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Quad Cities Nuclear Power Station
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RAR-90-66

September 4, 1990

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, 1990.

Respectfully,

COMMONWEALTH EDISON COMPANY
QUAD-CITIES NUCLEAR POWER STATION

R. A. Robey

R. A. Robey
Technical Superintendent

RAR/LFD/do

Enclosure

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

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QUAD-CITIES NUCLEAR POWER STATION

UNITS 1 AND 2

MONTHLY PERFORMANCE REPORT

August, 1990

COMMONWEALTH EDISON COMPANY

AND

IOWA-ILLINOIS GAS & ELECTRIC COMPANY

NRC DOCKET NOS. 50-254 AND 50-265

LICENSE NOS. DPR-29 AND DPR-30

0027H/0061Z

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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 Lynne Hamilton and Verna Koselka, telephone number 309-654-2241, extensions 2185 and 2240.

II. SUMMARY OF OPERATING EXPERIENCE

A. Unit One

Unit One began the month of August operating at 250 MWe at the request of the Chicago Load Dispatcher. At 1150 hours, the unit was taken to full power levels per the Load Dispatcher. On August 2, at 2206 hours, the unit was placed in Economic Generation Control (EGC). On August 3, at 0745 hours, the unit was taken out of EGC and load was increased to 810 MWe. From August 4 to August 9, the unit remained in EGC or operated near full power with power levels being adjusted according to the demands of the load dispatcher. Routine surveillances were performed.

On August 9, at 0820 hours, a power reduction to 250 MWe was taken for Instrument Maintenance to test and repair the #1 Turbine Control Valve after noting valve oscillations. At 1155 hours, during troubleshooting of the #1 Turbine Control Valve, an unexpected RPS A 1/2 Scram was received while the #1 control valve was being held closed with the test switch. The cause of the 1/2 Scram was unexpected relay chatter of the Turbine Control Valve fast closure scram bypass. The 1/2 Scram was immediately reset and an additional group of rods were inserted to reduce load and prevent relay chatter. Instrument Maintenance then tightened a loose wire on the local junction box terminal strip for the #1 control valve. At 1808 hours, the unit was taken to 797 MWe.

On August 11, at 0300 hours, while testing electromatic relief valves for a scheduled HPCI inoperability the 1-203-3C electromatic relief valve failed to open the first and second attempt. The valve opened and functioned normally on the third attempt. At 0735 hours, tailpipe temperature on the 3C relief valve was greater than 330°F, indicating that the valve may not have fully closed. It was determined by Station Management to drop load, de-inert the drywell, and inspect the valve. It was discovered that a spring on the valve actuator mechanism had come loose. This spring and another spring on the opposite side of the actuator armature keeps the armature in alignment while it is stroked. At 1930 hours, it was decided to bring the unit to cold shutdown to repair the valve. At 2151 hours, Unit One was shutdown. The unit remained shutdown through August 17 while repairs were made to the 3C electromatic relief valve. Preventive Maintenance was performed on various other systems as well.

On August 17, unit startup commenced, and at 0842 hours, the reactor became critical. At 2301 hours, the generator was synchronized to the grid. An increase to full power level was begun using control rods and recirculation pumps. On August 18, at 2315 hours, full power was achieved.

For the remainder of the month, the unit remained in EGC or operated near full power with power levels being adjusted accordingly. Routine surveillances were performed.

B. Unit Two

Unit Two began the month of August operating at full power levels. Normal operational activities occurred for the month with power levels being adjusted according to the demands of the Chicago Load Dispatcher. The unit remained in Economic Generation Control or operated near full power levels with minor interruptions to perform routine surveillances.

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.

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

WORK REQUEST	SYSTEM	EID DESCRIPTION	WORK PERFORMED
Q80846	0293	Valve, Spare Electromatic Relief S/N BX00293	As found: Seat on piston (disc) ruined by ultrasonic cleaning. As left: Relapped main seat; installed new disc, rings, guide; assembled valve; tested on nitrogen.
Q81937	0293	Valve, Spare Electromatic Relief S/N BX00293	Seal welded disc retainers on electromatic relief valve BX293.
Q86574	0203	Valve Electromatic Pilot	As found: Inspected and found no problems on EPN's that need to be addressed at this time. As left: EPN solenoids will be rebuilt under Q84018.
Q85893	1001	Valve RHR 1A Heat Exchanger Service Water Discharge Control	As found: Nut loose, on valve stem to transition block. As left: Loctited and tightened nut.

UNIT 2 MAINTENANCE SUMMARY

WORK REQUEST	SYSTEM	EID DESCRIPTION	WORK PERFORMED
Q86350	1001	Indicator Pressure RHR Section	As found: Indicator was found to be indicating properly. As left: Indicator was taken to the IM hot shop and was calibrated.

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

Licensee Event Report Number	Date	Title of Occurrence
90-16	08/09/90	Failure of 1/2A Fire Pump to Start on Low Fire Header Pressure. Also Failed to Start Manually
90-17	08/11/90	Failure of HPCI Steam Exhaust Check Valve 1-2301-45
90-18	08/29/90	Both Units Potentially Outside Design Basis for Divisional Separation

UNIT 2

There were no licensee event reports for Unit 2 for this reporting period.

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 5, 1990
Completed By Lynne Hamilton
Telephone 309-654-2241

OPERATING STATUS

1. Reporting Period 0000 080190 Gross Hours in Report Period: 744
   2400 083190

2. Currently Authorized Power Level (MWt): 2511 Max. Depend. Capacity (MWe-Net): 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	613.2	5585.8	129749.6
6.	Reactor Reserve Shutdown Hours	0.0	0.0	3421.9
7.	Hours Generator On Line	598.8	5546.9	125637.5
8.	Unit Reserve Shutdown Hours	0.0	0.0	909.2
9.	Gross Thermal Energy Generated (MWh)	1345891.0	12950839.0	268633200.0
10.	Gross Electrical Energy Generated (MWh)	431181.0	4211768.0	87063325.0
11.	Net Electrical Energy Generated (MWh)	416423.0	4048732.0	81889118.0
12.	Reactor Service Factor	82.4	95.8	80.5
13.	Reactor Availability Factor	82.4	95.8	82.6
14.	Unit Service Factor	80.5	95.1	77.9
15.	Unit Availability Factor	80.5	95.1	78.5
16.	Unit Capacity Factor (Using MDC)	72.8	90.3	66.1
17.	Unit Capacity Factor (Using Design MWe)	70.9	88.0	64.4
18.	Unit Forced Outage Rate	4.4	1.9	5.3

19. Shutdowns Scheduled Over Next 6 Months (Type, Date, and Duration of Each):

20. If Shut Down 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 C
OPERATING DATA REPORT

Docket No. 50-265
Unit Two
Date September 5, 1990
Completed By Lynne Hamil on
Telephone 309-654-2241

OPERATING STATUS

1. Reporting Period 0000 080190 Gross Hours in Report Period: 744

2. Currently Authorized Power Level (MWt): 2511 Max. Depend. Capacity (MWe-Net): 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	744.0	3551.2	122935.8
6. Reactor Reserve Shutdown Hours	0.0	0.0	2985.8
7. Hours Generator On Line	744.0	3503.4	119601.9
8. Unit Reserve Shutdown Hours	0.0	0.0	702.9
9. Gross Thermal Energy Generated (MWh)	1[illegible]5466.4	7654418.0	257051035.0
10. Gross Electrical Energy Generated (MWh)	[illegible]4192.0	2490840.0	82429924.0
11. Net Electrical Energy Generated (MWh)	548053.0	2380734.0	77860383.0
12. Reactor Service Factor	100.0	60.9	77.0
13. Reactor Availability Factor	100.0	60.9	78.5
14. Unit Service Factor	100.0	60.1	74.9
15. Unit Availability Factor	100.0	60.1	75.4
16. Unit Capacity Factor (Using MDC)	95.8	53.1	63.4
17. Unit Capacity Factor (Using Design MWe)	93.4	51.7	61.8
18. Unit Forced Outage Rate	0.0	0.0	7.9

19. Shutdowns Scheduled Over Next 6 Months (Type, Date, and Duration of Each):

20. If Shut Down 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 Dns
Date September 5, 1990
Completed By Lynne Hamilton
Telephone 309-654-2241

MONTH AUGUST

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)	DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
1	618	17	-5
2	719	18	516
3	763	19	753
4	747	20	741
5	686	21	762
6	721	22	720
7	699	23	747
8	684	24	788
9	597	25	721
10	687	26	729
11	336	27	757
12	-8	28	762
13	-8	29	729
14	-7	30	727
15	-7	31	685
16	-7		

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 B
AVERAGE DAILY UNIT POWER LEVEL

Docket No. 50-265
Unit Two
Date September 5, 1990
Completed By Lynne Hamilton
Telephone 309-654-2241

MONTH AUGUST

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)	DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
1	649	17	758
2	720	18	763
3	711	19	741
4	759	20	759
5	672	21	768
6	701	22	727
7	773	23	710
8	708	24	730
9	697	25	734
10	676	26	742
11	777	27	764
12	745	28	779
13	771	29	733
14	800	30	734
15	770	31	693
16	772		

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
UNIT SHUTDOWNS AND POWER REDUCTIONS

DOCKET NO. 50-254

UNIT NAME Quad Cities Unit One

COMPLETED BY Lynne Hamilton

DATE September 5, 1990

REPORT MONTH August, 1990

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
90-9	900811	F	27.7	A	2			VALVEX	Reactor Manually Scrammed Due to Failure of 3C Electromatic Relief Valve
		S	117.5	B	4				

APPENDIX D
UNIT SHUTDOWNS AND POWER REDUCTIONS

DOCKET NO. 50-265

UNIT NAME Quad Cities Unit Two **COMPLETED BY** Lynne Hamilton

DATE September 5, 1990 **REPORT MONTH** August, 1990 **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
									None

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 sumarized 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 11, 1990

Valves Actuated	No. & Type of Actuation
1-203-3A	1 Manual
1-203-3B	1 Manual
1-203-3C	1 Manual
1-203-3D	2 Manual
1-203-3E	1 Manual

Plant Conditions: Reactor Pressure - 989 PSIG

Description of Events: Routine surveillance Semi-annual, Manual Operation of Electromatic Relief Valves (QOS 201-1), Tech Spec: Ref. 3.5/4.5.D.1.a

Unit: One

Date: August 17, 1990

Valves Actuated	No. & Type of Actuation
1-203-3C	1 Manual
1-203-3D	1 Manual

Plant Conditions: Reactor Pressure - 990 PSIG

Description of Events: Operability Test (QOS 201-1), Tech Spec: Ref. 3.5/4.5.D.1.a

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 was performed with Reactor pressure greater than 800 PSIG.

RESULTS OF SCRAM TIMING MEASUREMENTS

PERFORMED ON UNIT 1&2 CONTROL

ROD DRIVES, FROM 1-1-90 TO 12-31-90

DATE	NUMBER OF RODS	AVERAGE TIME IN SECONDS AT % INSERTED FROM FULLY WITHDRAWN				MAX. TIME FOR 90% INSERTION	DESCRIPTION
		5	20	50	90		Technical Specification 3.3.C.1 & 3.3.C.2 (Average Scram Insertion Time)
		0.375	0.900	2.00	3.5	7 sec.	
1-22-90	1	0.27	0.65	1.42	2.52	N-10 (2.52)	Unit 1, Hot Scram Timing for test due to 127 Valve Diaphragm Replacement
1-31-90	1	0.29	0.64	1.34	2.36	R-7 (2.36)	Unit 1, Hot Scram Timing for test due to 127 Valve Diaphragm Replacement
5-09-90	177	0.30	0.68	1.45	2.54	H-11 (3.29)	Unit 2, Hot Scram Timing during Start Up Sequence A&B, Cycle 11
6-21-90	88	0.29	0.66	1.40	2.46	M-11 (2.70)	Unit 1, Hot Scram Timing for Sequence B Cycle 11, 1st Sequence of Cycle
8-11-90	1	0.30	0.65	1.38	2.39	P-10 (2.39)	Unit 2, Hot Scram Timing test for Accumulator Replacement

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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. L. O'Brien to C. Reed, et al., titled "Dresden, Quad-Cities, and Zion Station--NRC Request for Refueling Information", dated January 18, 1978.

QTP 300-S32
Revision 2
October 1989

QUAD CITIES REFUELING INFORMATION REQUEST

1. Unit: Q1 Reload: 10 Cycle: 11

2. Scheduled date for next refueling shutdown: 10-27-90

3. Scheduled date for restart following refueling: 1-4-91

4. Will refueling or resumption of operation thereafter require a Technical Specification change or other license amendment:
Yes, a proposed change to Technical Specification will be 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.

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: 1537

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: 2008

*Ninety-six new fuel bundles have arrived on site and will be stored in the Unit One new fuel storage vault.

APPROVED
OCT 30 1989
Q.C.O.S.R.

QTP 300-S32
Revision 2
October 1989

QUAD CITIES REFUELING INFORMATION REQUEST

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 th 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
PCIOMR	-	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