

NOTICE OF VIOLATION  
AND  
PROPOSED IMPOSITION OF CIVIL PENALTY

Commonwealth Edison Company  
Quad Cities Nuclear Power Station  
Units 1 and 2

Docket No. 50-254  
Docket No. 50-265  
License No. DPR-29  
License No. DPR-30  
EA 84-123

A special inspection at the Quad Cities Nuclear Power Station, Units 1 and 2, during the period October 25 through November 4, 1984, disclosed that the Unit 1 licensed operator was allowed to leave his assigned position unattended with the Unit operating at full power for a period of approximately 15 minutes while he responded to an event that was in progress on the adjacent Unit. To emphasize the need to ensure that licensed operators remain in their assigned positions at all times during operation of the facility, the Nuclear Regulatory Commission proposes to impose a civil penalty in the amount of Fifty Thousand Dollars (\$50,000) for this violation. In accordance with the General Statement of Policy and Procedure for NRC Enforcement Actions, 10 CFR Part 2, Appendix C, as revised, 49 FR 8583 (March 8, 1984), and pursuant to Section 234 of the Atomic Energy Act of 1954, as amended ("Act"), 42 U.S.C. 2282, PL 96-295, and 10 CFR 2.205, the particular violation and the associated civil penalty are set forth below:

10 CFR 50.54(k) states, "An operator or senior operator licensed pursuant to Part 55 of this chapter shall be present at the controls at all times during the operation of the facility."

Technical Specification 6.2.A. requires that detailed written procedures be prepared, approved, and adhered to for operating activities involving nuclear safety.

Station Procedure QAP-300-2, Conduct of Shift Operations paragraph 9 delineates responsibilities of all operating department personnel licensed by the Nuclear Regulatory Commission as Reactor Operators and performing the duties of a reactor operator. Section 9b of responsibilities and duties states, "b. To be present at the controls of his assigned shift position at all times."

This duty is further clarified by a notation in the procedure which states in part:

"Paragraph k of 10 CFR 50 states 'An operator or senior operator licensed pursuant to part 55 of this chapter shall be present at the controls at all times during the operation of the facility'. In order to comply with this paragraph, an operator will be considered to be at the reactor controls if he (she) is physically within the operating area in front of the unit panels."

8412180501 841212  
PDR ADDCK 05000254  
Q PDR

Contrary to the above, on October 25, 1984, the Unit 1 operator licensed pursuant to Part 55 was not present at the controls at all times during the operation of the facility. The Unit 1 operator left his assigned unit unattended with the Unit at full power, for a period of approximately 15 minutes, while responding to events occurring on the adjacent Unit. Specifically, the Unit 1 operator left his position to assist the Unit 2 operator in bypassing the Rod Worth Minimizer and then manually initiated the High Pressure Coolant Injection system on Unit 2. During this period there was no operator at the controls physically within the operating area in front of the unit panels of Unit 1, except when he responded to an annunciator on his Unit.

This is a Severity Level III violation (Supplement I).  
(Civil Penalty - \$50,000)

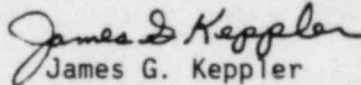
Pursuant to the provisions of 10 CFR 2.201, Commonwealth Edison Company is hereby required to submit to the Deputy Director, Office of Inspection and Enforcement, U. S. Nuclear Regulatory Commission, Washington, DC 20555, and a copy to the Regional Administrator, U. S. Nuclear Regulatory Commission, Region III, 799 Roosevelt Road, Glen Ellyn, IL 60137, within 30 days of the date of this Notice a written statement or explanation, including for the alleged violation: (1) admission or denial of the alleged violation; (2) the reasons for the violation, if admitted; (3) the corrective steps that have been taken and the results achieved; (4) the corrective steps that will be taken to avoid further violations; and (5) the date when full compliance will be achieved. Consideration may be given to extending the response time for good cause shown. Under the authority of Section 182 of the Act, 42 U.S.C. 2232, this response shall be submitted under oath or affirmation.

Within the same time as provided for the response required above under 10 CFR 2.201, Commonwealth Edison Company may pay the civil penalty in the amount of \$50,000 or may protest imposition of the civil penalty, in whole or in part, by a written answer. Should Commonwealth Edison Company fail to answer within the time specified, the Deputy Director, Office of Inspection and Enforcement, will issue an order imposing the civil penalty proposed above. Should Commonwealth Edison elect to file an answer in accordance with 10 CFR 2.205 protesting the civil penalty, such answer may: (1) deny the violations listed in this Notice, in whole or in part; (2) demonstrate extenuating circumstances; (3) show error in this Notice; or (4) show other reasons why the penalty should not be imposed. In addition to protesting the civil penalty in whole or in part, such answer may request remission or mitigation of the penalty. In requesting mitigation of the proposed penalty, the five factors contained in Section V(B) of the revised 10 CFR Part 2, Appendix C, should be addressed. Any written answer in accordance with 10 CFR 2.205 should be set forth separately from the statement or explanation in reply pursuant to 10 CFR 2.201, but may incorporate statements or explanations by specific reference (e.g. citing page and paragraph numbers) to avoid repetition. Commonwealth Edison Company's attention is directed to the other provisions of 10 CFR 2.205, regarding the procedures for imposing a civil penalty.

DEC 12 1984

Upon failure to pay any civil penalties due, which has been subsequently determined in accordance with the applicable provisions of 10 CFR 2.205, this matter may be referred to the Attorney General, and the civil penalties, unless compromised, remitted, or mitigated, may be collected by civil action pursuant to section 234c of the Act, 42 U.S.C. 2282.

FOR THE NUCLEAR REGULATORY COMMISSION

  
James G. Keppler  
Regional Administrator

Dated at Glen Ellyn, Illinois  
this 12<sup>th</sup> day of December 1984

U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-254/84-23(DRP); 50-265/84-21(DRP) Licenses No. DPR-29; DPR-30

Docket Nos. 50-254; 50-265

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

Facility Name: Quad Cities Nuclear Power Station, Units 1 and 2

Inspection At: Quad Cities Site, Cordova, IL during October 25 through  
November 4, 1984

Enforcement Conference At: U. S. Nuclear Regulatory Commission, Region III,  
Glen Ellyn, IL, on November 5, 1984

Inspectors: A. L. Madison  
R. D. Lanksbury

Approved By: N. J. Chrissotimos, Chief  
Reactor Projects Section 2C

11-16-84  
Date

Inspection and Enforcement Conference Summary

Inspection during October 25 through November 4, 1984, and Enforcement  
Conference on November 5, 1984 (Report Nos. 50-254/84-23(DRP) and  
50-265/84-21(DRP))

Areas Inspected: Special, unannounced inspection by the senior resident  
inspector and a regional based inspector of the events prior to, during, and  
subsequent to a Unit 2 reactor scram on October 25, 1984. The inspection  
involved a total of 62 inspector-hours by two NRC inspectors including 14  
inspector-hours onsite during offshifts. The enforcement conference involved  
a total of 32 inspector-hours by 8 NRC personnel.

Results: In the one area inspected, one item of noncompliance was identified  
(Failure to maintain an operator at the controls of an operating reactor -  
Paragraph 2).

84-12140038



## DETAILS

### 1. Persons Contacted

#### Quad Cities Station

\*N. Kalivianakis, Superintendent  
\*T. Tamlyn, Assistant Superintendent for Operations  
G. Price, Master Mechanical Mechanic  
G. Spedl, Technical Staff Supervisor  
R. Visin, Personnel Manager

#### Commonwealth Edison Corporate

\*Cordell Reed, Vice President Nuclear Operations  
\*Dennis Galle, Division Vice President and General Manager,  
Nuclear Station Division  
Dennis Farrar, Nuclear Licensing  
William P. Worden, Operations Manager, BWR  
B. B. Stephenson, Nuclear Station Division Manager  
B. Rybak, Nuclear Licensing  
Michael Turbak, Operations Staff Engineer  
Robert Howard, Control Room Design Review Coordinator

#### Licensee Consultants

E. B. Silverman, President, ARD Corporation  
R. L. Kershner, Vice President, ARD Corporation

#### NRC Representatives

A. B. Davis, Deputy Regional Administrator  
J. A. Axelrad, Director of Enforcement, IE  
J. Lieberman, Director and Chief Counsel, Regional Operations  
and Enforcement Division  
C. J. Paperiello, Acting Deputy Divisional Director  
B. A. Berson, Regional Counsel  
W. D. Shafer, Chief, Projects Branch 2  
N. J. Chrissotimos, Chief, Section 2C  
J. McMillen, Chief, Operator Licensing  
W. Schultz, Enforcement Coordinator  
A. L. Madison, Senior Resident Inspector, Quad Cities  
A. D. Morrongiello, Resident Inspector  
J. C. Bjorgen, Resident Inspector  
C. D. Anderson, Reactor Inspector  
R. B. Landsman, Reactor Inspector  
T. E. Lang, Operator Licensing  
L. Dimmock, Operator Licensing  
E. Plettner, Operator Licensing  
B. Clayton, Human Factors - NRR

\*Indicates those persons present at the Enforcement Conference held on November 5, 1984.

## 2. Unit 2 Reactor Scram

On October 25, 1984, Quad Cities Station Unit 2 experienced a reactor scram.

The following is a sequence of events as reconstructed from log entries and interviews of personnel involved (times are approximate):

- 0550 - Unit 1 was operating at 100% power. Unit 2 was placed in the hot standby condition and the mainsteam isolation valves (MSIVs) were shut in order to repair an oil leak on the turbine's electro-hydraulic control (EHC) system. At this time reactor pressure and power were being controlled by insertion of control rods pursuant to approved procedures.
- 0610 - Shift Engineer (SE) adjourned to SE office to conduct shift turnover with his oncoming relief. Conditions in the Control Room (CR) were determined to be under control.
- 0625 - Shift Control Room Engineers (SCREs) start shift turnover in the control room.
- 0630 - Unit 2 operator was experiencing difficulty controlling reactor pressure and requested assistance. The Rod Worth Minimizer (RWM) indicated that rod C-13 was at position 48 instead of its actual position (00). This caused a rod block and prevented the operator from inserting rods to control pressure. The oncoming SCRE obtained QOP 207-2 "Declaring Rod Worth Minimizer Computer Inoperable" and the offgoing SCRE left the CR to apparently attend to some administrative matters concerning the inoperable RWM. The Unit 1 operator left his position to assist the Unit 2 operator in bypassing the RWM and the Center Desk operator attempted to start the Reactor Core Isolation Cooling (RCIC) system to control reactor pressure and level which subsequently tripped on overspeed.

At this time Unit 1 became unattended.

- 0640 - Reactor pressure continued to increase and, because of procedural inadequacies, the two unit operators were unable to bypass the RWM to insert control rods. Pressure reached 1040 psig causing a reactor scram. The Unit 2 operator verified that power was decreasing and by a quick scan determined that all control rods had inserted and the unit was shutting down. The Unit 1 operator then performed a manual initiation of the High Pressure Coolant Injection (HPCI) System to control pressure and level.
- 0641 - The offgoing SCRE returned to the CR, noted the scram, and contacted the SE by phone.

- 0645 - The Unit 1 operator returned to his unit and was relieved at this time. Also, the SCREs completed their shift turnover and the SE (oncoming who had completed his relief) entered the CR.
- 0654 - An oncoming operator, noting the amount of activity in the CR, decided to assist by calling for an OD-7 printout from the process computer to verify that all rods were inserted. He identified several rods which had "bounced" to the 02 position and, overlooking rod 38-51 being at position 48, then proceeded to insert those rods at 02.
- 0700 - RCIC was manually reset.
- 0709 - A nuclear engineer (NE) called for a second OD-7 and noted rod 38-51 at position 48 and notified the SE.
- 0713 - Rod 38-51 was scrambled from back panel 902-16 and the NE noted that the rod inserted at a slower rate than normal.

### 3. Summary

As a result of this inspection the inspector determined that the Unit 1 operator, licensed pursuant to 10 CFR Part 55, was not present at the controls at all times during the operation of the facility.

At approximately 0630 the Unit 2 operator was experiencing difficulty controlling reactor pressure (the unit was in hot standby with the Main Steam Isolation Valves closed) and requested assistance. At this time the Unit 1 operator left his position to assist the Unit 2 operator in bypassing the Rod Worth Minimizer (Unit 1 was at full power). At approximately 0640 reactor pressure increased to 1040 psig causing a reactor scram. The Unit 2 operator following procedures began verifying that the unit was shutting down. The Unit 1 operator then performed a manual initiation of the High Pressure Coolant Injection system to control pressure and level. At approximately 0645 the Unit 1 operator returned to his unit and was relieved at this time.

The inspectors further determined that the Unit 1 operator did respond to an alarm on Unit 1 during this 15 minute interval. The licensee's investigation indicated that the operator returned to his unit on at least one other occasion and possibly a third time during the 15 minute interval. This information was provided during the enforcement conference. Followup of this could not confirm or deny this information.

10 CFR 50.54(k) and Quad Cities QAP-300-2 requires that a licensed operator be present at the controls at all times during operation of the facility. The operator leaving Unit 1 during a 15 minute interval while the unit was at power is considered a violation.

The inspection also identified weaknesses in both the operators and Shift Control Room Engineer's performance. We are concerned that a shift turnover was conducted by the SCREs during the event and that the SCRE

did not exercise adequate control of control room operations, in that prior to the Shift Engineer's (SE's) arrival the SCRE did not recognize that Unit 1 was unattended. Also, it required approximately thirty minutes for the control room staff to identify the failure of one control rod to insert from the "full out" position. Additionally, the SCRE did not advise the SE in a timely manner of the events prior to the unit scram.

Further, two procedures appear to be inadequate.

QGP 2-4 "Shutdown From Power Operation To Hot Standby" required the shutting of the MSIVs. This was not necessary for the repair of EHC and made control of reactor pressure and power difficult.

QOP 207-2 "Declaring Rod Worth Minimizer Computer Inoperable" did not give sufficient information or direction to the operators and prevented the timely bypassing of the RWM thus causing the reactor scram.

Revision of these procedures will be tracked as an open item (50-254/84-23-02 (DRP) and 50-265/84-21-01(DRP)).

#### 4. Confirmatory Action Letter

On October 26, 1984, a Confirmatory Action Letter (CAL) was issued by Region III. The CAL delineated several actions which the licensee had or was to perform prior to restart of Unit 2. They were:

1. Conducts tests on the affected Control Rod Drive (CRD) (38-51) for operability, e.g. Friction Timing, Scram, and Stall Flow Tests prior to CRD removal.
2. Remove and replace CRD 38-51 and conduct tests as appropriate.
3. Examine the internals of the removed CRD for excessive wear or damage to seals and bushings on the stop and drive pistons, the index tube, and the spring washers on the stop piston.
4. Walkdown and verify the position of all manual valves in the CRD systems of Units 1 and 2.
5. Investigate to determine the root cause of the manual valve #112 being shut on CRD hydraulic control unit 38-51 and take appropriate corrective action.
6. Identify any instances where operations personnel may not have performed within the scope of their responsibilities during the event and provide assurance that appropriate corrective actions will be taken.

The cause for rod 38-51 not responding to the automatic scram was found to be the fact that the manual scram exhaust valve (112) was shut. Investigations by the licensee were unable to determine the cause and the licensee was cautioned to treat the closure as if caused for malicious intent.



Being unable to determine the cause of closure of the 112 valve, the licensee committed to daily checks of the control rod drive system until sufficient equipment could be obtained to lockwire this and other valves which could prevent the insertion of rods. Equipment operators were cautioned to be on the lookout for similar situations. This completed Item 5 of the CAL.

On October 25, 1984, Region III dispatched a region based specialist to observe the testing performed on CRD 38-51 prior to its removal and to review the actions taken by the licensee to determine the root cause for its failure to insert. No problems were identified.

The CRD was tested, replaced, and its replacement tested prior to restart of Unit 2 on October 27, 1984. No problems were encountered during the testing, replacement or restart and the unit was returned to full power operation.

On October 30, 1984, the senior resident inspector observed the disassembly of the removed CRD. With the exception of the lower stop piston seals, all components were found to be in acceptable condition. The broken condition of the lower stop piston seals, while possibly caused by several factors, could have been caused by the scrambling of the CRD with the exhaust valve shut. Therefore, it is felt that the precautionary removal of the affected CRD was warranted.

This completed actions 1, 2, and 3 of the CAL.

The licensee also accomplished Item 4 during this time interval.

In response to item 6, the licensee conducted an exhaustive investigation of the event with the operators involved. The control room operators were instructed as to their functions during transients, such as remaining at their units, prior to taking their shift. On October 26, 1984, the NRC had a telephone conversation with the licensee discussing the CAL items.

Item 6 of the CAL is considered open until a written response to this report is received including long term corrective actions.  
(50-254/84-23-03(DRP) and 50-265/84-21-02(DRP))

The licensee's actions in response to the CAL were satisfactory which allowed restart on October 27, 1984.

#### 5. Enforcement Conference

The Region III staff met with licensee representatives (denoted in Paragraph 1) for an Enforcement Conference on November 5, 1984, in the Region III Office. The purpose of the Enforcement Conference was to discuss the inspection findings and planned or completed licensee corrective actions.

The Region III staff provided a discussion of the facts concerning the October 25, 1984, reactor scram of Unit 2.

The licensee provided a discussion of the facts as determined by their investigation. These facts agreed with the facts presented by the NRC. The licensee also described the actions they had taken and plan to take in response to the concerns identified.