305)
8. The Radiation Protection Department will include any activity that was released during this event in the 1994 annual effluent report. (304-180-94-00306)

F. PREVIOUS EVENTS

LER 1-92-017 documented a missed Technical Specification Action Statement on IRT-PR26 due to a procedural deficiency. The corrective actions from LER 1-92-017 would not have prevented LER 1-94-003. LER 1-93-005 documented a missed Technical Specification Action Statement on ORIA-PR32 due to an undetermined cause. The corrective actions from LER 1-93-005 would not have prevented LER 1-94-003.

G. COMPONENT FAILURE DATA

None