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Quad Cities Nuclear Power Station
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NJK-80-147

May 5, 1980

Director, Office of Management Information and Program Control
Directorate of Licensing
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Gentlemen:

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 April 1980.

Very truly yours,

COMMONWEALTH EDISON COMPANY
QUAD-CITIES NUCLEAR POWER STATION

N. J. Kalivianakis
Station Superintendent

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Enclosure



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QUAD-CITIES NUCLEAR POWER STATION

UNITS 1 AND 2

MONTHLY PERFORMANCE REPORT

APRIL 1980

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, Inc. and the primary construction contractor was United Engineers & Constructors. The condenser cooling method is a closed-cycle spray canal, and 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 1 and 2 respectively were October 18, 1971, and April 26, 1972. Commercial generation of power began on February 18, 1973 for Unit 1 and March 10, 1973 for Unit 2.

This report was compiled by Becky Brown, telephone number 309-654-2241, extension 245.

## II. SUMMARY OF OPERATING EXPERIENCE

### A. Unit One

April 1-3: Unit One began the reporting period holding load at 806 MWe, and held an average load of 795 MWe. At 2330, on April 2, load was reduced at a rate of 100 MWe/hour to a level of 650 MWe. At this level, the main condenser flow was reversed and a control rod pattern change was performed. At 0200 on April 3, load was increased at a rate of 50 MWe/hour. At 0430, the rate increase was reduced to 5 MWe/hour until a level of 810 MWe was achieved.

April 3-6: Unit One held an average load of 805 MWe. At 2330, on April 5, load was decreased at a rate of 100 MWe/hour to a level of 700 MWe to perform weekly turbine-generator test, reverse main condenser flow, and change-over condensate and reactor feed pumps. At 0400, on April 6, load was increased at a rate of 5 MWe/hour until a load of 810 MWe was achieved at 1840.

April 6-12: Unit One held an average load of 789 MWe. At 0120, on April 12, load was decreased at a rate of 100 MWe/hour to a level of 700 MWe to perform weekly turbine-generator test and reverse main condenser flow. At 0400, the load was increased at a rate of 50 MWe/hour. At 0500 the rate of increase was changed to 8 MWe/hour until at 1010 a load of 788 MWe was achieved.

April 13: At 2000, load was reduced to 700 MWe to reverse main condenser flow. At 2215 load was increased at a rate of 50 MWe/hour until a load of 772 MWe was achieved at 1115 on April 14.

April 13-20: Unit One held an average load of 760 MWe. At 2215, on April 19, load was reduced at a rate of 40 MWe/hour to 700 MWe to perform weekly turbine-generator test and reverse main condenser flow. At 0105, on April 20, load was increased at a rate of 30 MWe/hour to a level of 738 MWe.

April 21-27: Unit One held an average load of 720 MWe. At 0500, on April 27, load was reduced at a rate of 100 MWe/hour to a level of 595 MWe to perform weekly turbine-generator test and reverse main condenser flow. At 0635 load was increased at a rate of 50 MWe/hour to 665 MWe. At 0800 the rate of increase was reduced to 8 MWe/hour until a load of 717 MWe was achieved.

April 27-29: Unit One held an average load of 713 MWe at 1550 on April 29. The 1A1 Recirculation M-G Set oil pump tripped, causing the "A" Recirc pump M-G Set to trip. The "B" M-G Set was reduced to minimum speed, causing a decrease in load to 360 MWe. The "A" M-G Set was subsequently re-started. At 1640, load was increased at a rate of 100 MWe/hour to a level of 560 MWe, the rate was then reduced to 8 MWe/hour until a level of 723 MWe was reached at 0510 on April 30.

April 30: Unit One finished the reporting period holding a load of 715 MWe.

B. Unit Two

April 1-19: Unit Two remained shutdown for End of Cycle Four Refueling Outage.

April 20: At 0715, on April 20, the reactor mode switch was placed to startup. At 0725 the first control rods were pulled, and criticality was achieved at 0855.

April 21: At 0150, the Unit Two generator was placed on-line. At 0230, load was increased at a rate of 100 MWe/hour until a level of 200 MWe was reached; at this level a number of startup tests were performed. At 1800 the reactor shut down procedure was begun in order to replace 3C electromatic relief valve, which had failed to operate properly in the startup testing surveillances. At 1840 the generator was taken off-line .

April 22: At 0521 the reactor mode switch was placed in shutdown to replace the electromatic relief valve. At 1430, after maintenance on the electromatic relief valve had been completed, the reactor mode switch was switched to startup; reactor criticality was achieved at 1955.

April 23: At 0346 control rods were inserted to lower reactor power level and pressure in order to test the 3C electromatic relief valve. At 0906 the reactor mode switch was switched to the RUN position. At 1005 the generator was synchronized.

April 24: At 0350 load was increased at a rate of 100 MWe/hour to a level of 400 MWe to perform a transversing in-core probe (TIP) test. At 1750 load was decreased at a rate of 20 MWe/hour due to the inability to produce a differential pressure between the drywell and the suppression chamber. At 1855 the load was decreased at a rate of 75 MWe/hour. At 2342 the generator was taken off-line.

April 25: At 0100 the reactor mode switch was placed in the START-UP mode and at 0350 to the SHUTDOWN mode.

April 26-27: Unit Two remained shutdown to perform maintenance on the drywell to suppression chamber vacuum breakers. At 1347 on April 27, the reactor mode switch was switched to the STARTUP mode. At 1850 reactor criticality was achieved.

April 28: At 0245 the reactor mode switch was switched into the RUN mode. At 0350 control rods were inserted due to high conductivity of the reactor water. At 0435 the reactor mode switch was placed back into the STARTUP mode. At 0545, reactor water conductivity decreased to within the allowable limits. At 0557, the reactor mode switch was placed into the RUN mode. At 0647 the main generator was synchronized. At 0700, load was increased at 50 MWe/hour until at 1645 a load of 430 MWe was reached. Startup test surveillances were performed at this level.

April 29: At 0800 load was increased at a rate of 5 MWe/hour, this rate was then changed to 8 MWe/hour at 1745, and then returned to 5 MWe/hour at 0500 on April 30.

April 30: At 1530 load was leveled at 714 MWe due to a high differential pressure across the Condensate Demineralizers. Unit Two ended the reporting period holding a load of 714 MWe.

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

A. Amendments to Facility License or Technical Specifications

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

B. Facility or Procedure Changes Requiring NRC Approval

There were no facility or procedure changes requiring NRC approval.

C. Tests and Experiments Requiring NRC Approval

There were no tests or experiments performed during the reporting period.

D. Corrective Maintenance of Safety Related Equipment

The following represents a tabular summary of the safety related maintenance performed on Unit One and Unit Two during the reporting period. The headings indicated in this summary include Work Request Numbers, LER Numbers, Components, Cause of Malfunctions, Results and Effects on Safe Operation, and Action Taken to Prevent Repetition.

UNIT ONE MAINTENANCE SUMMARY

| W.R. NUMBER | LER NUMBER | COMPONENT | CAUSE OF MALFUNCTION | RESULTS & EFFECTS ON SAFE OPERATION | ACTION TAKEN TO PREVENT REPETITION |
|---|---|---|---|---|---|
| QO 4578 | | 1/2 Diesel Generator Soak Back Pump | The heater element was bad. | The breaker kept tripping. Diesel Generator was operable. | The heater element was replaced & the D.G. was tested. |
| QO 4581 | 80-09/03L | RHR Valve (1-1001-36B) | The close torque switch was out of adjustment. | The breaker kept tripping. | The torque switch was adjusted & the valve was stroked three times. |
| QO 4611 | | Reactor Bldg. Overhead Crane | Relay CR1 was dirty. | The main hook would not go up. | Relay CR1 was cleaned. |
| QO 4771 | | HPCI Flow Controller | A 500 amp potentiometer was bad. | The manual/ratio signal could not be adjusted. HPCI was available & operable. | The potentiometer was replaced & the system was tested. |

UNIT TWO MAINTENANCE SUMMARY

| W.R. NUMBER | LER NUMBER | COMPONENT | CAUSE OF MALFUNCTION | RESULTS & EFFECTS ON SAFE OPERATION | ACTION TAKEN TO PREVENT REPETITION |
|---|---|---|---|---|---|
| QO 0834 | | Refuel Bridge (2-833) | The cable was worn. | The main power cable needed to be replaced. | The cable was replaced & the interlocks were checked. |
| QO 1835 | | 250V Batteries | The lugs were corroded. | The batteries still maintained their rating capacity. | The cells were replaced & the batteries were tested. |
| QO 2074 | 79-27/03L | MSIV (2-203-2A) | The valve was worn. | The valve failed LLR testing. | The valve was rebuilt & LLR tested. |
| QO 4331 | | Channel A Scram Relay | There was a bad connection on a relay coil. | There was a 1/4 scram on the channel A relays. | The connection was repaired & the relays were tested. |
| QO 4450 | | IRM 17 | The detector connectors were faulty. | The IRM spiked during withdrawal, giving a 1/2 scram. Other IRMs were operating properly. | The detector connectors were replaced. |
| QO 2078 | 79-27/03L | Main Steam Line Drain Valve (MO-2-220-2) | The valve was worn. | The valve failed LLR testing. | The valve was rebuilt & LLR tested. |
| QO 4015 | | RHR Min. Flow Valve (MO-2-1001-18A) | The valve was worn. | The valve was leaking through. RHR was available. | The valve was rebuilt & stroked three times. |

UNIT TWO MAINTENANCE SUMMARY

| W.R. NUMBER | LER NUMBER | COMPONENT | CAUSE OF MALFUNCTION | RESULTS & EFFECTS ON SAFE OPERATION | ACTION TAKEN TO PREVENT REPETITION |
|---|---|---|---|---|---|
| QO 4644 | | Containment Vent to SBGTS (AO-2-1601-63) | The valve was dirty & the O rings were worn. | Air leaked through the cylinder when the valve was in the full closed position. Valve closure not affected. | The valve was cleaned, the O rings were replaced & the valve was stroked three times. |
| QO 2019 | | HPCI (2-2303) | Amplifier 1A or 2A was bad. | HPCI started with full flow at 0 control pressure. | The amplifiers were replaced with a new type and HPCI was tested. |
| QO 3058 | | SRM Ch. 23 | The cable was damaged. | The detector cable was damaged. | A new section of cable was spliced in & the SRM was tested. |
| QO 3044 | | SRM Ch. 23 | Drive tube was bent. | Drive tube was bent. | The drive tube was replaced and the SRM was tested. |
| QO 3943 | | RHR Suc. Water Hex Rev Vlv (MO-2-1001-185A) | A piece of insulation was between the contacts. | The valve would not open. | The insulation was removed & the valve was tested. |
| QO 4427 | | HPCI Test Return Valve (MO-2-2301-15) | The brush insulator was dirty. | Operating the valve caused a 250 VDC ground alarm. HPCI availability not affected. | The brush insulator was cleaned & the valve was stroked three times. |

UNIT TWO MAINTENANCE SUMMARY

| W.R. NUMBER | LER NUMBER | COMPONENT | CAUSE OF MALFUNCTION | RESULTS & EFFECTS ON SAFE OPERATION | ACTION TAKEN TO PREVENT REPETITION |
|---|---|---|---|---|---|
| QO 3663 | | MSIV (2-203-1A) | The O rings were bad. | Air was leaking between the pilot valve manifold & the valve cylinder. | The O rings were replaced & the valve was stroked three times |
| QO 4387 | | MSIV (2-203-2D) | The pilot solenoid was worn. | The valve would not open. | The pilot solenoid was rebuilt. The valve was stroked three times and timed. |
| QO 4447 | | Refuel Bridge | The hoist jam was out of adjustment. | The hoist jam needed adjusting. | The hoist jam was adjusted & tested. |
| QO 3818 | | MSIV (AO-2-203-2A) | The solenoid valve was bad. | The solenoid valve was leaking air. | The solenoid valve was replaced & tested. |
| QO 4777 | | HPCI Turbine Oil Line | The gaskets were worn. | Oil was leaking. HPCI was operable. | The gaskets were replaced & the line was checked. |
| QO 4762 | | IRM Ch. 18 | The detector was bad. | The channel was spiking high. | The detector was replaced and tested. |
| QO 4775 | 80-11/03L | Electromatic Relief Valve (2-203-3C) | The valve was bad. | The relief valve would not open. Other relief valves were operable, as was HPCI. | The valve was replaced and tested. |
| QO 4789 | | IRM Ch. 12 | The IRM was out of calibration. | The IRM did not show enough overlap to the APRMs. | The IRM was calibrated and tested. |

UNIT TWO MAINTENANCE SUMMARY

| W.R. NUMBER | LER NUMBER | COMPONENT | CAUSE OF MALFUNCTION | RESULTS & EFFECTS ON SAFE OPERATION | ACTION TAKEN TO PREVENT REPETITION |
|---|---|---|---|---|---|
| QO 4755 | | Vacuum Breaker (2-1601-33A) | The disc was out of adjustment. | Vacuum breaker would not seat. | The disc was adjusted & the vacuum breaker was tested. |
| QO 4756 | | Vacuum Breaker (2-1601-32D) | The disc was out of adjustment. | The vacuum breaker would not seat. | The disc was adjusted. The seat was replaced, & the vacuum breaker was tested. |
| QO 4758 | | Vacuum Breaker (2-1601-33E) | The disc was out of adjustment. | The vacuum breaker would not seat. | The disc was adjusted and the vacuum breaker was tested. |
| QO 4186 | 80-06/01L | Core Spray B-Loop Line (2-1404-10") | The line had crack indications. | The line was leaking, as observed during vessel hydro. | The line was replaced. |
| QO 2919 | | IRM 16 | N/A | The detector had to be replaced. | The detector was replaced & tested. |

## IV. LICENSEE EVENT REPORTS

The following is a tabular summary of all license 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 ONE

| Licensee Event Report Number | Date of Occurrence | Title of Occurrence |
|---|---|---|
| 80-09/03L | 4-10-80 | RHR Valve 1-1001-36B Breaker tripped. |
| 80-10-03L | 4-23-80 | Low EHC Fluid Press. Switch Drift. |
| 80-11/03L | 4-29-80 | MCC 19-1 tripped. |
| 80-12/03L | 4-29-80 | 1A Reactor Recirc. MG Set tripped. |

### UNIT TWO

| | | |
|---|---|---|
| 80-10/03L | 4-24-80 | Failure to obtain torus $N^2$ inerting and torus drywell d/p. |
| 80-11/03L | 4-20-80 | Failure of 3C Electro-matic Relief Valve during testing. |
| 80-12/03L | 4-28-80 | Reactor Water Conductivity excessive. |
| 80-13/03L | 4-28-80 | MO-2-1001-36A would not open. |

## V. DATA TABULATIONS

The following data tabulations are presented in this report.

A. Operating Data Report

B. Average Daily Unit Power Level

D. Unit Shutdown and Power Reductions