

U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

REGION III

Report No. 50-295/79-11, 50-304/79-11

Docket No. 50-295; 50-304

License No. DPR-39; DPR-48

Licensee: Commonwealth Edison Company
Post Office Box 767
Chicago, IL 60690

Facility Name: Zion Nuclear Power Station, Units 1 and 2

Inspection At: Zion Site, Zion, IL

Inspection Conducted: April 30-May 18, 1979

Inspector: *R. L. Spessard*
J. E. Kohler

6/14/79

Approved By: *R. L. Spessard*
R. L. Spessard, Chief
Reactor Projects Section 1

6/14/79

Inspection Summary

Inspection on April 30-May 18, 1979 (Report No. 50-295/79-11;
50-304/79-11)

Areas Inspected: Special inspection of the operator training conducted as a result of the Three Mile Island incident, complete review of engineered safety features systems, modifications to safety injection logic, and licensee's response to IE Bulletin No. 79-06, 06A and 06A Rev. 1. The inspection involved 71 hours of onsite inspection by one NRC inspector.

Results: No items of noncompliance were identified.

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DETAILS

1. Persons Contacted

- *N. Wandke, Station Superintendent
- *C. Schumann, Operating Assistant Superintendent
- *E. Fuerst, Unit 1 Operating Engineer
- R. Ward, Unit 2 Operating Engineer
- F. Stecha, Engineering Assistant
- T. Oling, Engineering Assistant
- B. Lowe, Training Instructor
- F. Stetkar, Shift Foreman
- T. Boyce, Shift Engineer
- K. Garside, Shift Foreman
- J. Harbin, Shift Engineer
- G. Armstrong, Shift Engineer
- G. Rowe, Nuclear Station Operator
- R. Landrum, Nuclear Station Operator
- D. Kaley, Nuclear Station Operator
- N. Val... , Shift Foreman
- F. L... , Shift Foreman
- F. Pauli, Shift Engineer
- L. Pruettt, Shift Foreman
- C. Keene, Nuclear Station Operator
- J. Brandes, Nuclear Station Operator

2. Review of Operator Training on Three Mile Island Incident

- a. The inspector met with various operators of each shift and unit during the three working shifts to determine whether the operators had received training regarding procedure changes initiated as a result of IE Bulletin No. 79-06, No. 79-06A and No. 79-06A, Revision 1.

Two procedure changes resulted from the bulletin that required operator cognizance. These changes dealt with the following:

- (1) Actuation of the safety injection system based on a two out of three low pressurizer pressure logic and temporary annunciator response when one pressure channel is in test.
- (2) Additional precautions regarding isolation of the power operated relief valves during operation and

operator notification that setpoints for power operated relief valve actuation will be changed to comply with IEEE requirements.

All discussions with operators indicated that they were aware of these procedural changes and the location of the instructions in the control room procedural file.

- b. The inspector determined that licensed personnel of each unit were aware of the requirements for returning engineered safety features to an operable status following test and maintenance.
- c. The inspector discussed with licensed personnel when automatically actuated safety injection can be reset. Based on these discussions the inspector determined that licensed personnel were aware of when overriding emergency safety features was permitted.
- d. The licensee has committed in response to item 4 of IE Bulletin No. 79-06A to modify the following valves such that they remain closed following reset of the safety injection signal.

FCV-BD17	Steam Generator Blowdown
AOV-BD0001 thru 8	Steam Generator Blowdown
AOV-RV0001 thru 4	Containment Purge
FCV-SS-2 thru 5	Steam Generator Blowdown Sample
FCV-WD17A, B	Containment Sump Pump Discharge

Licensed personnel were questioned regarding automatic actions initiated by reset of engineered safety features that could affect the control of radioactive liquids and gases. The inspector determined that licensed personnel were aware of reset functions and requirements for switch positioning prior to resetting safety injection.

- e. Plant operators and supervisory personnel were questioned regarding early notification of NRC as a result of serious events. At the present time, the licensee has not committed to the requirements of IEB-79-05A, item 11 as far as staffing required and provisions for a continuous communication channel.

The licensee's response to item 11 of IEB 79-05A requires that the station's General Site Emergency Plan be followed: In an event that requires early notification of the NRC the shift would immediately notify the System Load Dispatcher who would in turn notify the Command Center Director on duty who makes an immediate call to the NRC. In the event that the load dispatcher cannot reach the Duty Command Center Director within five minutes the load dispatcher will then notify the NRC. Command center procedures require that specific telephones be designated as open lines in which continuous communications would be established. This matter, as well as the entire licensee's response to this Bulletin, will be evaluated by NRR.

No items of noncompliance were identified.

3. Onsite Inspection of Engineered Safety Features Systems (ESF)

The following systems designated as ESF were inspected:

- charging
- safety injection
- auxiliary feedwater
- containment spray
- diesel generator
- service water
- residual heat removal

The inspection consisted of an examination of the electrical and mechanical positioning to provide assurance that the required safety related functions would be operable when necessary. Visual inspection was performed where possible. A detailed comparison of system valve and electrical valve lineup procedures against current P&ID was also made.

For the above systems, the inspector made the following determinations:

- a. Review of the following valve/breaker/switch alignment procedures verified their accuracy.

<u>System</u>	<u>Procedure</u>	<u>Unit 1</u>	<u>Unit 2</u>
charging	SOI-14	14A-1	14A-2
safety injection	SOI-11	11A-1	11A-2
containment spray	SOI-11B	11B-1	11B-2

auxiliary feed	SOI-25	25A-1	25A-2
residual heat removal	SOI-38A	38A-1	38A-2
diesel generator	PT-11	PT-11	PT-11
service water	SOI-36A	36-A1	36-A2

- b. Using the above procedures, valve/breaker/switch alignments for accessible components in ESF systems were found to be in procedurally designated positions.
- c. Administrative procedures listed below were reviewed to determine whether procedural controls to assure proper return to service following maintenance and test were adequate.

ZAP-14-51-2	Out Of Service System Control
ZAP-3-51-1	Work Request System
ZAP-3-51-4B	Nonroutine Valve Lineup Control System
PT-14	Inoperable Equipment Surveillance Program

These procedures which require independent management verification of valve position and return to service status following maintenance and test were found to be acceptable.

- d. The following surveillance tests were reviewed in order to determine whether the systems would be returned to an operable condition following maintenance and test. In addition the last surveillance on each designated system was reviewed to determine whether acceptance criteria were met.

<u>System</u>	<u>Surveillance Test</u>	<u>Date Performed</u>		<u>Acceptance Criteria</u>		<u>Management Verification</u>
		<u>U1</u>	<u>U2</u>	<u>U1</u>	<u>U2</u>	
charging	PT-2I	4/13/79	4/15/79	Yes	Yes	Yes
safety injection	PT-2A	4/20/79	4/14/79	Yes	Yes	Yes
*auxiliary feed	PT-7	4/28/79	4/12/79	Yes	Yes	Yes

**containment spray	PT-6	4/25/79	4/15/79	Yes	Yes	Yes
diesel generator	PT-11	4/29&30/79	4/7&23/79	Yes	Yes	N/A
service water	SOI-61	4/24/79	4/24/79	Yes	Yes	Yes
residual heat removal	PT-2J	4/22/79	4/5/79	Yes	Yes	N/A

*Findings see Attachment 1

**Findings see Attachment 2

e. Pressurizer Level, Safety Injection Coincidence

The licensee has requested and been granted a technical specification change to require actuation of safety injection based on two out of three channels of low pressurizer pressure, thereby deleting pressurizer level from the safeguards logic. The modification is installed on both units as of May 4, 1979.

- f. Inspector verified that adequate administrative controls exist to assure that ESF systems are returned to an operable condition at the conclusion of extended outages.
- g. The inspector determined that the licensee uses management verification as described in the Zion Administrative procedures.
- h. The inspector determined that the following auxiliary feed valves for each unit requiring locking were locked in the required position.

FW34 Locked open	1CD0369 Locked open	1FW35 Locked closed
FW36 Locked open	1CD0100 Locked open	1FW37 Locked closed
FW38 Locked open	1CD0100 Locked open	
FW42 Locked open		

No items of noncompliance were identified.

4. Onsite Assessment of Operating Procedures

- a. The licensee does not require partial actuation of SI to assist in level control of the pressurizer during routine pressurizer level fluctuations.

- b. The operators are instructed to secure reactor coolant pumps in the event pressurizer level is lost.
- c. Commonwealth Edison Company has not committed to Item 7.6(2) of IEB 79-06A. This matter will be reviewed by NRR during their evaluation of the licensee's response to this Bulletin
- d. The licensee does not have a procedure for feeding a hot steam generator should it inadvertently be boiled dry.
- e. Tags have been placed so that no indicators are obscured from view.

No items of noncompliance were identified.

5. Exit Interview

An exit interview was held with Mr. N. Wandke and others of his staff (denoted in Paragraph 1) at the conclusion of the inspection on May 18, 1979. The inspector summarized the scope and findings of the inspection.

Attachments:

- 1. Auxiliary Feed System
- 2. Containment Spray System

ATTACHMENT 1

Auxiliary Feed System

The auxiliary feed system for each unit consists of two electric pumps feeding into a common header and one steam driven pump feeding its own header. Each header can feed all four steam generators. Technical Specification 3.7 requires that two of the three pumps be operable during power operation; Technical Specification 4.7 requires surveillance testing of these pumps each month.

The surveillance test requires that the discharge isolation valves be closed and the pumps put on recirculation back to the secondary water storage tanks. If the turbine driven auxiliary feed pump were out of service when the monthly surveillance test for the auxiliary feed system came due, then no auxiliary feed would be automatically available during performance of the required surveillance test.

If two of three auxiliary feed pumps became inoperable, reactor operation is permissible during the following seven days per Technical Specification 3.7.2.C provided that the operable pump is tested immediately and tested daily thereafter. As stated above, portions of the surveillance test require the pump being tested to be placed in a recirculation mode to the secondary water storage tank. During recirculation and with 2 auxiliary feed pumps inoperable, no auxiliary feed would be automatically available.

With respect to this surveillance test procedure, the last step in the procedure reestablishes the steam generator injection path by an actual flow verification.

ATTACHMENT 2

Containment Spray System

Technical Specification 4.6.C requires an immediate demonstration of operability for the remaining two containment spray pumps when one pump is made or found to be inoperable. The performance of this surveillance requires closure of the header isolation valve. Closing the header isolation valve to perform this required test, negates the injection path, and therefore, during the LCO with one pump inoperable and one pump in test, only one pump is available.