



**Commonwealth Edison**

Zion Generating Station  
Shiloh Blvd. & Lake Michigan  
Zion, Illinois 60099  
Telephone 708 / 746-2064

November 29, 1990

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

Dear Sir:

The enclosed Licensee Event Report number 90-011-01, Docket Nos. 50-295/DPR-39 and 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,

*for* T. P. Joyce  
Station Manager  
Zion Generating Station

TPJ/bg

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  
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LICENSEE EVENT REPORT (LER)

Form Rev 2.0

|   |  |                            |
|---|--|----------------------------|
| Facility Name (1)<br>Zion Unit 1                    | Docket Number (2)<br>0   5   0   0   0   2   9   5 | Page (3)<br>1   of   0   3 |
| Title (4)<br>Uncontrolled Reactor Head Vent Release |  |                            |

| 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              | 4   | 10   | 9              | 0                 | 1               | 1               | 1   | 2    | 9                             | 10               | Zion Unit 2 | 0   5   0   0   0   3   0   4 |

OPERATING MODE (9) 5

POWER LEVEL (10) 0

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10CFR (Check one or more of the following) (11)

|  |  |   |  |
|--|--|---|--|
| <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)(vii)     | <input type="checkbox"/> Other (Specify in Abstract below and in Text) |
| <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) |  |
| <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) |  |
| <input type="checkbox"/> 20.405(a)(1)(v)   | <input type="checkbox"/> 50.73(a)(2)(iii)          | <input type="checkbox"/> 50.73(a)(2)(x)       |  |

LICENSEE CONTACT FOR THIS LER (12)

| Name                                  | TELEPHONE NUMBER                                       |
|---------------------------------------|--|
| Paul Geddes LER Coordinator ext. 2487 | AREA CODE: 7   0   8<br>7   4   6   -   2   10   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 |
|-------|--------|-----------|---------------|---------------------|-------|--------|-----------|---------------|---------------------|
|       |        |           |               | N                   |       |        |           |               |                     |

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)

On 4/10/90, while a reactor head vent was in progress, it was realized that if any channel of the Containment Purge monitor 1(2)R-PR09 was inoperable, then a reactor vessel head vent was an uncontrolled release, because the head vent rig bypasses the Containment Atmosphere monitor 1(2)R-PR40 sample point. The release is still monitored, as the Ventilation Stack radiation monitors are downstream of 1(2)R-PR09, but the Stack monitors have no control function. A head vent is considered equivalent to a Containment Purge, and thus this event is reportable under 10CFR50.73(a)(2)(i)(B).

The root cause of this event is a failure to realize the routing of the tygon vent rig bypassed the 1(2)R-PR40 monitor sample point. This was due in part to modifications to the radiation monitoring system and changes in Technical Specifications after use of the head vent rig had become standard practice.

The head noble gases are sampled and the activity is quantified prior to release. At no time were any dose rate limits exceeded. There was therefore no safety significance to this event.

The corrective actions for this event are to impose stricter procedural controls on the actions required for head vent releases.

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 |          |    |       |
| Zion Unit 1       | 0   5   0   0   0   2   9   5 | 9   0          | -   0   1   1     | -   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 RCS [AB] Temperature/ Pressure -0- °F/ -0- psig

B. DESCRIPTION OF EVENT

There was no equipment out of service prior to this event that contributed to the severity of the event.

A reactor head vent is an operation that is performed during maintenance, when it is desired to remove gases from the reactor that may be trapped in the head region of the vessel. It is done concurrent with a normal Containment Purge, and at the time of the event, the same procedure requirements applied to a Containment Purge and to a head vent. This operation is performed when draining the Reactor Coolant System, to reduce hydrogen concentration and remove fission product gases. It should be noted that this is done only after a regular degas has been performed, which will remove most of the fission product gases. The procedure (Maintenance Instruction) directs operators to use a head vent rig, which is a tygon tubing arrangement that routes the gases from the head vent valves to the exhaust ducting of the Containment Purge System. This is an operation that has been conducted at Zion Station every refueling outage since the first refueling outage on Unit 1.

During a normal Containment Purge, Technical Specifications and procedures require that either 1(2)R-PR09 or 1(2)R-PR40 be operable. 1(2)R-PR09 is a three channel radiation monitor that samples the Containment Purge exhaust ducting. 1(2)R-PR09 channels A, B, and C are capable of tripping shut the Containment Purge Valves. 1(2)R-PR40 is a System Particulate Iodine and Noble Gas (SPING) monitor that samples the containment atmosphere at the 617' level. Only 1(2)R-PR40 channels 1 and 5 are capable of tripping shut the Purge valves. Channel 3, the Iodine channel, is not capable of tripping the Purge valves. These monitors are considered redundant by the Technical Specifications. However, because the Iodine channel of the SPING cannot shut the Containment Purge Valves, the procedure requires that the 1(2)R-PR09B channel be operable at all times during a Containment Purge.

On 4/10/90, while a reactor head vent was in progress, it was realized that if any channel of the 1(2)R-PR09 monitor was inoperable, then the head vent was an uncontrolled release, because the head vent rig bypasses the 1(2)R-PR40 sample point. This means that there would be no automatic closure of the Containment Purge Valves if the head vent activity were to exceed the monitor setpoint. The release was still monitored, by the downstream Ventilation Stack radiation monitors which were operable. However, the Stack monitors have no control function. It should be noted that the 1(2)R-PR40 was installed in the early 1980's timeframe, and the Radiological Effluent Technical Specifications (RETS) were implemented in September of 1986. So the current situation has evolved over many years.



LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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|-------------------|-------------------------------|----------------|-------------------|-----------------|-------|----------|-------|--|
|                   |                               | Year           | Sequential Number | Revision Number |       |          |       |  |
| Zion Unit 1       | 0   5   0   0   0   2   9   5 | 9   0          | -   0   1   1     | -   0   1       | 0   3 | OF       | 0   3 |  |

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

C. APPARENT CAUSE OF EVENT

The root cause of this event is a failure to realize that the routing of the tygon vent rig bypassed the 1(2)R-PR40 monitor sample point. This was due in part to the addition of the 1(2)R-PR 40 monitors and changes in Technical Specifications which allowed the use of 1(2)R-PR40 as a backup to 1(2)R-PR09, after use of the head vent rig had become standard practice. This resulted in a procedural deficiency that permitted head vent releases with the same requirements as a Containment Purge and consequently less than conservative monitoring requirements for the head vent. This was not a problem when use of the vent rig was instituted, because the 1(2)R-PR40 monitors had not yet been installed. Prior to the RETS change, 1(2)R-PR09 was always required to be operable whenever a Containment Purge and head vent was in progress.

D. SAFETY ANALYSIS OF EVENT

The reactor vessel head noble gases are sampled and activity quantified prior to release. The release values for this event are 0.4 Curies noble gas, and 8.4E-10 Curies Particulate and Iodine. At no time were any dose rate limits exceeded. Therefore there was no safety significance to this event.

E. CORRECTIVE ACTIONS

The corrective actions for this event are to impose stricter procedural controls on the actions required for head vent releases. Anticipated actions are as follows:

1. Revise SOI-9 to include instructions for head vent releases. This will require 1(2)PR-09 to be operable whenever a head vent is performed. (295-180-90-04501)
2. Revise ZCP-304 concerning the head vent release form to include requirements for 1(2)PR-09 to be operable. (295-180-90-04502)

F. PREVIOUS EVENTS

None

G. COMPONENT FAILURE DATA

None