NRC FORM 366
(7-77)

U. S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT

CONTROL BLOCK: (1) (PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

0 1 | I L Z I S 1 (2) | 0 0 - 0 0 0 0 0 - 0 0 (3) | 4 1 1 1 1 (4) | (5)

7 8 9 LICENSEE CODE 14 15 LICENSE NUMBER 25 26 LICENSE TYPE 30 57 CAT 58

CON'T

0 1 | REPORT SOURCE L (6) | 0 5 0 0 0 2 9 5 (7) | 0 6 1 3 8 3 (8) | 0 7 1 3 8 3 (9)

7 8 60 61 DOCKET NUMBER 68 69 EVENT DATE 74 75 REPORT DATE 80

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

0 2 | With Unit 1 at 78% and 1D MSIV partial close test (PT-3D) in prog ess

0 3 | high steam flow SI occurred. 1D MSIV was found in the open position

0 4 | in violation of T.S. 3.9.4.A. Health and safety of the public were

0 5 | not affected as 1D MSIV was closed manually from the MCB. All other

0 6 | safeguards equipment functioned properly. The usage factor on the

0 7 | injection nozzles for this SI was .002416,which gives accumulated

0 8 | usage factor of .16950 out of total lifetime usage of 1.0.

7 8 9 80

0 9 | SYSTEM CODE C D (11) | CAUSE CODE B (12) | CAUSE SUBCODE A (13) | COMPONENT CODE Z Z Z Z Z Z (14) | COMP. SUBCODE Z (15) | VALVE SUBCODE Z (16)

7 8 9 10 11 12 13 18 19 20

(17) LER/RO REPORT NUMBER: EVENT YEAR 8 3 | — | SEQUENTIAL REPORT NO. 0 1 7 | / | OCCURRENCE CODE 0 3 | REPORT TYPE X | — | REVISION NO. 1

21 22 23 24 26 27 28 29 30 31 32

ACTION TAKEN F (18) | FUTURE ACTION F (19) | EFFECT ON PLANT Z (20) | SHUTDOWN METHOD Z (21) | HOURS (22) 0 0 0 0 | ATTACHMENT SUBMITTED Y (23) | NPRD-4 FORM SUB. Y (24) | PRIME COMP. SUPPLIER Z (25) | COMPONENT MANUFACTURER Z 9 9 9 (26)

33 34 35 36 37 40 41 42 43 44 47

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

1 0 | Safety Injection occurred during the partial close test when the

1 1 | operator had the MSIV test switch in the reset position. This switch

1 2 | position prevented valve closure from the safeguards signal. This

1 3 | design flaw will be corrected during the MSIV enviromental modifica-

1 4 | tion.

7 8 9 80

1 5 | FACILITY STATUS E (28) | % POWER 0 7 8 (29) | OTHER STATUS (30) NA | METHOD OF DISCOVERY B (31) | DISCOVERY DESCRIPTION (32) Operator Observation

7 8 9 10 12 13 44 45 46 80

1 6 | ACTIVITY RELEASED Z (33) | CONTENT OF RELEASE Z (34) | AMOUNT OF ACTIVITY (35) NA | LOCATION OF RELEASE (36) NA

7 8 9 10 11 44 45 80

PERSONNEL EXPOSURES

1 7 | NUMBER 0 0 0 (37) | TYPE Z (38) | DESCRIPTION (39) NA

7 8 9 11 12 13 80

PERSONNEL INJURIES

1 8 | NUMBER 0 0 0 (40) | DESCRIPTION (41) NA

7 8 9 11 12 80

LOSS OF OR DAMAGE TO FACILITY (43)

1 9 | TYPE Z (42) | DESCRIPTION

7 8 9 10 80

8308030070 830713
PDR ADOCK 05000295
S PDR

PUBLICITY

2 0 | ISSUED N (44) | DESCRIPTION (45) NA

7 8 9 10 68 69 80

NRC USE ONLY

NAME OF PREPARER Stephen Petrowski PHONE: 312-746-2084 x-328

IE21

NRC FORM 366A (7-77)

ATTACHMENT TO LER

No. 83-017/03 X-1

COMMONWEALTH EDISON CO.
ZION GENERATING STATION
50-295

DESCRIPTION OF EVENT

With Unit 1 at 78% and increasing power, 1D MSIV partial close test (PT-3D) was in progress. The valve stroked partially closed but when the test switch was released to the open position, the valve appeared not to be going open. The operator responded by positioning the switch to reset. About that time, the reactor tripped on 1D S/G low level, followed by high steam flow-low steam line pressure safety injection.

CONSEQUENCES OF OCCURRENCE

The valve did not close from the safeguards signal which is in violation of T.S. 3.9.4.A. It, however, closed by manual actuation from the control room. Therefore, health and safety of the public were not affected.

CAUSE OF OCCURRENCE

Investigations revealed two problems. One, the partial stroke limit switch was found bent. This caused 1D MSIV to go closed further than desired, actually entering the steam flow. This resulted in the following rapid sequence of events;

- 1D MSIV partial closed
- RCS Tave increasing due to loss of heat transfer in 1D S/G
- RX trip due to 1D S/G low-low level
- Operator holds 1D MSIV switch to reset
- Steam dumps are armed due to turbine trip and go full open due to high Tave
- Resulting steam draw causes low steam line pressure
- Hi steam flow signal generated following RX trip due to instantaneous reduction of steam flow setpoint to 40% while actual flow is greater than 40%
- SI results from high steam flow-low steam line pressure.

Second problem, a design flaw in the electrical circuit prevented the MSIV from closing on a safeguards signal. The safety injection signal came at the same time the operator had the test switch in the reset position. In this position, the seal-in circuit for full valve closure could not be completed and the valve, which started to close, returned to open.

CORRECTIVE ACTIONS

The operator responded timely by closing 1D MSIV manually from the control room. The partial stroke limit switch arm was replaced and the valve tested satisfactorily for partial and full closure. The flaw in MSIV's safeguards circuits will be corrected during their enviromental qualification modifications scheduled for 1984. In the mean time, reactor operators will be made aware of the current design and how to respond in similar situations.

Commonwealth Edison
Zion Generating Station
Shiloh Blvd. & Lake Michigan
Zion, Illinois 60099
Telephone 312/746-2084

July 13, 1983

Mr. James G. Keppler
Regional Administrator
Directorate of Inspection and Enforcement
Region III
U.S. Nuclear Regulatory Commission
799 Roosevelt Rd.
Glen Ellyn, IL 60137

Reference: Zion Generation Station
Docket No. 50-295/DPR-39
Technical Specification, Section 6.6.2

Dear Mr. Keppler:

The enclosed updated Licensee Event Report from Zion Generating Station is being transmitted to you in accordance with the requirements of Technical Specifications, Section 3.3.2.F.3. This section states a written ninety day report is required in the event ECCS is actuated and injects into the RCS when Tavg is $\geq$ 350°F.

This report is number 83-017/03X-1, Docket No. 50-295/DPR-39. The updated Licensee Event Report is also accompanied by an attachment.

Very truly yours,

K. L. Graesser

K. L. Graesser
Superintendent
Zion Generating Station

Enclosure: Reportable Occurrence Report No. 83-017/03X-1

Attachment

cc: J. Waters, NRC Resident Inspector