# ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:8807280376 DOC.DATE: 88/07/12 NOTARIZED: NO DOCKET #
FACIL:50-265 Quad-Cities Station, Unit 2, Commonwealth Edison Co. 05000265
AUTH.NAME AUTHOR AFFILIATION
WALTERS,S. Commonwealth Edison Co.
RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 88-020-00:on 880619,improper sequence occurred resulting
in ESF actuations,including ECCS initiation.

W/8 ltr.

DISTRIBUTION CODE: IE22D COPIES RECEIVED:LTR / ENCL / SIZE: 5
TITLE: 50.73 Licensee Event Report (LER), Incident Rpt, etc.

NOTES:

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|---|---|---|---|---|---|---|
| | PD3-2 LA | 1 | 1 | PD3-2 PD | 1 | 1 |
| | ROSS,T | 1 | 1 | | | |
| INTERNAL: | ACRS MICHELSON | 1 | 1 | ACRS MOELLER | 2 | 2 |
| | AEOD/DOA | 1 | 1 | AEOD/DSP/NAS | 1 | 1 |
| | AEOD/DSP/ROAB | 2 | 2 | AEOD/DSP/TPAB | 1 | 1 |
| | ARM/DCTS/DAB | 1 | 1 | DEDRO | 1 | 1 |
| | NRR/DEST/ADS 7E | 1 | 0 | NRR/DEST/CEB 8H | 1 | 1 |
| | NRR/DEST/ESB 8D | 1 | 1 | NRR/DEST/ICSB 7 | 1 | 1 |
| | NRR/DEST/MEB 9H | 1 | 1 | NRR/DEST/MTB 9H | 1 | 1 |
| | NRR/DEST/PSB 8D | 1 | 1 | NRR/DEST/RSB 8E | 1 | 1 |
| | NRR/DEST/SGB 8D | 1 | 1 | NRR/DLPQ/HFB 10 | 1 | 1 |
| | NRR/DLPQ/QAB 10 | 1 | 1 | NRR/DOEA/EAB 11 | 1 | 1 |
| | NRR/DREP/RAB 10 | 1 | 1 | NRR/DREP/RPB 10 | 2 | 2 |
| | NRR/~~DRIS~~/SIB 9A | 1 | 1 | NUDOCS-ABSTRACT | 1 | 1 |
| | REG FILE 02 | 1 | 1 | RES TELFORD,J | 1 | 1 |
| | RES/DSIR DEPY | 1 | 1 | RES/DSIR/EIB | 1 | 1 |
| | RGN3 FILE 01 | 1 | 1 | | | |
| EXTERNAL: | EG&G WILLIAMS,S | 4 | 4 | FORD BLDG HOY,A | 1 | 1 |
| | H ST LOBBY WARD | 1 | 1 | LPDR | 1 | 1 |
| | NRC PDR | 1 | 1 | NSIC HARRIS,J | 1 | 1 |
| | NSIC MAYS,G | 1 | 1 | | | |

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TOTAL NUMBER OF COPIES REQUIRED: LTTR 45 ENCL 44

**Commonwealth Edison**
Quad Cities Nuclear Power Station
22710 206 Avenue North
Cordova, Illinois 61242
Telephone 309/654-2241

RLB-88-231

July 12, 1988

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

Reference: Quad-Cities Nuclear Power Station
Docket Number 50-265, DPR-30, Unit Two

Enclosed is Licensee Event Report (LER) 88-020, Revision 00, for Quad-Cities Nuclear Power Station.

This report is submitted in accordance with the requirements of the Code of Federal Regulations, Title 10, Part 50.73(a)(2)(iv): The licensee shall report any event or condition that resulted in manual or automatic actuation of any Engineered Safety Feature, including the Reactor Protection System.

Respectfully,

COMMONWEALTH EDISON COMPANY
QUAD-CITIES NUCLEAR POWER STATION

R. L. Bax
Station Manager

RLB/DWH/ad

Enclosure

cc: I. Johnson
R. Higgins
INPO Records Center
NRC Region III



IE22
1/1

1418H/0436Z

LICENSEE EVENT REPORT (LER)

| Facility Name (1) | Docket Number (2) | Page (3) |
|---|---|---|
| QUAD-CITIES NUCLEAR POWER STATION, UNIT TWO | 0 5 0 0 0 2 6 5 | 1 of 0 4 |

Title (4) Unit Two Emergency Core Cooling System Initiation Signal Received During Improper Valving Sequence on Reactor Water Level Instrumentation.

| 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 5 0 0 0 |
| 0 6 | 1 9 | 8 8 | 8 8 | 0 2 0 | 0 0 | 0 7 | 1 2 | 8 8 | | 0 5 0 0 0 |

OPERATING MODE (9): 1

POWER LEVEL (10): 0 0 0

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

| | | | |
|---|---|---|---|
| 20.402(b) | 20.405(c) | x 50.73(a)(2)(iv) | 73.71(b) |
| 20.405(a)(1)(i) | 50.36(c)(1) | 50.73(a)(2)(v) | 73.71(c) |
| 20.405(a)(1)(ii) | 50.36(c)(2) | 50.73(a)(2)(vii) | Other (Specify in Abstract below and in Text) |
| 20.405(a)(1)(iii) | 50.73(a)(2)(i) | 50.73(a)(2)(viii)(A) | |
| 20.405(a)(1)(iv) | 50.73(a)(2)(ii) | 50.73(a)(2)(viii)(B) | |
| 20.405(a)(1)(v) | 50.73(a)(2)(iii) | 50.73(a)(2)(x) | |

LICENSEE CONTACT FOR THIS LER (12)

| Name | TELEPHONE NUMBER | |
|---|---|---|
| | AREA CODE | |
| Suzette Walters, Technical Staff Engineer, Extension 2144 | 3 0 9 | 6 5 4 - 2 2 4 1 |

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 |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| | | | | | | | | | |

| SUPPLEMENTAL REPORT EXPECTED (14) | | Expected Submission Date (15) | Month | Day | Year |
|---|---|---|---|---|---|
| x Yes (If yes, complete EXPECTED SUBMISSION DATE) | NO | | 0 9 | 1 6 | 8 8 |

ABSTRACT (Limit to 1400 spaces, i.e, approximately fifteen single-space typewritten lines) (16)


On June 19, 1988, Quad Cities Unit Two was at 0 percent thermal power during a refueling outage. At 0058 hours, while returning-to-service reactor water level instrumentation, an improper valving sequence occurred which resulted in various Engineered Safety Feature (ESF) actuations, including an Emergency Core Cooling System (ECCS) initiation. NRC notification of this event was completed at 0440 hours to comply with the requirements of 10CFR50.72.

The Station has performed a root cause analysis. However, to support the Station's analysis, further Investigation is ongoing (with outside assistance). Causal information will be provided in a supplemental report. Corrective action will be developed based on the results of the ongoing investigation. This report is provided to comply with the requirements of 10CFR50.73(a)(2)(iv).


1418H/0436Z

PLANT AND SYSTEM IDENTIFICATION:

General Electric - Boiling Water Reactor - 2511 MWt rated core thermal power. Energy Industry Identification System (EIIS) codes are identified in the text as [XX].

EVENT IDENTIFICATION: Emergency Core Cooling System initiation received due to improper valving sequence during level instrumentation return-to-service.

A. CONDITIONS PRIOR TO EVENT:

Unit: Two | Event Date: June 19, 1988 | Event Time: 0058
Reactor Mode: One | Mode Name: Shutdown | Power Level: 0%

This report was initiated by Deviation Report D-4-2-88-041.

Shutdown Mode (1) - In this position, a reactor scram is initiated, power to the control rod drives is removed, and the reactor protection trip systems have been deenergized for 10 seconds prior to permissive for manual reset.

B. DESCRIPTION OF EVENT:

On June 19, 1988, Quad Cities Unit Two was at 0 percent thermal power during a refuel outage. At 0058 hours, during a return-to-service of reactor water level instrumentation (Loop A) [JB, LI], an improper valving sequence caused an Emergency Core Cooling System (ECCS) [JE] initiation signal. This resulted in the following automatic actions:

- Reactor scram [JC] signal (full scram was already in place);
- 1/2 diesel generator [EK] started;
- Standby Gas Treatment [BH] train started;
- Reactor Building [VA] and Control Room [VI] ventilation isolated;
- Recirculation Pumps [AD, P] tripped;
- Group I, II, III isolations [JE];
- ECCS Injection valves aligned, but injection was prevented before it could occur.

The 2A and 2C Residual Heat Removal (RHR) [BO, P] pumps were already running. The 2B Core Spray pump [BM, P] was in pull-to-lock. The 2B and 2D RHR pumps and the 2A Core Spray pump were out-of-service. The Unit Two diesel generator was not available because of testing. (Technical Specifications 3.5.F.2 and 3.9.E.3 permit the conditions described above.)

NRC notification of this event was completed at 0440 hours to comply with the requirements of 10CFR50.72.

Previously, on June 18, 1988, excess flow check valve [V] (2-263-2-15A) had been taken out-of-service for repair. This out-of-service (#1660-88) isolated the reactor level instruments for ECCS initiation (LIS 2-263-72A and C), Reactor Protection System [JC] (LT 2-263-57A and B), and main turbine high level trip switches [JJ] (LITS 2-263-59A). When the out-of-service checklist was reviewed for OOS (out-of-service) Information Verified by the Shift Engineer, he noted that the root valve [RTV] for these instruments should be isolated last and the individual instrument valves be isolated first. He did this by writing in the Special Instructions section "Do card 1 last." The Special Sequence Required was marked "No" at this time by the original preparer.

Following completion of the work on June 19, 1988, the return-to-service was initiated by the Communication Center Coordinator. It was authorized by the Shift Engineer and taken to the control room for disposition. The Station Control Room Engineer (SCRE) initialed the RTS (return-to-service) Information Verified portion and thought that since "Do card 1 last" was in the Special Instructions and Special Sequence Required was marked "No," that it must apply to the return-to-service. He marked the checklist as such and handed out the job.

An Instrument Maintenance (IM) person and an operator were dispatched to start the return-to-service. The IM was using an Instrument Maintenance procedure for valving in the instruments and realized that valving in the root valve last with an empty variable leg would spike the instruments low. The IM called the Control Room to clarify the return-to-service and to inform the Shift Engineer of the situation. The Shift Engineer told the IM to go ahead with the return-to-service believing that since a full scram was already in place, the unit would receive only half a trip signal when the instruments were valved in. A short time later, with further thought, the Shift Engineer attempted to contact the IM and the operator over the page system. They did not hear the page and the Engineered Safety Feature (ESF) [JE] actuations occurred.

On the next shift, the out-of-service (Master #1673-88) and return-to-service for Loop B of the water level instrumentation, identical to the one done for Loop A, was completed successfully.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

| FACILITY NAME (1) | DOCKET NUMBER (2) | LER NUMBER (6) | | | | | Page (3) | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Year | /// | Sequential Number | /// | Revision Number | | | |
| Quad Cities Unit Two | 0 5 0 0 0 2 6 5 | 8 8 | - | 0 2 0 | - | 0 0 | 0 4 | OF | 0 4 |

TEXT

C. APPARENT CAUSE OF EVENT:

This report is submitted in accordance with the Code of Federal Regulations 10CFR50.73(a)(2)(iv), which requires the reporting of any event or condition that resulted in manual or automatic actuation of any Engineered Safety Feature, including the Reactor Protection System.

The Station has performed a root cause analysis. However, to support the Station's analysis, further investigation is ongoing (with outside assistance). A supplemental report will be issued upon the completion of the investigation. This will be tracked with Nuclear Tracking System (NTS) Number 2652008804101.

D. SAFETY ANALYSIS OF EVENT:

The safety analysis of the event is minimal as the unit was shutdown for a refueling outage. Also, all systems functioned as designed upon receiving the ECCS initiation signal.

E. CORRECTIVE ACTION:

Corrective action will be determined based upon the apparent cause at the completion of the investigation.

F. PREVIOUS EVENTS:

| Licensee Event Report | Description |
|---|---|
| 254/84-013 | Reactor Scram and ECCS initiation while backfilling new instrument lines caused by personnel error. |
| 265/87-011 | Reactor Scram from low level signal caused by personnel error during surveillance test. |
| 254/85-006 | Group I isolation and reactor scram from vibration caused by valving in turbine pressure transmitter. |
| 254/84-016 | Group I isolation and reactor scram occurred when main steam line high flow switch was not prepressurized when it was returned to service. |

G. COMPONENT FAILURE DATA:

There was no component failure identified in this event.