



**Commonwealth Edison**

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

AMS-94-24

August 4, 1994  
*September*

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 August 1994.

Respectfully,

ComEd  
Quad-Cities Nuclear Power Station

*Brian R. Stutzman*

Anthony M. Scott  
System Engineering Supervisor

AMS/dak

Enclosure

cc: J. Martin, Regional Administrator  
C. Miller, Senior Resident Inspector

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QUAD-CITIES NUCLEAR POWER STATION

UNITS 1 AND 2

MONTHLY PERFORMANCE REPORT

August 1994

COMMONWEALTH EDISON COMPANY

AND

IOWA-ILLINOIS GAS & ELECTRIC COMPANY

NRC DOCKET NOS. 50-254 AND 50-265

LICENSE NOS. DPR-29 AND DPR-30

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## 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 Kristal Moore and Debra Kelley, telephone number 309-654-2241, extensions 3070 and 2240.

## II. SUMMARY OF OPERATING EXPERIENCE

### A. Unit One

Quad Cities Unit One began the month of August 1994 in cold shutdown. The Refuel Outage Q1R13 ended on August 19, at 1408 hours when the reactor was made critical. The High Pressure Coolant Injection System was declared inoperable and the reactor was manually scrammed on August 21, at 0538. While repairs were being made to HPCI, the station decided to replace the seal on the 1B Recirculation Pump. On August 25, at 2334 the reactor was again made critical and the generator was synchronized to the grid on August 28, at 1040 hours.

### B. Unit Two

Quad Cities Unit Two began the month of August 1994 at full capable power. On August 23, at 0827 hours a auto scram occurred when a Group 1 isolation occurred, which was caused by a spurious Main Steam Line high flow signal. The results of the root cause investigation was vibration on the instrument racks. On August 27, at 0445 the reactor was made critical and the generator was synchronized to the grid at 1340 hours. A forced load drop occurred on August 30, at 0006 due to loss of the 2A Recirc M-G set. Inserted rods to below 70% Flow Control Line to avoid instability region. The unit was brought to full load on August 31, at 0925 hours.

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

A. Amendments to Facility License or Technical Specifications

There were no Amendments to the Facility License or Technical Specifications for the reporting period.

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.

#### 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>
94-006	08/08/94	Exposure from a Rad Source.
94-008	08/20/94	HPCI INOP.
94-009	08/23/94	Inadequate review of source inventory.
94-010	08/08/94	CR HVAC INOP

##### UNIT 2

<u>Licensee Event Report Number</u>	<u>Date</u>	<u>Title of occurrence</u>
94-006	08/23/94	Rx Scram from MSIV Closure.
94-010	08/29/94	CRD D-11 Scrammed in.

## 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

DOCKET NO. 50-254

UNIT One

DATE September 7,  
1994

COMPLETED BY Kristal Moore

TELEPHONE (309) 654-2241

## OPERATING STATUS

0000 080194

1. REPORTING PERIOD: 2400 083194 GROSS HOURS IN REPORTING PERIOD: 744

2. CURRENTLY AUTHORIZED POWER LEVEL (MWt): 2511 MAX > DEPEND > CAPACITY: 769  
DESIGN ELECTRICAL RATING (MWe-NET): 789

3. POWER LEVEL TO WHICH RESTRICTED (IF ANY) (MWe-Net): N/A

4. REASONS FOR RESTRICTION (IF ANY):

	THIS MONTH	YR TO DATE	CUMULATIVE
5. NUMBER OF HOURS REACTOR WAS CRITICAL	184.00	1890.00	151671.30
6. REACTOR RESERVE SHUTDOWN HOURS	0.00	0.00	3421.90
7. HOURS GENERATOR ON LINE	85.30	1768.20	147064.50
8. UNIT RESERVE SHUTDOWN HOURS	0.00	0.00	909.20
9. GROSS THERMAL ENERGY GENERATED (MWH)	59524.80	3925318.90	317618506.10
10. GROSS ELECTRICAL ENERGY GENERATED (MWH)	12023.00	1277168.00	102975287.00
11. NET ELECTRICAL ENERGY GENERATED (MWH)	4706.00	1211414.00	97129412.00
12. REACTOR SERVICE FACTOR	24.73	32.41	77.29
13. REACTOR AVAILABILITY FACTOR	24.73	32.41	79.03
14. UNIT SERVICE FACTOR	11.47	30.32	74.94
15. UNIT AVAILABILITY FACTOR	11.47	30.32	75.40
16. UNIT CAPACITY FACTOR (Using MDC)	0.82	27.02	64.36
17. UNIT CAPACITY FACTOR (Using Design MWe)	0.80	26.33	62.73
18. UNIT FORCED OUTAGE RATE	0.00	1.26	6.25

19. SHUTDOWNS SCHEDULED OVER NEXT 6 MONTHS (TYPE, DATE, AND DURATION OF EACH):

20. IF SHUTDOWN AT END OF REPORT PERIOD &lt; ESTIMATED DATE OF STARTUP:

21. UNITS IN TEST STATUS (PRIOR TO COMMERCIAL OPERATION):

	FORECAST	ACHIEVED	
INITIAL CRITICALITY			
INITIAL ELECTRICITY			
COMMERCIAL OPERATION			

APPENDIX C			
OPERATING DATA REPORT			
DOCKET NO.		50-265	
UNIT		Two	
DATE		September 7, 1994	
COMPLETED BY		Kristal Moore	
TELEPHONE		(309) 654-2241	
OPERATING STATUS			
0000 080194			
1. REPORTING PERIOD: 2400 083194 GROSS HOURS IN REPORTING PERIOD: 744			
2. CURRENTLY AUTHORIZED POWER LEVEL (MWt): 2511 MAX > DEPEND > CAPACITY: 769 DESIGN ELECTRICAL RATING (MWe-NET): 789			
3. POWER LEVEL TO WHICH RESTRICTED (IF ANY) (MWe-net): N/A			
4. REASONS FOR RESTRICTION (IF ANY):			
	THIS MONTH	YR TO DATE	CUMULATIVE
5. NUMBER OF HOURS REACTOR WAS CRITICAL	651.70	4693.10	148594.15
6. REACTOR RESERVE SHUTDOWN HOURS	0.00	0.00	2985.80
7. HOURS GENERATOR ON LINE	642.80	4616.30	144799.45
8. UNIT RESERVE SHUTDOWN HOURS	0.00	0.00	702.90
9. GROSS THERMAL ENERGY GENERATED (MWH)	1529260.50	10887670.20	313668632.10
10. GROSS ELECTRICAL ENERGY GENERATED (MWH)	480868.00	3497100.00	100806870.00
11. NET ELECTRICAL ENERGY GENERATED (MWH)	457714.00	3349445.00	95492005.00
12. REACTOR SERVICE FACTOR	87.59	80.49	76.33
13. REACTOR AVAILABILITY FACTOR	87.59	80.49	77.86
14. UNIT SERVICE FACTOR	86.40	79.17	74.38
15. UNIT AVAILABILITY FACTOR	86.40	79.17	74.74
16. UNIT CAPACITY FACTOR (Using MDC)	80.00	74.70	63.78
17. UNIT CAPACITY FACTOR (Using Design MWe)	77.97	72.80	62.17
18. UNIT FORCED OUTAGE RATE	13.60	20.82	8.98
19. SHUTDOWNS SCHEDULED OVER NEXT 6 MONTHS (TYPE, DATE, AND DURATION OF EACH):			
20. IF SHUTDOWN AT END OF REPORT PERIOD < ESTIMATED DATE OF STARTUP:			
21. UNITS IN TEST STATUS (PRIOR TO COMMERCIAL OPERATION):			
	FORECAST	ACHIEVED	
INITIAL CRITICALITY			
INITIAL ELECTRICITY			
COMMERCIAL OPERATION			

APPENDIX B  
AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO 50-254  
UNIT One  
DATE September 7, 1994  
COMPLETED BY Kristal Moore  
TELEPHONE (309) 654-2241

MONTH August 1994

DAY AVERAGE DAILY POWER LEVEL  
(MWe-Net)

1.	<u>- 8</u>
2.	<u>- 8</u>
3.	<u>- 8</u>
4.	<u>- 8</u>
5.	<u>- 8</u>
6.	<u>- 8</u>
7.	<u>- 8</u>
8.	<u>- 8</u>
9.	<u>- 8</u>
10.	<u>- 8</u>
11.	<u>- 8</u>
12.	<u>- 8</u>
13.	<u>- 8</u>
14.	<u>- 8</u>
15.	<u>- 8</u>
16.	<u>- 8</u>

DAY AVERAGE DAILY POWER LEVEL  
(MWe-Net)

17.	<u>- 8</u>
18.	<u>- 8</u>
19.	<u>- 8</u>
20.	<u>- 8</u>
21.	<u>- 8</u>
22.	<u>- 8</u>
23.	<u>-10</u>
24.	<u>-10</u>
25.	<u>-10</u>
26.	<u>-13</u>
27.	<u>-12</u>
28.	<u>41</u>
29.	<u>113</u>
30.	<u>125</u>
31.	<u>161</u>

INSTRUCTIONS

On this form, list the average daily unit power level in MWe-Net for each day in the reporting month. Compute to the nearest whole megawatt. These figures will be used to plot a graph for each reporting month. Note that when maximum dependable capacity is used for the net electrical rating of the unit, there may be occasions when the daily average power level exceeds the 100% line (or the restricted power level line). In such cases, the average daily unit power output sheet should be footnoted to explain the apparent anomaly.

1.16-8

APPENDIX B  
AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO 50-265  
UNIT Two  
DATE September 7, 1994  
COMPLETED BY Kristal Moore  
TELEPHONE (309) 654-2241

MONTH August 1994

DAY AVERAGE DAILY POWER LEVEL  
(MWe-Net)

1.	<u>752</u>
2.	<u>753</u>
3.	<u>752</u>
4.	<u>751</u>
5.	<u>749</u>
6.	<u>754</u>
7.	<u>721</u>
8.	<u>753</u>
9.	<u>753</u>
10.	<u>756</u>
11.	<u>756</u>
12.	<u>759</u>
13.	<u>758</u>
14.	<u>743</u>
15.	<u>756</u>
16.	<u>756</u>

DAY AVERAGE DAILY POWER LEVEL  
(MWe-Net)

17.	<u>757</u>
18.	<u>755</u>
19.	<u>752</u>
20.	<u>755</u>
21.	<u>711</u>
22.	<u>724</u>
23.	<u>258</u>
24.	<u>- 9</u>
25.	<u>- 9</u>
26.	<u>-12</u>
27.	<u>135</u>
28.	<u>732</u>
29.	<u>747</u>
30.	<u>232</u>
31.	<u>508</u>

INSTRUCTIONS

On this form, list the average daily unit power level in MWe-Net for each day in the reporting month. Compute to the nearest whole megawatt. These figures will be used to plot a graph for each reporting month. Note that when maximum dependable capacity is used for the net electrical rating of the unit, there may be occasions when the daily average power level exceeds the 100% line (or the restricted power level line). In such cases, the average daily unit power output sheet should be footnoted to explain the apparent anomaly.

## APPENDIX D

DOCKET NO. 50-254

UNIT NAME One

COMPLETED BY Kristal Moore

DATE September 7, 1994 REPORT MONTH August 1994

TELEPHONE 309-654-2241

[illegible]



## APPENDIX D

### UNIT SHUTDOWNS AND POWER REDUCTIONS

DOCKET NO. 50-265

UNIT NAME Two

COMPLETED BY Kristal Moore

DATE September 7, 1994 REPORT MONTH August 1994

TELEPHONE 309-654-2241

[illegible]

## 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

Relief valve operations during the reporting period are summarized in the following table. The table includes information as to which relief valve was actuated, how it was actuated, and the circumstances resulting in its actuation.

Unit: One

Date: August 29, 1994

<u>Valve Actuated:</u>	<u>No. &amp; Type of Actuation:</u>
1-203-3A	1 Manual
1-203-3B	1 Manual
1-203-3C	1 Manual
1-203-3D	1 Manual
1-203-3E	1 Manual

Plant Conditions: 920 psig

Description of Events: Post maintenance.

Unit: Two

Date: August 23, 1994

Valve Actuated: 2-203-3B ERV

No. & Type of Actuation: Automatic

Plant Conditions: Reactor pressure 1100 psig

Description of Events: Automatic actuation by pressure controller.

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

The basis for reporting this data to the Nuclear Regulatory Commission are specified in the surveillance requirements of Technical Specifications 4.3.C.1 and 4.3.C.2.

The following table is a complete summary of Units One and Two Control Rod Drive Scram timing for the reporting period. All scram timing as performed with reactor pressure greater than 800 PSIG.

RESULTS OF SCRAM TIMING MEASUREMENTS  
PERFORMED ON UNIT 1 & 2 CONTROL  
ROD DRIVES, FROM 01/01/94 TO 12/31/94

DATE	NUMBER OF RODS	AVERAGE TIME IN SECONDS AT % INSERTED FROM FULLY WITHDRAWN				MAX. TIME FOR 90% INSERTION	DESCRIPTION
		5 0.375	20 0.900	50 2.00	90 3.5		
						7 sec.	Technical Specification 3.3.C.1 & 3.3.C.2 (Average Scram Insertion Time)
01-27-94	1	0.31	0.69	1.45	2.53	H-1 2.53	U1 for Maintenance
01-29-94	1	0.33	0.73	1.51	2.58	M-10 2.58	U1 for Maintenance
01-29-94	177	0.32	0.69	1.46	2.56	H-3 2.92	U2 SEQ A & B for Tech Spec & Maintenance
02-10-94	1	0.29	0.65	1.39	2.41	F-7 2.41	U1 F-7 for WR Q12855
02-19-94	1	0.31	0.69	1.45	2.53	H-1 2.53	U1 H-1 for WR Q14360
02-23-94	1	0.30	0.68	1.45	2.62	J-3 2.62	U2 J-3 for WR Q14662
06-28-94	7	0.31	0.69	1.45	2.54	2.67	U2 H-5, H-3, E-5, D-13, H-11, D-5 L-3 for WR Q15111 SSPV
07-13-94	4	0.33	0.71	1.48	2.57	2.77	U2 K-13, B-7, D-7, E-4
08-31-94	177	0.30	0.68	1.45	2.54	2.80	U1 BOC Q1C14



## 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 "Dresden, Quad-Cities and Zion Station--NRC Request for Refueling Information", dated January 18, 1978.

QUAD CITIES REFUELING  
INFORMATION REQUEST

QTP 300-532  
Revision 2  
October 1989

1. Unit: Q1 Reload: 13 Cycle: 14
2. Scheduled date for next refueling shutdown: 9-6-95
3. Scheduled date for restart following refueling: 12-24-95
4. Will refueling or resumption of operation thereafter require a Technical Specification change or other license amendment:  
NO
5. Scheduled date(s) for submitting proposed licensing action and supporting information:  
  
3-6-95
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:
7. The number of fuel assemblies.
  - a. Number of assemblies in core: 724
  - b. Number of assemblies in spent fuel pool: 1717
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: 3657
  - 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: 2006

QUAD CITIES REFUELING  
INFORMATION REQUEST

QTP 300-S32  
Revision 2  
October 1989

1. Unit: Q2 Reload: 12 Cycle: 13
2. Scheduled date for next refueling shutdown: 1-29-95
3. Scheduled date for restart following refueling: 4-9-95
4. Will refueling or resumption of operation thereafter require a Technical Specification change or other license amendment:  
YES - Safety limit MCPR to be changed from 1.06 to 1.07 due to GE10 Fuel.
5. Scheduled date(s) for submitting proposed licensing action and supporting information:  
7-28-94
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:  
144 GE10 fuel bundles will be loaded during Q2R13.
7. The number of fuel assemblies.
  - a. Number of assemblies in core: 724
  - b. Number of assemblies in spent fuel pool: 2583
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: 2006

## 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