

RAR-91-12

March 4, 1991

U. S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, D. C. 20555

SUBJECT: Quad Cities Nuclear Station Units 1 and 2  
Monthly Performance Report  
NRC Docket Nos. 50-254 and 50-265

Enclosed for your information is the Monthly Performance Report covering the operation of Quad-Cities Nuclear Power Station, Units One and Two, during the month of February 1991.

Respectfully,

COMMONWEALTH EDISON COMPANY  
QUAD-CITIES NUCLEAR POWER STATION

*R. A. Robey*  
R. A. Robey  
Technical Superintendent

RAR/CALS/klm

Enclosure

cc: A. B. Davis, Regional Administrator  
T. Taylor, Senior Resident Inspector

nrcreprt

9103120002 910228  
FDR ADOCK 05000254  
R FDR

IE24  
11

QUAD-CITIES NUCLEAR POWER STATION

UNITS 1 AND 2

MONTHLY PERFORMANCE REPORT

FEBRUARY 1991

COMMONWEALTH EDISON COMPANY

AND

IOWA-ILLINOIS GAS & ELECTRIC COMPANY

NRC DOCKET NOS. 50-254 AND 50-265

LICENSE NOS. DPR-29 AND DPR-30

## TABLE OF CONTENTS

- I. Introduction
- II. Summary of Operating Experience
  - A. Unit One
  - B. Unit Two
- III. Plant or Procedure Changes, Tests, Experiments, and Safety Related Maintenance
  - A. Amendments to Facility License or Technical Specifications
  - B. Facility or Procedure Changes Requiring NRC Approval
  - C. Tests and Experiments Requiring NRC Approval
  - D. Corrective Maintenance of Safety Related Equipment
- IV. Licensee Event Reports
- V. Data Tabulations
  - A. Operating Data Report
  - B. Average Daily Unit Power Level
  - C. Unit Shutdowns and Power Reductions
- VI. Unique Reporting Requirements
  - A. Main Steam Relief Valve Operations
  - B. Control Rod Drive Scram Timing Data
- VII. Refueling Information
- VIII. Glossary

## I. INTRODUCTION

Quad-Cities Nuclear Power Station is composed of two Boiling Water Reactors, each with a Maximum Dependable Capacity of 769 MWe Net, located in Cordova, Illinois. The Station is jointly owned by Commonwealth Edison Company and Iowa-Illinois Gas & Electric Company. The Nuclear Steam Supply Systems are General Electric Company Boiling Water Reactors. The Architect/Engineer was Sargent & Lundy, Incorporated, and the primary construction contractor was United Engineers & Constructors. The Mississippi River is the condenser cooling water source. The plant is subject to license numbers DPR-29 and DPR-30, issued October 1, 1971, and March 21, 1972, respectively; pursuant to Docket Numbers 50-254 and 50-265. The date of initial Reactor criticalities for Units One and Two, respectively were October 18, 1971, and April 26, 1972. Commercial generation of power began on February 18, 1973 for Unit One and March 10, 1973 for Unit Two.

This report was compiled by Cynthia A. Losek-Short and Karen McDearmon, telephone number 309-654-2241, extensions 2938 and 2240.

nrcrprt

## II. SUMMARY OF OPERATING EXPERIENCE

### A. Unit One

Unit One began the month of February with the continuation of the refuel outage. Preliminary testing of the Unit continued throughout the month in preparation for startup in March.

### B. Unit Two

Unit Two began the month of February operating in Economic Generation Control (EGC). Normal operational activities were performed for the month. The unit remained in EGC or operated near full power with the only drop in power occurring on February 16th per request of Chicago Load Dispatch.

III. PLANT OR PROCEDURE CHANGES, TESTS, EXPERIMENTS,  
AND SAFETY RELATED MAINTENANCE

A. Amendments to Facility License or Technical  
Specifications

Technical Specification Amendments No. 123 and No. 128 were issued on February 13, 1991 to Facility Operating Licenses DPR-30 and DPR-29, respectively, for Quad Cities Nuclear Power Station. These amendments extend the ending date of Quad Cities operating license from February 15, 2007 to December 14, 2012.

B. Facility or Procedure Changes Requiring NRC Approval

There were no Facility or Procedure changes requiring NRC approval for the reporting period.

C. Tests and Experiments Requiring NRC Approval

There were no Tests or Experiments requiring NRC approval for the reporting period.

D. Corrective Maintenance of Safety Related Equipment

The following represents a tabular summary of the major safety related maintenance performed on Units One and Two during the reporting period. This summary includes the following: Work Request Numbers, Licensee Event Report Numbers, Components, Cause of Malfunctions, Results and Effects on Safe Operation, and Action Taken to Prevent Repetition.

UNIT 1 MAINTENANCE SUMMARY

<u>WORK REQUEST</u>	<u>SYSTEM</u>	<u>EID DESCRIPTION</u>	<u>WORK PERFORMED</u>
Q89258	0743	Valve Leaks. Replace or repair check valve.	As left: Installed a new check valve using existing fittings from the old valve.
Q85518	1001	Remove anti-rotation pin, replace it if bent.	As found: Found the anti-rotation pin to be bent from improper limit settings. As left: Replaced the anti-rotation pin and lock tightened the set screws. Operated the valve after Electrical Maintenance and Operations stroked it, and found it worked well.
Q89706	1001	Adjust the limits on 1-1001-7C to meet the criteria in QEMP 600-1.	As found: TSO bypass limit was delinquent, the limit switch was set too far open on 14" gate valve, and also found valve seating at intermittent current levels. Torque switch suspected cause of valve seating problem. As left: Adjusted TSO bypass limit to 21% and opened limit switch to 12" of stem travel. Replaced the torque switch and balanced the new one.

UNIT 2 MAINTENANCE SUMMARY

<u>WORK REQUEST</u>	<u>SYSTEM</u>	<u>EID DESCRIPTION</u>	<u>WORK PERFORMED</u>
Q89757	8802	When cycling to open position the 8802B went to Dual indication position. Request repair as soon as possible.	As found: Found diaphragm leaking on the 8802B. As left: Changed out the diaphragm and found 2 holes in old diaphragm.



#### IV. LICENSEE EVENT REPORTS

The following is a tabular summary of all licensee event reports for Quad-Cities Units One and Two occurring during the reporting period, pursuant to the reportable occurrence reporting requirements as set forth in sections 6.6.B.1. and 6.6.B.2. of the Technical Specifications.

##### UNIT 1

<u>Licensee Event Report Number</u>	<u>Date</u>	<u>Title of Occurrence</u>
91-004	2/8/91	SBGT Heater Failure Logic Missing
91-005	1/31/9	1/B SBGT Auto Start on RPS B Power Swap when train was in Standby and power swapped in 1 sec.
91-006	2/19/91	B RPS bus power supply trip from OAD
91-007	2/16/91	Actuation of 3B Electromatic Relief

##### UNIT 2

91-004	2/11/91	Both Units SBLC declared INOP due to NPSH
--------	---------	---

## V. DATA TABULATIONS

The following data tabulations are presented in this report:

- A. Operating Data Report
- B. Average Daily Unit Power Level
- C. Unit Shutdowns and Power Reductions



# APPENDIX C OPERATING DATA REPORT

Reactor No. 80-265  
 Unit Two  
 Date March 2, 1971  
 Completed By Cynthia Jones-Bart  
 Telephone 308-654-2141

## OPERATING STATUS

1. Reactor No. and Gross Hours in Report Period: 80-265 672
2. Unit's Authorized Power Level (MWt): 2511 Max. Demand, Capacity (MWt): 767  
Design Electrical Rating (MWt): 182
3. Power Level to which Restricted (if any) (MWt): 660
4. Reasons For Restriction (if any):

	THIS MONTH	YR TO DATE	CUMULATIVE
5. Number of Hours Reactor Was Critical	672.0	1741.5	127031.7
6. Reactor Reserve Shutdown Hours	0.0	0.0	3788.3
7. Hours Generator On Line	672.0	1724.2	123411.2
8. Unit Reserve Shutdown Hours	0.0	0.0	702.4
9. Gross Thermal Energy Generated (MWh)	1593954.0	3084772.0	246314093.0
10. Gross Electrical Energy Generated (MWh)	521747.0	1012741.0	85473999.7
11. Net Electrical Energy Generated (MWh)	505946.0	981790.0	80616842.0
12. Reactor Service Factor	100.0	94.7	77.5
13. Reactor Availability Factor	100.0	94.7	79.3
14. Unit Service Factor	100.0	93.6	75.4
15. Unit Availability Factor	100.0	93.5	75.6
16. Unit Capacity Factor (Using MCR)	97.4	90.1	84.1
17. Unit Capacity Factor (Using Design MWe)	95.4	87.6	82.8
18. Unit Forced Outage Rate	12.6	6.9	7.8

19. Shutdowns Scheduled Over Next 3 Months (Type, Date, and Duration of Each):

20. If Shut Down at End of Report Period, Estimated Date of Startup: \_\_\_\_\_

21. Unit in Test Status (Prior to Commercial Operation)	Forecast	Achieved
Initial Criticality	_____	_____
Initial Electricity	_____	_____
Commercial Operation	_____	_____





APPENDIX D  
UNIT SHUTDOWNS AND POWER REDUCTIONS

DOCKET NO. 50-254

UNIT NAME Quad Cities Unit One

COMPLETED BY Cynthia A. Losek-Short

DATE March 2, 1991

REPORT MONTH February, 1991

TELEPHONE 309-654-2241

NO.	DATE	TYPE F OR S	DURATION (HOURS)	REASON	METHOD OF SHUTTING DOWN REACTOR	LICENSEE EVENT REPORT NO.	SYSTEM CODE	COMPONENT CODE	CORRECTIVE ACTIONS/COMMENTS
	910201	S	572	C	2	- - - -	RC	FUELXX	Unit One Shutdown for Continuation of Cycle Eleven Refuel Outage.

**APPENDIX D  
UNIT SHUTDOWNS AND POWER REDUCTIONS**

**DOCKET NO.** 50-265  
**UNIT NAME** Quad Cities Unit Two  
**DATE** March 2, 1991

**REPORT MONTH** February, 1991  
**COMPLETED BY** Cynthia A. Losek-Short  
**TELEPHONE** 309-654-2241

NO.	DATE	TYPE F OR S	DURATION (HOURS)	REASON	METHOD OF SHUTTING DOWN REACTOR	LICENSEE EVENT REPORT NO.	SYSTEM CODE	COMPONENT CODE	CORRECTIVE ACTIONS/COMMENTS
	910216	S	11.8	H					Unit Two Power Reduction per Request of Chicago Load Dispatch.



## VI. UNIQUE REPORTING REQUIREMENTS

The following items are included in this report based on prior commitments to the commission:

### A. Main Steam Relief Valve Operations

There were no Main Steam Relief Valve Operatins for the reporting period.

### B. Control Rod Drive Scram Timing Data for Units One and Two

There was no Control Rod Drive scram timing data for Units One and Two for the reporting period.

## VII. REFUELING INFORMATION

The following information about future reloads at Quad-Cities Station was requested in a January 26, 1978, licensing memorandum (78-24) from D. E. O'Brien to C. Reed, et al., titled "Duck Creek, Quad-Cities and Zion Station--NRC Request for Refueling Information", dated January 18, 1978.

QUAD CITIES REFUELING  
INFORMATION REQUEST

QTP 300-S32  
Revision 2  
October 1989

1. Unit: Q1 Reload: 10 Cycle: 11
2. Scheduled date for next refueling shutdown: 11-12-90
3. Scheduled date for restart following refueling: 3-17-91
4. Will refueling or resumption of operation thereafter require a Technical Specification change or other license amendment:  
Yes, a proposed change to Technical Specification has been made to relax the Minimum Critical Power Ratio (MCPR) safety limit. This proposal is based on the Unit One Reload 11 Cycle 12 fuel loading, and has received approval.
5. Scheduled date(s) for submitting proposed licensing action and supporting information:  
  
AUGUST 31, 1990
6. Important licensing considerations associated with refueling, e.g., new or different fuel design or supplier, unreviewed design or performance analysis methods, significant changes in fuel design, new operating procedures:  
  
NONE AT PRESENT TIME.
7. The number of fuel assemblies.
  - a. Number of assemblies in core: 724
  - b. Number of assemblies in spent fuel pool: 1681
8. The present licensed spent fuel pool storage capacity and the size of any increase in licensed storage capacity that has been requested or is planned in number of fuel assemblies:
  - a. Licensed storage capacity for spent fuel: 2657
  - b. Planned increase in licensed storage: 0
9. The projected date of the last refueling that can be discharged to the spent fuel pool assuming the present licensed capacity: 2008

QUAD CITIES REFUELING  
INFORMATION REQUEST

QTP 300-S32  
Revision 2  
October 1989

1. Unit: Q2 Reload: 10 Cycle: 11
2. Scheduled date for next refueling shutdown: 9-7-91
3. Scheduled date for restart following refueling: 12-9-91
4. Will refueling or resumption of operation thereafter require a Technical Specification change or other license amendment:  
NOT AS YET DETERMINED.
5. Scheduled date(s) for submitting proposed licensing action and supporting information:  
  
NOT AS YET DETERMINED.
6. Important licensing considerations associated with refueling, e.g., new or different fuel design or supplier, unreviewed design or performance analysis methods, significant changes in fuel design, new operating procedures:  
  
NONE AT PRESENT TIME.
7. The number of fuel assemblies.
  - a. Number of assemblies in core: 724
  - b. Number of assemblies in spent fuel pool: 2011
8. The present licensed spent fuel pool storage capacity and the size of any increase in licensed storage capacity that has been requested or is planned in number of fuel assemblies:
  - a. Licensed storage capacity for spent fuel: 3897
  - b. Planned increase in licensed storage: 0
9. The projected date of the last refueling that can be discharged to the spent fuel pool assuming the present licensed capacity: 2008

APPROVED

OCT 30 1989

Q.C.O.S.R.

## VIII. GLOSSARY

The following abbreviations which may have been used in the Monthly Report, are defined below:

ACAD/CAM	- Atmospheric Containment Atmospheric Dilution/Containment Atmospheric Monitoring
ANSI	- American National Standards Institute
APRM	- Average Power Range Monitor
ATWS	- Anticipated Transient Without Scram
BWR	- Boiling Water Reactor
CRD	- Control Rod Drive
EHC	- Electro-Hydraulic Control System
EOF	- Emergency Operations Facility
GSEP	- Generating Stations Emergency Plan
HEPA	- High-Efficiency Particulate Filter
HPCI	- High Pressure Coolant Injection System
HRSS	- High Radiation Sampling System
IPCLRT	- Integrated Primary Containment Leak Rate Test
IRM	- Intermediate Range Monitor
ISI	- Inservice Inspection
LER	- Licensee Event Report
LLRT	- Local Leak Rate Test
LPCI	- Low Pressure Coolant Injection Mode of RHRS
LPRM	- Local Power Range Monitor
MAPLHGR	- Maximum Average Planar Linear Heat Generation Rate
MCPR	- Minimum Critical Power Ratio
MFLCPR	- Maximum Fraction Limiting Critical Power Ratio
MPC	- Maximum Permissible Concentration
MSIV	- Main Steam Isolation Valve
NIOSH	- National Institute for Occupational Safety and Health
PCI	- Primary Containment Isolation
PCOMR	- Preconditioning Interim Operating Management Recommendations
RBCCW	- Reactor Building Closed Cooling Water System
RBM	- Rod Block Monitor
RCIC	- Reactor Core Isolation Cooling System
RHRS	- Residual Heat Removal System
RPS	- Reactor Protection System
RWM	- Rod Worth Minimizer
SBGTS	- Standby Gas Treatment System
SBLC	- Standby Liquid Control
SDC	- Shutdown Cooling Mode of RHRS
SDV	- Scram Discharge Volume
SRM	- Source Range Monitor
TBCCW	- Turbine Building Closed Cooling Water System
TIP	- Traversing Incore Probe
TSC	- Technical Support Center

nrcreprt