



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

COMMONWEALTH EDISON COMPANY

DOCKET NO. STN 50-454

BYRON STATION, UNIT NO. 1

FACILITY OPERATING LICENSE

License No. NPF-37

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for license filed by Commonwealth Edison Company (licensee), complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's regulations set forth in 10 CFR Chapter I, and all required notifications to other agencies or bodies have been duly made;
 - B. Construction of the Byron Station, Unit No. 1 (the facility) has been substantially completed in conformity with Construction Permit No. CPPR-130 and the application, as amended, the provisions of the Act, and the regulations of the Commission;
 - C. The facility will operate in conformity with the application, as amended, the provisions of the Act, and the regulations of the Commission (except as exempted from compliance in Section 2.D below);
 - D. There is reasonable assurance: (i) that the activities authorized by this 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 Commission's regulations set forth in 10 CFR Chapter I (except as exempted from compliance in Section 2.D below);
 - E. Commonwealth Edison Company is technically qualified to engage in the activities authorized by this license in accordance with the Commission's regulations set forth in 10 CFR Chapter I;
 - F. Commonwealth Edison Company has satisfied the applicable provisions of 10 CFR Part 140 "Financial Protection Requirements and Indemnity Agreements," of the Commission's regulations;
 - G. The issuance of this license will not be inimical to the common defense and security or to the health and safety of the public;

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- H. 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 Facility Operating License No. NPF-37, subject to the conditions for protection of the environment set forth in the Environmental Protection Plan attached as Appendix B, is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied; and
 - I. The receipt, possession, and use of source, byproduct and special nuclear material as authorized by this license will be in accordance with the Commission's regulations in 10 CFR Parts 30, 40 and 70.
2. Pursuant to approval by the Nuclear Regulatory Commission at a meeting on February 12, 1985, the License for Fuel Loading and Low Power Testing, License No. NPF-23, issued on October 31, 1984, is superseded by Facility Operating License No. NPF-37 hereby issued to Commonwealth Edison Company (the licensee) to read as follows:
- A. The license applies to the Byron Station, Unit No. 1, a pressurized water nuclear reactor and associated equipment (the facility), owned by Commonwealth Edison Company. The facility is located in north central Illinois within Rockvale Township, Ogle County, Illinois and is described in the licensee's "Final Safety Analysis Report", as supplemented and amended, and in the licensee's Environmental Report, as supplemented and amended.
 - B. Subject to the conditions and requirements incorporated herein, the Commission hereby licenses Commonwealth Edison Company:
 - (1) Pursuant to Section 103 of the Act and 10 CFR Part 50 to possess, use and operate the facility at the designated location in accordance with the procedures and limitations set forth in this license;
 - (2) Pursuant to the Act and 10 CFR Part 70, to receive, possess and use at any time special nuclear material as reactor fuel, in accordance with the limitations for storage and amounts required for reactor operation, as described in the Final Safety Analysis Report, as supplemented and amended;
 - (3) 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 material as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;

- (4) 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 material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and
 - (5) Pursuant to the Act and 10 CFR Parts 30, 40 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.
- C. This license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth in 10 CFR Chapter I and 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:

(1) Maximum Power Level

The licensee is authorized to operate the facility at reactor core power levels not in excess of 3411 megawatts thermal (100% power) in accordance with the conditions specified herein and in Attachment 1 to this license. The preoperational tests, startup tests and other items identified in Attachment 1 to this license shall be completed as specified. Attachment 1 is hereby incorporated into this license;

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, both of which are attached hereto, are hereby incorporated into this license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan;

(3) Post-Fuel-Loading Initial Test Program (Section 14, SER)

Any changes to the Initial Test Program described in Section 14 of the FSAR made in accordance with the provisions of 10 CFR 50.59 shall be reported in accordance with 50.59(b) within one month of such change.

(4) Seismic and Dynamic Qualification (Section 3.10, SSER #5)*

Prior to startup following the first refueling outage, the licensee shall completely qualify the Westinghouse 7300 Process Protection System (ESE-13), for both Nuclear Steam Supply System and Balance of Plant applications, including any hardware changes, if found necessary.

(5) Equipment Qualification (Section 3.11, SSER #5, SSER #6)

All electrical equipment within the scope of 10 CFR 50.49 must be environmentally qualified by November 30, 1985.

(6) Fire Protection Program (Section 9.5.1, SER, SSER #3, SSER #5, SSER #6)

- (a) The licensee shall maintain in effect all provisions of the approved fire protection program as described in the Fire Protection Report for the facility through Amendment 4 and the licensee's letters dated August 20, 1984, October 11, 1984 and October 15, 1984, and as approved in the SER through Supplement 6, subject to provisions b & c below.
- (b) The licensee may make no change to the approved fire protection program which would decrease the level of fire protection in the plant without prior approval of the Commission. To make such a change the licensee must submit an application for license amendment pursuant to 10 CFR 50.90.
- (c) The licensee may make changes to features of the approved fire protection program which do not decrease the level of fire protection without prior Commission approval provided:
 - (i) Such changes do not otherwise involve a change in a license condition or Technical Specification or result in an unreviewed safety question (see 10 CFR 50.59), and
 - (ii) such changes do not result in failure to complete the fire protection program approved by the Commission prior to license issuance.

*Requires exemption; see Paragraph 2.D

The licensee shall maintain, in an auditable form, a current record of all such changes, including an analysis of the effects of the changes on the fire protection program, and shall make such records available to NRC inspectors upon request. All changes to the approved program made without prior Commission approval shall be reported annually to the Director of the Office of Nuclear Reactor Regulation, together with supporting analyses.

(d) Prior to July 1, 1985, the licensee shall complete installation and testing of the continuous thermistors in the Auxiliary Building ventilation system charcoal filter plenums. Pending completion of this work, the licensee shall conduct an hourly fire watch patrol to inspect the charcoal filters in the Auxiliary Building.

(7) Control Room Human Factors (Section 18.2, SSER #4)

Unless the staff determines that the test results do not support the change, the licensee shall, prior to startup following the first refueling outage, move the range and volume controls for the SOURCE RANGE nuclear instrument on Unit 1 from the nuclear instrumentation cabinet 1PM07J to the main control board 1PM05J.

(8) TMI Item II.F.1, Iodine/Particulate Sampling (Section 11.5, SSER #5)

Prior to startup following the first refueling outage, the licensee shall demonstrate that the operating iodine/particulate sampling system will perform its intended function.

(9) Emergency Response Capability (NUREG-0737, Supplement #1)

The licensee shall complete the emergency response capabilities as required by Attachment 2 to this license, which is incorporated into this license.

(10) Reliability of Diesel-Generators (Section 9.5.4.1, SER, SSER #5)*

Prior to startup following the first refueling outage, the controls and monitoring instrumentation on the local control panels shall be dynamically qualified for their location or shall be

*Requires exemption; see Paragraph 2.D

installed on a free standing floor mounted panel in such a manner (including the use of vibration isolation mounts as necessary) that there is reasonable assurance that any induced vibrations will not result in cyclic fatigue failure for the expected life of the instrument.

(11) Generic Letter 83-28 (Required Actions Based on Generic Implications of Salem ATWS Events)

The licensee shall submit responses to and implement the requirements of Generic Letter 83-28 on a schedule which is consistent with that given in its letters dated November 5, 1983, February 29, 1984, June 1, 1984 and October 10, 1984.

(12) Formal Federal Emergency Management Agency Finding

In the event that the NRC finds that the lack of progress in completion of the procedures in the Federal Emergency Management Agency's final rule, 44 CFR Part 350, is an indication that a major substantive problem exists in achieving or maintaining an adequate state of emergency preparedness, the provisions of 10 CFR Section 50.54 (s)(2) will apply.

(13) Control Room Ventilation System (Section 6.5.1, SSER #5, SSER #6)*

Prior to July 1, 1985, the licensee shall incorporate modifications, as necessary, to ensure that the control room ventilation system may be used during an accident to protect operators within the criteria specified in 10 CFR 50, Appendix A, General Design Criteria 19.

(14) Turbine Missiles (Section 3.5.1.3, SSER #5)

The licensee shall volumetrically inspect all three low pressure turbine rotors by every third refueling outage, until a turbine system maintenance program based on the manufacturer's calculations of missile generation probabilities is approved by the staff.

*Requires exemption; see Paragraph 2.D

(15) Operating Staff Experience Requirements (Section 13.1.2.1, SSER #5)

The licensee shall have a licensed senior operator on each shift who has had at least six months of hot operating experience on a similar type plant, including at least six weeks at power levels greater than 20% of full power, and who has had start-up and shut-down experience, except as follows. For those shifts where such an individual is not available on the plant staff, an advisor shall be provided who has had at least four years of power plant experience, including two years of nuclear plant experience, and who has had at least one year of experience on shift as a licensed senior operator at a similar type facility. Use of advisors who were licensed only at the RO level will be evaluated on a case-by-case basis. Advisors shall be trained on plant procedures, technical specifications and plant systems, and shall be examined on these topics at a level sufficient to assure familiarity with the plant. For each shift, the remainder of the shift crew shall be trained as to the role of the advisors. These advisors shall be retained until the experience levels identified in the first sentence above have been achieved. The NRC shall be notified at least 30 days prior to the date that the licensee proposes to release the advisors from further service.

- D. The facility requires exemptions from certain requirements of Appendices A, E and J to 10 CFR Part 50. These include (a) an exemption from the requirement of Paragraph III.D.2(b)(ii) of Appendix J, the testing of containment air locks at times when containment integrity is not required (Section 6.2.6 of the SER), (b) an exemption from GDC-2 of Appendix A, the requirement that structures, systems and components important to safety be designed to withstand the effects of natural phenomena such as earthquakes (Section 3.10 of SSER #5), (c) an exemption from GDC-13 and GDC-17 of Appendix A, the requirement that instrumentation be provided to monitor variables and systems over their anticipated ranges, and the requirement that provisions be included to minimize the probability of losing electric power (Section 9.5.4.1 of SSER #5), (d) an exemption from GDC-19 of Appendix A, the requirement that the control room have adequate radiation protection to permit access and occupancy under accident conditions (Section 6.5.1 of SSER #6), and (e) an exemption from the requirement of Section IV.F of Appendix E that a full participation emergency planning exercise be conducted within one year before issuance of the first operating license for full power and prior to operation above 5% of rated power (Section 13.3 of SSER #6). These exemptions are authorized by law and will not endanger life or property or the

common defense and security and are otherwise in the public interest. Therefore, these exemptions are hereby granted pursuant to 10 CFR 50.12. With the granting of these exemptions the facility will operate, to the extent authorized herein, in conformity with the application, as amended, the provisions of the Act, and the rules and regulations of the Commission.

- E. The licensee shall maintain in effect and fully implement all provisions of the Commission approved Physical Security Plan, Guard Training and Qualification Plan, and Contingency Plan, including amendments made pursuant to the authority of 10 CFR 50.54(p). The approved plans which contain Safeguards Information and are required to be protected against unauthorized disclosure in accordance with 10 CFR 73.21 are collectively entitled: Commonwealth Edison Company, Byron Nuclear Power Station Physical Security Plan, Security Personnel Training and Qualification Plan*, and Safeguards Contingency Plan*, Revision 2 (May 1980), transmitted by letter dated May 2, 1980, as revised by Revision 3 (June 1980) transmitted by letter dated June 27, 1980, as revised by Revision 4 (August 1980) transmitted by letter of August 11, 1980, as revised by Revision 5 (January 1982) transmitted by letter of January 25, 1982, as revised by Revision 6 (April 1982) transmitted by letter dated April 19, 1982, as revised by Revision 7 (September 1982) transmitted by letters dated October 8 and December 22, 1982, as revised by Revision 8 (August 1983) transmitted by letters dated September 16, 1983 and October 28, 1983, as revised by Revision 9 (October 1983) transmitted by letter dated November 17, 1983, as revised by Revision 10 (January 1984) transmitted by letter dated December 30, 1983, as revised by Revisions 11 and 12 (July and August 1984) transmitted by letter dated August 29, 1984.
- F. Except as otherwise provided in the Technical Specifications or Environmental Protection Plan, the licensee shall report any violations of the requirements contained in Section 2.C of this license in the following manner: initial notification shall be made within 24 hours to the NRC Operations Center via the Emergency Notification System with written followup within thirty days in accordance with the procedures described in 10 CFR 50.73(b), (c) and (e).
- G. The licensee shall have and maintain financial protection of such type and in such amounts as the Commission shall require in accordance with Section 170 of the Atomic Energy Act of 1954, as amended, to cover public liability claims.

*The Security Personnel Training and Qualification Plan and the Safeguards - Contingency Plan are Appendices to the Security Plan.

H. This license is effective as of the date of issuance and shall expire at Midnight October 31, 2024.

FOR THE NUCLEAR REGULATORY COMMISSION

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Harold R. Denton, Director
Office of Nuclear Reactor Regulation

Attachments/Appendices:

- 1. Attachment 1
- 2. Attachment 2
- 3. Appendix A - Technical Specifications (NUREG-1113)
- 4. Appendix B - Environmental Protection Plan

Date of Issuance: FEB 14 1985

LB#1:DL
LOlshan:kab
02/17/85

LB#1:DL
MRushbrook
02/12/85

LB#1:DL
BJYoungblood
02/12/85

OELD
SLewis
02/12/85

AP#1:DL
TThak
02/14/85

D:DL
FMiraglia
02/14/85

D:NR
HDenton
02/14/88

ATTACHMENT 1

This attachment identifies certain preoperational tests and other items which must be completed to the Commission's satisfaction and identifies the required timing for their completion.

- A. Preoperational test VA 84.11 (auxiliary building ventilation) shall be completed, including the resolution of any retest deficiencies, prior to July 1, 1985.
- B. For initial startup test program tests in the 50%, 75%, 90% and 100% power sequences, procedures which have been approved by both the Station and PED shall be provided to Region III at least 30 calendar days before the start date of the applicable sequence.
- C. Prior to July 1, 1985, the licensee shall complete integrated testing of the Control Room (VC), Auxiliary Building (VA), Miscellaneous Electric Equipment Room (VE), and ESF Switchgear Room (VX) ventilation systems in all modes of operation to demonstrate that the Control Room envelope can be maintained at a positive 1/8 inch water gauge differential pressure with respect to adjacent areas.

ATTACHMENT 2

EMERGENCY RESPONSE CAPABILITIES

The licensee shall complete the following requirements of NUREG-0737 Supplement #1 on the schedule noted below:

1. Detailed Control Room Design Review (DCRDR)

The licensee shall submit the final summary report for the DCRDR by December 1, 1986.

2. Regulatory Guide 1.97, Revision 2 Compliance

The licensee shall submit by March 1, 1987, a preliminary report describing how the requirements of Regulatory Guide 1.97, Revision 2 have been or will be met. The licensee shall submit by September 1, 1987, the final report and a schedule for implementation (assuming the NRC approves the DCRDR by March 1, 1987).

3. Upgrade Emergency Operating Procedures (EOPs)

The licensee shall submit a Procedures Generation Package within 3 months of NRC approval of Westinghouse Owners Group (WOG) Emergency Procedure Guidelines (EPG) Revision 1. The licensee shall implement the upgraded EOPs based on WOG EOPs Revision 1 within 12 months of NRC approval of WOG EPG Revision 1.

4. Emergency Response Facilities

The licensee shall implement the Emergency Response Facility meteorological A-model by January 1, 1986.

5. Safety Parameter Display System (SPDS)

The licensee shall have SPDS operational by March 30, 1985.