

**LICENSEE EVENT REPORT**

(PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

0 1 N Y J A F I 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

REPORT SOURCE L 0 5 0 0 3 3 3 0 9 2 2 7 9 1 0 1 9 7 9  
60 61 DOCKET NUMBER 68 69 EVENT DATE 74 75 REPORT DATE 80

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)  
Please See Attachment

0 2 Please See Attachment

03 \_\_\_\_\_

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0	5
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06 \_\_\_\_\_

0	7	
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0	8	
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7 8

SYSTEM CODE  
W E 11

CAUSE CODE  
E 12

CAUSE SUBCODE  
B 13

COMP. SUBCODE  
Z 15

VALVE SUBCODE  
Z 16

COMPONENT CODE  
X X X X X X 14

(17) LER RO REPORT NUMBER [EVENT YEAR  
[7][9]  
21 22] [—]  
23

SEQUENTIAL REPORT NO.  
[0][7][7]  
24 26

OCCURRENCE CODE  
[0][4]  
28 29

REPORT TYPE  
[L]  
30

REVISION NO.  
[—]  
31

[—]  
32

ACTION TAKEN 33 A 18 34 Z 19

FUTURE ACTION

EFFECT ON PLANT 35 B 20

SHUTDOWN METHOD 36 Z 21

HOURS 37 0 0 0 0 40

ATTACHMENT SUBMITTED 41 Y 23

NPRD-4 FORM SUB. 42 N 24

PRIME COMP. SUPPLIER 43 A 25

COMPONENT MANUFACTURER 44 J 0 3 3 47

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

1 0 Please See Attachment

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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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1	3	
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1	4	
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80

FACILITY STATUS (E) (28) % POWER (0) (9) (2) (29) OTHER STATUS (30) NA METHOD OF DISCOVERY (A) (31) DISCOVERY DESCRIPTION (32) Operator Observation

ACTIVITY CONTENT  
RELEASED OF RELEASE

1 6 Z 33 Z 34

AMOUNT OF ACTIVITY (35) NA

LOCATION OF RELEASE (36) NA

PERSONNEL EXPOSURES									
NUMBER			TYPE	DESCRIPTION					
1	7	000	(37) Z	(38) NA					

PERSONNEL INJURIES		80	
NUMBER	DESCRIPTION		
1 8 0 0 0	(40) NA		

		8		9		10		11		12		
		LOSS OF OR DAMAGE TO FACILITY						(43)				80
		TYPE		DESCRIPTION								
1	9	Z	(42)	NA								1178 061

8 9 10  
PUBLICITY  
ISSUED DESCRIPTION (45)  
2 0 N (44) NA 7 9 1 0 2 3 0 5 5 9 NRC USE ONLY  
8 9 10

NAME OF PREPARER W. Verne Childs

80557 NRC USE ONLY  
68 69  
315-342-3840  
PHONE:

POWER AUTHORITY OF THE STATE OF NEW YORK  
JAMES A. FITZPATRICK NUCLEAR POWER PLANT

DOCKET NO. 50-333

ATTACHMENT TO LER 79-077/04L-0

Page 1 of 1

During normal operation, the shear pins for travelling water screens "A" and "C" failed. This resulted in a forced reduction in circulating water system flow and plant load and caused the differential temperature between the main condenser inlet and the plant cooling water outlet to increase to 34.2° F. Operation of the plant with a cooling water differential temperature in excess of 32.4° F is a degraded mode allowed by Technical Specifications Appendix B, Paragraph 2.1.1. This condition existed for approximately 45 minutes and did not result in any significant hazard to the public health and safety.

Following replacement of the shear pins normal operation of the travelling water screens was restored in approximately four hours and power was increased within the limitations of plant procedures.

1178 062

NRC POR



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

September 21, 1979

ALL PRESSURIZED WATER REACTORS

Gentlemen:

The enclosed letter dated June 26, 1979 regarding multiple equipment failures and surveillance testing errors was sent to all pressurized water reactors. However, due to distribution problems, the letters were delayed and apparently not all licensees have received their copy.

To ensure that all licensees are in receipt of the June 26, 1979 letter, a copy is being transmitted with this letter, in addition to a copy of the July 16, 1979 Office of Inspection and Enforcement inspection report pertaining to the events referred to in the letter.

Within 30 days of receipt of this letter, you are requested to provide the results of the reviews discussed in the June 26, 1979 letter.

Sincerely,

A handwritten signature in dark ink, appearing to read "Barrett G. Eisenhut", written over a horizontal line.

Barrett G. Eisenhut, Acting Director  
Division of Operating Reactors  
Office of Nuclear Reactor Regulation

Enclosures:  
As Stated

1178 063

317P

1015

552 \* 560



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

June 26, 1979

ALL PRESSURIZED WATER REACTORS

Gentlemen:

Recently, because of operator error, an inadvertent reactor scram and safety injection occurred during monthly surveillance tests of the safeguards system at a PWR facility.

At the time of the event, train "A" of the safeguards system had been placed in "test", and the operator, in addition to inserting a high steam flow signal required by the test, inadvertently incorrectly inserted a low steam pressure signal. This action resulted in a low steam pressure signal (signifying a main steam line break) in train "A" which initiated main steam isolation valve (MSIV) isolation and a reactor scram. One MSIV, however, did not close because of a valve solenoid failure. The resultant differential pressure between two steam lines initiated a safety injection signal from train "B". In the ensuing events several more equipment failures occurred. One feedwater regulation valve failed to close because of another solenoid failure. The steam driven auxiliary feedwater pump tripped on overspeed and one of the steam generator atmospheric relief valves failed to fully reseal upon closure.

This occurrence, with its ensuing sequence of events, is of concern to the NRC staff because of the serious questions that are raised due to the multiple equipment failures and whether a very real problem could exist that has not been analyzed. For example, the potential for common mode failures (in this case two apparently independent solenoid valve failures) should be investigated to ensure that a problem does not exist which could negate the criteria assumed in your previous accident analyses or which could lead to an overall reduction in system reliability.

This occurrence is also of concern because of an apparent sense of complacency towards periodic surveillance requirements in general and on engineered safeguards systems in particular which has all too often resulted in inadvertent reactor scrams and safety injection system actuations. From the standpoint of unnecessary challenges to the reactor trip and the safeguards systems and the imposition of unnecessary thermal stress cycles on reactor coolant system and its components, this is undesirable.

1128 064

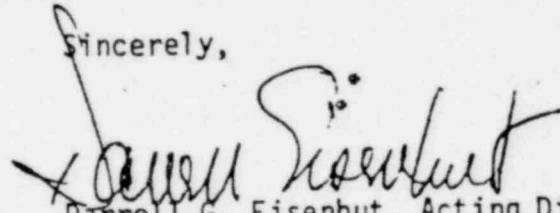
Dupe 7909240731

June 26, 1979

You and your plant supervisors should review the events described in this letter, to determine whether similar errors have occurred or could occur at your facility and whether the potential exists for a problem associated with occurrences that you have not previously considered. In addition, it is requested that management policies and procedures be reviewed and strengthened as necessary to assure that multiple equipment failures in safety-related systems will be vigorously pursued and analyzed to identify potential failure modes not previously considered that could lead to a significant reduction in the ability of safety systems to function as required. Finally, you are requested to review your engineered safety system surveillance procedures to determine whether appropriate cautions are included and to ensure that plant operators and supervisors are aware of the importance of avoiding challenges to the protective features of your facility.

Within 30 days of receipt of this letter, please submit, in accordance with 10 CFR §50.54(f) of the Commission's regulations, the results of these reviews. In addition to licensing reviews of these matters, we have requested that the NRC's Office of Inspection and Enforcement perform a followup inspection on these matters in the near future.

Sincerely,

A handwritten signature in dark ink, appearing to read "Darrell G. Eisenhut", is written over a horizontal line.

Darrell G. Eisenhut, Acting Director  
Division of Operating Reactors  
Office of Nuclear Reactor Regulation

1108 065



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION III  
799 ROOSEVELT ROAD  
GLEN ELLYN, ILLINOIS 60137

JUL 16 1979

Docket No. 50-295  
Docket No. 50-304

Commonwealth Edison Company  
ATTN: Mr. Byron Lee, Jr.  
Vice President  
Post Office Box 767  
Chicago, IL 60690

Gentlemen:

This refers to the inspection conducted by Mr. J. E. Kohler of this office on April 28 through June 1, 1979, of activities at Zion Nuclear Power Station, Units 1 and 2, authorized by NRC Operating License No. DPR-39 and No. DPR-48 and to the discussion of our findings with Mr. N. E. Wandke at the conclusion of the inspection.

The enclosed copy of our inspection report identifies areas examined during the inspection. Within these areas, the inspection consisted of a selective examination of procedures and representative records, observations, and interviews with personnel.

No items of noncompliance with NRC requirements were identified during the course of this inspection.

In accordance with Section 2.790 of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, a copy of this letter and the enclosed inspection report will be placed in the NRC's Public Document Room, except as follows. If this report contains information that you or your contractors believe to be proprietary, you must apply in writing to this office, within twenty days of your receipt of this letter, to withhold such information from public disclosure. The application must include a full statement of the reasons for which the information is considered proprietary, and should be prepared so that proprietary information identified in the application is contained in an enclosure to the application.

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*Dupl 7909 0501 44*



JUL 16 1979

We will gladly discuss any questions you have concerning this inspection.

Sincerely,

R. F. Heishman, Chief  
Reactor Operations and  
Nuclear Support Branch

Enclosure: IE Inspection  
Reports No. 50-295/79-13  
and No. 50-304/79-12

1128 067

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

REGION III

Report No. 50-295/79-13; 50-304/79-12

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 28 through June 1, 1979

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

7/13/79

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

7/13/79

Inspection Summary

Inspection on April 28 through June 1, 1979, (Report No. 50-295/79-13; 50-304/79-12)

Areas Inspected: Routine inspection of plant operations, maintenance, non-routine events occurring during the inspection, quality assurance audit results, plant cleanliness, and spent fuel pool modification activities. The inspection involved 144 hours of onsite inspection by one NRC inspector.

Results: No items of noncompliance were identified.

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*Dupe 7909050156*



## DETAILS

### 1. Persons Contacted

N. Wandke, Plant Superintendent  
\*C. Schumann, Operating Assistant Superintendent  
\*T. Parker, Assistant Technical Staff Supervisor  
\*B. Ward, Unit 2 Operating Engineer  
E. Fuerst, Unit 1 Operating Engineer  
\*B. Harl, Quality Assurance  
J. Joosten, Primary Group Leader Tech Staff  
K. Schultz, Training Supervisor  
F. Resick, Station Health Physicist  
R. Landrum, Nuclear Station Operator  
T. Flowers, Shift Engineer  
N. Valos, Shift Foreman  
F. Pauli, Shift Engineer  
L. Pruett, Shift Foreman  
D. Ray, B Operator  
J. Johnson, B Operator  
T. White, Instrument Mechanic  
D. Kaley, Nuclear Station Operator  
E. Murach, Maintenance Assistant Superintendent  
L. Soth, Administration and Support Assistant Superintendent  
G. Armstrong, Shift Engineer  
N. Loucas, Shift Foreman  
D. Walden, Fuel Handling Foreman  
J. Lafontaine, Fuel Handling Foreman  
P. Kuhner, Quality Control

\*Denotes those present at the exit interview.

### 2. Safety Injection Unit 1 May 23, 1979 (LER 50-295/79-42)

At approximately 1:45 on May 23, 1979 with Unit 1 at 100% power a safety injection occurred during performance of periodic test procedure PT 10a and b, the monthly safeguards logic test. The safety injection resulted in main steam isolation valve closure and full secondary steam relief. No structural damage or water hammers occurred. The injection lasted for approximately three minutes during which time the licensee personnel monitored containment pressure and temperature, primary system pressure, pressurizer level and steam generator levels. Shift personnel determined that the safety injection was inadvertent not resulting from a steam line break, and terminated the safety injection. Confirmation that steam line break indication did not exist on plant instrumentation was obtained by the NRC resident inspector.

1178 069

The cause of the safety injection was attributed to personnel error and failure of the B main steam isolation valve to close from safety injection Train A. The procedure (PT 10a and b) calls for developing the logic for high steamline flow and requires depressing a pushbutton labeled RT which is located in the auxiliary electrical area. The RT pushbutton is depressed while Train A safeguards logic is in test. While depressing the RT pushbutton, two pages of the procedure were inadvertently skipped and pushbuttons which yielded a low steamline pressure were depressed simultaneously with the RT pushbutton. This action developed a safety injection logic for Train A (high steamline flow coincident with low steamline pressure signifying a steamline break).

Although Safeguards Train A was in test, valve positioning resulting from the signals is not inhibited. For steamline break protection, main steam isolation valves A, B, C and D receive the closure signal from Train A. The A, C, and D MSIVs closed as designed while the B MSIV failed to close from Train A. Failure of the B MSIV to close caused a Train B safeguards actuation from the 100 pound differential pressure safety injection.

Several discrepancies were noted during and after the safety injection resulting from Train B. These discrepancies are described in the following table along with the corrective action and the safety significance.

<u>Equipment</u>	<u>Failure</u>	<u>Corrective Action</u>	<u>Safety Significance</u>
B MSIV (LER No. 79-40)	Failed to close from Train A	Pilot valve replaced, retested by PT-23 successfully.	Would have closed automatically from Train B if real steam- line break existed. Closed manually from the control room.
Feedwater Reg. Valve 1B (DVR No. 1-79-73)	Failed to close from Train A	Solenoid was cleaned, repaired and retested by depressing relays F4, and F5.	Closed Automatically from Train B.
Main steam Safety Valves	Partially opened and failed to reset.	Manually reset by prying to full open position.	Each steamline has five steam safety valves capable of passing 110% of rated steamflow at 110% steam generator pressure. No excessive cooldown occurred.

<u>Equipment</u>	<u>Failure</u>	<u>Corrective Action</u>	<u>Safety Significance</u>
Turbine Driven Auxiliary Feedwater Pump 1A (DVR No. 1-79-72)	Started but steam supply valve tripped closed.	Adjusted governor, performed periodic surveillance test successfully.	The plant has two electric driven and one turbine driven auxiliary feedwater pumps. Only one of three is necessary for safe shutdown. Technical Specifications requirement for two operable pumps was met.

The inspector considers the mechanical failures associated with this event to be corrected.

Licensee investigation into this event concentrated on reviewing the procedure (PT 10 a and b) as well as expected operator actions. Although two additional licensed operators familiar with PT 10 a and b were brought in specifically to perform the test, it was determined that the degree of communication between the two individuals by sound powered telephone could have been improved. (One individual was in the control room and one individual was in the auxiliary electrical area). Furthermore, it was concluded that human engineering deficiencies in the auxiliary electrical area which require simultaneous depression of three separate pushbuttons to develop the safeguards signals contributed to the error.

During the management exit held on June 1, 1979, periodic test procedure PT 10a and b was discussed as well as possible changes that were going to be made. These changes dealt with modifications to the RP pushbutton as well as some procedural modification. At the time of the management exit, these changes were not finalized. Consequently, this item will be carried as unresolved pending further resolution by the licensee and will be followed in subsequent inspections. (295/79-13-01; 304/79-12-01)

No items of noncompliance were identified.

### 3. QA Audit Performed by Commonwealth Edison

The inspector was made aware of the results of an inhouse quality assurance audit performed by the corporate off-site audit group. One significant finding was made regarding implementation of Zion Administrative Procedure 13-52-8. According to the audit finding all of the requirements of ZAP13-52-8, which controls the shipment of dry active wastes, were not being implemented.

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The inspector discussed this item with the plant's Quality Assurance Department as well as at the monthly exit. The ZAP in question will be controlling the anticipated future shipment of old spent fuel racks. The licensee stated that these problems were being resolved and a formal response to the in-house audit would be available shortly. At the time of the management exit, these changes had not been finalized. Consequently, this item will be considered unresolved pending resolution by the licensee. (295/79-13-02; 304/79-12-02)

No items of noncompliance were identified.

4. Unit 2 Reduction in Plant Load May 11, 1979

Unit 2 entered a limiting condition for operation regarding Technical Specification 4.8.3.c at about 9:00 a.m. on May 11, 1979, when it was found that the O diesel generator would not except load during the time the 2A residual heat removal (RHR) pump was out of service for maintenance. A 2.5% per minute load reduction was begun with the anticipated off line time at 1:00 p.m. The load reduction was cancelled at approximately 12:30 p.m. when the 2A RHR pump maintenance was completed and the pump was tested and declared operable. The inspector has no further questions regarding this item.

No items of noncompliance were identified.

5. Special Engineered Safeguards Inspection

As a result of the Three Mile Island incident, the inspector conducted a special inspection of all engineered safety feature systems at the Zion Generating Station. The results of this inspection are contained in a special inspection report which was forwarded to the licensee in June of 1979. The inspector has no further questions regarding this item.

6. Plant Cleanliness

The inspector commented during the management exit on 6/1/79 that the auxiliary building looked clean and that licensee personnel should continue housekeeping efforts, particularly in any areas where boric acid might deposit and crystallize.

No items of noncompliance were identified.

7. Technical Specification Comments

During the month, an item pertaining to the Zion Technical Specifications was discussed with operating personnel. This item and the inspector's comment are as follows:

1178 072

Operability of a diesel generator: Is a diesel generator which is running, loaded, and paralleled to its safety bus considered operable at the Zion Generating Station while maintenance is being performed on its air starting system?

Answer: Regarding the Zion diesel generators, the diesels are considered operable as long as all safety functions can be performed while running during the maintenance on the air starting system. If the diesel generator trips during maintenance, a limiting condition for operation would exist and the diesel generator would not be declared operable until all maintenance items were completed and a successful periodic test performed.

8. Testimony Preparation for Spent Fuel Pool Expansion

During the month, written testimony was prepared by the inspector for the public hearing regarding plans to increase the storage capacity of the spent fuel pool. In preparation for this hearing the Quality Assurance, Quality Control and Fuel Handling Departments were contacted. In addition, a noncompliance history regarding Quality Assurance at the Zion Generating Station was reviewed and discussed with other members of Region III office.

No items of noncompliance were identified.

9. Review of Plant Operations

During the month, the inspector made tours of the turbine building, auxiliary building, control room and the perimeter and security areas. With regard to the plant, the tours involved valve lineup audits, review of LCO conditions, discussions with plant operating personnel, review of station logs, and review of overall plant cleanliness. The security tours involved witnessing badging vehicle searching, package surveillance and compliance with station visitor policy.

No items of noncompliance were identified.

10. Plant Maintenance

The inspector either witnessed or reviewed the results of the following maintenance activities during the month to determine if work control procedures and required supervision were in effect. The following is a list of the maintenance activities involved in the review:

- a. IM maintenance on MA station 2C FW pump to repair the speed controller.



- b. 2A RHR pump seal replacement.
- c. Starting air leaks in "O" D/G.
- d. B MSIV failure to close from Train A.
- e. FW Reg valve failure to close from Train A.

11. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, items of noncompliance, or deviations. Unresolved items disclosed during the inspection are discussed in Paragraphs 2 and 3.

12. Management Interview

A management meeting was held on June 1, 1979, by the resident inspector with Mr. Wandke and others of his staff in which the results of the inspection were summarized.

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