

EXELON GENERATION COMPANY, LLC

AND

MIDAMERICAN ENERGY COMPANY

DOCKET NO. 50-254

QUAD CITIES NUCLEAR POWER STATION, UNIT 1

RENEWED FACILITY OPERATING LICENSE NO. DPR-29

The U.S. Nuclear Regulatory Commission (Commission) having previously made the findings set forth in License No. DPR-29 issued on December 14, 1972, has now found that:

- a. The application to renew License No. DPR-29 filed by the Exelon Generation Company, LLC*, acting for itself and MidAmerican Energy Company, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I, and all required notifications to other agencies or bodies have been duly made;
- b. Actions have been identified and have been or will be taken with respect to (1) managing the effects of aging during the period of extended operation on the functionality of structures and components that have been identified to require review under 10 CFR 54.21(a)(1), and (2) time-limited aging analyses that have been identified to require review under 10 CFR 54.21(c), such that there is reasonable assurance that the activities authorized by this renewed operating license will continue to be conducted in accordance with the current licensing basis, as defined in 10 CFR 54.3, for Quad Cities Nuclear Power Station, Unit 1 (facility or plant), and that any changes made to the plant's current licensing basis in order to comply with 10 CFR 54.29(a) are in accord with the Act and the Commission's regulations;
- c. Construction of the Quad Cities Nuclear Power Station Unit 1 (the facility) has been substantially completed in conformity with Provisional Construction Permit No. CPPR-23 and the application, as amended, the provisions of the Act, and the rules and regulations of the Commission set forth in 10 CFR Chapter I;
- d. The facility will operate in conformity with the application, as amended, the provisions of the Act, and the rules and regulations of the Commission;

*The Nuclear Regulatory Commission approved the transfer of the license from Commonwealth Edison Company to Exelon Generation Company, LLC on August 3, 2000.

- e. There is reasonable assurance: (i) that the activities authorized by this renewed operating license can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the rules and regulations of the Commission;
- f. Exelon Generation Company, LLC (EGC), and the MidAmerican Energy Company are technically and financially qualified to engage in the activities authorized by this renewed operating license in accordance with the rules and regulations of the Commission;
- g. EGC (the licensee) and the MidAmerican Energy Company have satisfied the applicable provisions of 10 CFR Part 140, "Financial Protection Requirements and Indemnity Agreements";
- h. The issuance of this renewed operating license will not be inimical to the common defense and security or to the health and safety of the public;
- i. In accordance with the requirements of Appendix D of 10 CFR Part 50, Facility Operating License No. DPR-29 should be amended to authorized full-power operation subject to the conditions for protection of the environment referred to in paragraph 8 of the Summary and Conclusions section of the Final Environmental Statement dated September 1972 and set forth in the Technical Specifications incorporated herein; and
- j. After weighing the environmental, economic, technical, and other benefits of the facility against environmental and other costs and considering available alternatives, the issuance of this Renewed Facility Operating License No. DPR-29 is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

On the basis of the foregoing findings regarding this facility, Facility Operating License No. DPR-29, issued December 14, 1972, is superseded by Renewed Facility Operating License No. DPR-29, which is hereby issued to EGC and MidAmerican Energy Company, to read as follows:

1. This renewed operating license applies to the Quad Cities Nuclear Power Station, Unit 1, a single cycle, boiling, light-water reactor and electric generating equipment (the facility). The facility is part of the Quad Cities Nuclear Power Station located in Rock Island County, Illinois, and is described in the application for construction permit and facility license dated May 31, 1966, and subsequent amendments thereto, including the application amendment dated August 30, 1968, as amended, for the full-power license and the Environmental Report dated November 12, 1970, as supplemented November 1, 1971, and thereafter.
2. Subject to the conditions and requirements incorporated herein, the Commission hereby licenses EGC and MidAmerican Energy, pursuant to Section 104b of the Act and

10 CFR Part 50, "Licensing of Production and Utilization Facilities," to own the facility, as their interests appear in the application, and hereby licenses EGC, acting for itself and as agent for MidAmerican Energy:

- A. Pursuant to Section 104b of the Act and 10 CFR Part 50, "Licensing of Production and Utilization Facilities", to possess, use, and operate the facility as a utilization facility at the location designated in the application, in accordance with the procedures and limitations described in the application and in this license;
 - B. Pursuant to the Act and 10 CFR Part 70, to receive, possess and use at any time special nuclear materials, not including plutonium, as reactor fuel, in accordance with the limitations for storage and amounts required for operation as described in the Final Safety Analysis Report, as supplemented and amended;
 - C. Pursuant to the Act and 10 CFR Part 70, to receive, possess and use at any time up to 8 kilograms of plutonium for use in connection with operation of the facility;
 - D. Pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess and use at any time any byproduct, source and special nuclear materials as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts required;
 - E. Pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess and use in amounts as required any byproduct, source or special nuclear materials without restriction to chemical or physical form, for sample analysis or instrument and equipment calibration or associated with radioactive apparatus or components; and
 - F. Pursuant to the Act and 10 CFR Parts 30 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of Quad Cities Nuclear Power Station, Unit Nos. 1 and 2.
3. This renewed operating license shall be deemed to contain and is subject to the conditions specified in the following Commission regulations set forth in 10 CFR Chapter I: Part 20, Section 30.34 of Part 30, Section 40.41 of Part 40, Sections 50.54 and 50.59 of Part 50, and Section 70.32 of Part 70; is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

A. Maximum Power Level

EGC is authorized to operate Quad Cities Unit No. 1 at power levels not in excess of 2957 megawatts (thermal).

B. Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 222, are hereby incorporated into this renewed operating license. The licensee shall operate the facility in accordance with the Technical Specifications.

C. The licensee shall maintain the commitments made in response to the March 14, 1983, NUREG-0737 Order, subject to the following provision:

The licensee may make changes to commitments made in response to the March 14, 1983, NUREG-0737 Order without prior approval of the Commission as long as the change would be permitted without NRC approval, pursuant to the requirements of 10 CFR 50.59. Consistent with this regulation, if the change results in an Unreviewed Safety Question, a license amendment shall be submitted to the NRC staff for review and approval prior to implementation of the change.

D. Equalizer Valve Restriction

Three of the four valves in the equalizer piping between the recirculation loops shall be closed at all times during reactor operation with one bypass valve open to allow for thermal expansion of water.

E. The licensee shall fully implement and maintain in effect all provisions of the Commission approved physical security, guard training and qualification, and safeguards contingency plans including amendments made pursuant to provisions of the Miscellaneous Amendments and Search Requirements revisions of 10 CFR 73.55 (51 FR 27817 and 27822), and to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). These plans, which contain Safeguards Information protected under 10 CFR 73.21, are entitled: "Quad Cities Nuclear Power Station Security Plan," with revisions submitted through September 17, 1992; "Quad Cities Nuclear Power Station Security Personnel Training and Qualification Plan," with revisions submitted through July 15, 1992; and "Quad Cities Nuclear Power Station Safeguards Contingency Plan," with revisions submitted through July 15, 1992. Changes made in accordance with 10 CFR 73.55, shall be implemented in accordance with the schedule set forth therein.

F. The licensee shall implement and maintain in effect all provisions of the approved fire protection program as described in the Updated Final Safety Analysis Report for the facility and as approved in the Safety Evaluation Reports dated July 27, 1979 with supplements dated November 5, 1980, and

February 12, 1981; December 30, 1982; December 1, 1987 with supplement dated April 20, 1988; December 11, 1987 with supplement dated July 21, 1988; and February 25, 1991, subject to the following provision:

The licensee may make changes to the approved fire protection program without prior approval of the Commission only if those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire.

- G. Deleted
- H. Deleted by incorporation into 3.E above, per Amendment No. 64 dated March 19, 1981.
- I. (Open)
- J. Deleted
- K. Deleted by Amendment No. 103 dated December 15, 1987.
- L. Deleted
- M. Deleted
- N. Deleted
- O. EGC shall provide the Director of the Office of Nuclear Reactor Regulation a copy of any application, at the time it is filed, to transfer (excluding grants of security interests or liens) from EGC to its direct or indirect parent, or to any other affiliated company, facilities for the production, transmission, or distribution of electric energy having a depreciated book value exceeding ten percent (10%) of EGC's consolidated net utility plant, as recorded on EGC's books of account.
- P. EGC shall have decommissioning trust funds for Quad Cities, Unit 1, in the following minimum amount, when Quad Cities, Unit 1, is transferred to EGC:

Quad Cities, Unit 1	\$192,149,504
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- Q. The decommissioning trust agreement for Quad Cities, Unit 1, at the time of the transfer of the unit to EGC is effected and thereafter, is subject to the following:
 - (1) The decommissioning trust agreement must be in a form acceptable to the U.S. Nuclear Regulatory Commission (NRC).
 - (2) With respect to the decommissioning trust fund, investments in the securities or other obligations of Exelon Corporation or affiliates thereof, or their successors or assigns are prohibited. Except for investments tied

to market indexes or other non-nuclear sector mutual funds, investments in any entity owning one or more nuclear power plants are prohibited.

- (3) The decommissioning trust agreement for Quad Cities, Unit 1, must provide that no disbursements or payments from the trust shall be made by the trustee unless the trustee has first given the Director of the Office of Nuclear Reactor Regulation 30 days prior written notice of payment. The decommissioning trust agreement shall further contain a provision that no disbursements or payments from the trust shall be made if the trustee receives prior written notice of objection from the NRC.
 - (4) The decommissioning trust agreement must provide that the agreement can not be amended in any material respect without 30 days prior written notification to the Director of the Office of Nuclear Reactor Regulation.
 - (5) The appropriate section of the decommissioning trust agreement shall state that the trustee, investment advisor, or anyone else directing the investments made in the trust shall adhere to a "prudent investor" standard, as specified in 18 CFR 35.32(a)(3) of the Federal Energy Regulatory Commission's regulations.
- R. EGC shall take all necessary steps to ensure that the decommissioning trust is maintained in accordance with the application for approval of the transfer of the Quad Cities, Unit 1, license and the requirements of the Order approving the transfer, and consistent with the safety evaluation supporting the Order.
- S. EGC shall relocate certain Technical Specification requirements to EGC-controlled documents upon implementation of Amendment No. 199. The items and appropriate documents are as described in Table LA, "Removal of Details Matrix," and Table R, "Relocated Specifications," that are attached to the NRC's Safety Evaluation enclosed with Amendment No. 199.
- T. The schedule for performing Surveillance Requirements (SRs) that are new or revised in Amendment No. 199 shall be as follows:

For SRs that are new in this amendment, the first performance is due at the end of the first surveillance interval that begins on the date of implementation of Amendment No. 199.

For SRs that existed prior to this amendment whose intervals of performance are being reduced, the first reduced surveillance interval begins upon completion of the first surveillance performed after implementation of Amendment No. 199.

For SRs that existed prior to this amendment that have modified acceptance criteria, the first performance is due at the end of the

first surveillance interval that began on the date the surveillance was last performed prior to the implementation of Amendment No. 199.

For SRs that existed prior to this amendment whose intervals of performance are being extended, the first extended surveillance interval begins upon completion of the last surveillance performed prior to implementation of Amendment No. 199.

U. Fuel Burnup

The maximum rod average burnup for any rod shall be limited to 60 GWD/MTU until the completion of an NRC environmental assessment supporting an increased limit.

- V. The license is amended to authorize changing the UFSAR to allow credit for containment overpressure as detailed below, to assure adequate Net Positive Suction Head is available for low pressure Emergency Core Cooling System pumps following a design-basis accident.

From (sec)	To (sec)	Credit (psig)
Accident start	290	8.0
290	5,000	4.8
5,000	44,500	6.7
44,500	52,500	6.0
52,500	60,500	5.5
60,500	75,000	4.7
75,000	95,000	3.8
95,000	115,000	3.0
115,000	155,000	2.3
155,000	Accident end	1.8

W. Updated Final Safety Analysis Report

The Exelon Generation Company, LLC Updated Final Safety Analysis Report supplement, submitted pursuant to 10 CFR 54.21(d), describes certain future activities to be completed prior to the period of extended operation. The Exelon Generation Company, LLC shall complete these activities no later than December 14, 2012, and shall notify the NRC in writing when implementation of these activities is complete and can be verified by NRC inspection.

The Updated Final Safety Analysis Report supplement, as revised, shall be included in the next scheduled update to the Updated Final Safety Analysis Report required by 10 CFR 50.71(e)(4) following issuance of this renewed license. Until that update is complete, Exelon Generation Company, LLC may make changes to the programs and activities described in the supplement without prior Commission approval, provided that Exelon Generation Company,

LLC evaluates such change pursuant to the criteria set forth in 10 CFR 50.59 and otherwise complies with the requirements in that section.

- X. All capsules in the reactor vessel that are removed and tested must meet the test procedures and reporting requirements of ASTM E 185-82 to the extent practicable for the configuration of the specimens in the capsule. Any changes to the capsule withdrawal schedule, including spare capsules, must be approved by the NRC prior to implementation. All capsules placed in storage must be maintained for future insertion.
- 4. This renewed operating license is effective as of the date of issuance and shall expire at midnight on December 14, 2032.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

J. E. Dyer, Director
Office of Nuclear Reactor Regulation

Attachments:

- 1. Appendix A – Technical Specifications
- 2. Appendix B – Environmental Protection Plan

Date of Issuance: October 28, 2004