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

DCS-016

OCT 31 1984

Docket No. STN 50-454

Mr. Dennis L. Farrar
Director of Nuclear Licensing
Commonwealth Edison Company
Post Office Box 767
Chicago, Illinois 60690

Dear Mr. Farrar:

see Tech Specs

Subject: Issuance of Facility Operating License NPF-23 - Byron Station, Unit 1

The U.S. Nuclear Regulatory Commission (NRC) has issued the enclosed Facility Operating License NPF-23, together with Technical Specifications and Environmental Protection Plan for the Byron Station, Unit 1. License No. NPF-23 authorizes operation of Byron Station, Unit 1 at reactor core power levels not in excess of 3411 megawatts thermal (100% power). Pending Commission approval, operation is restricted to power levels not to exceed 5 percent of full power (170 megwatts thermal). In addition to the conditions set forth in this license and its attachments, the license is also subject to the condition established by the Appeal Board's Memorandum and Order of October 26, 1984, that "Unit 1 of the Byron nuclear power facility is not to achieve criticality before January 1, 1985, except upon 14 calendar days prior notice to this Board."

Enclosed is a copy of a related notice, the original of which has been forwarded to the Office of the Federal Register for publication.

Two signed copies of Amendment No. 1 to Indemnity Agreement No. B-97 which covers the activities authorized under License No. NPF-23 are also enclosed. Please sign both copies and return one to this office.

An Assessment of the Effect of License Duration on Matters Discussed in the Final Environmental Statement for the Byron Station, Unit 1 is enclosed as Enclosure 4.

Sincerely,
/S/
For Frank J. Miraglia
Darrell G. Eisenhut, Director
Division of Licensing
Office of Nuclear Reactor Regulation

Enclosures:
1. Facility Operating License NPF-23
2. Federal Register Notice
3. Amendment No. 1 to Indemnity Agreement No. B-97
4. Assessment of the Effect of License Duration on Matters Discussed in the FES

cc w/enclosures:
See next page

*SEE PREVIOUS PAGE FOR CONCURRENCES
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BYRON

OCT 3 1 1984

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OCT 3 1 1984

cc: The Honorable Tom Corcoran
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Washington, D. C. 20515

Attorney General
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Illinois Department of Nuclear Safety
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Director, Illinois Institute of Natural
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Director, Criteria and Standards (ANR-460)
Office of Radiation Programs
U. S. Environmental Protection Agency
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Director, Eastern Environmental Radiation
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U. S. Environmental Protection Agency
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Environmental Protection Agency
Region V
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Chairman, Ogle County Board
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Mr. Gary N. Wright, Manager
Nuclear Facility Safety
Illinois Department of Nuclear Safety
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Springfield, Illinois 62704

SUBJECT: ISSUANCE OF OPERATING LICENSE NPF-23 - BYRON STATION, UNIT NO. 1

DISTRIBUTION:
DOCKET FILE - STN 50-454*
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PROJECT MANAGER - Leonard Olshan*
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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-23

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;

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-23, 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. Based on the foregoing findings regarding this facility, Facility Operating License No. NPF-23 is 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 of 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. Pending Commission approval, this license is restricted to power levels not to exceed 5% of full power (170 megawatts thermal);

(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)

The licensee shall conduct the post-fuel-loading initial test program described in Chapter 14 of the FSAR, as amended, without making any major modifications unless such modifications have prior NRC approval. Major modifications are defined as:

(a) elimination of any safety-related test*

(b) modification of objectives, test methods, or acceptance criteria for any safety-related test

*Safety-related test are those tests which verify the design, construction, and operation of safety-related systems, structures, and equipment.

(c) performance of any safety-related test at a power level different from that stated in the FSAR by more than 5 percent of rated power

(d) failure to satisfactorily complete the entire initial startup test program by the time core burnup equals 120 effective full power days

(e) deviation from initial test program administrative procedures or quality assurance controls described in the FSAR

(f) delays in test program in excess of 30 days (14 days if power level exceeds 50 percent), concurrent with power operation. If continued power operation is desired during a delay, the licensee shall provide justification that adequate testing has been performed and evaluated to demonstrate that the facility can be operated at the planned power level with reasonable assurance that the health and safety of the public will not be endangered.

(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)

(a) Prior to exceeding 5% power, the licensee shall provide justification for interim operation regarding the issue of steam superheat caused by a postulated high energy line break outside containment. Final resolution of this issue shall be based on the Westinghouse Owners Group findings.

(b) 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)*

(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 letter dated August 20, 1984, October 11, 1984 and October 15, 1984, and as approved in the SER through Supplement 5, subject to provisions b & c below.

*Requires exemption; see Paragraph 2.D

(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 after such features have been installed as approved, provided 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). However, the license shall maintain, in an auditable form, a current record of all such changes including analysis of the effects of the change 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 to the Director of the Office of Nuclear Reactor Regulation, together with supporting analyses, on an annual basis.

(d) Prior to exceeding 5% power operation, the licensee shall complete all modifications related to National Fire Protection Association Code conformance as delineated in Amendment 4 to the Fire Protection Report and the licensee's letters of August 20, 1984 and October 11, 1984.

(e) Prior to exceeding 5% power operation, the licensee shall complete the modifications to the carbon dioxide fire suppression system as described in its letter of September 19, 1984.

(f) Prior to exceeding 5% power operation, the licensee shall have an operable fire hazards panel and associated instrumentation.

(g) Prior to exceeding 5% power operation, the licensee shall complete the analysis of spurious operation of the pressurizer PORV's and fully implement any necessary modifications.

(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) Control of Heavy Loads (Section 9.1.5, SSER #5)

Prior to startup following the first refueling outage, the licensee shall submit commitments necessary to implement changes and modifications required to fully satisfy the guidelines of Sections 5.1.2 through 5.1.6 of NUREG-0612 (Phase-II-nine-month response to the NRC generic letter dated December 22, 1980).

(9) 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.

(10) 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.

(11) Emergency Planning (Section 13.3, SSER #4)

Prior to exceeding 5% power operation, the licensee shall:

(a) Clarify its Evaluation Time Study, and amend it if necessary, to reflect employment-center shutdown times.

(b) Modify its Evacuation Time Study to reflect realistic time estimates under adverse weather conditions.

(c) Provide information to emergency planning officials, particularly the Illinois Department of Nuclear Safety which realistically reflects the average generic sheltering values of the structures in the Byron emergency planning zone.

(12) 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 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.

*Requires exemption; see Paragraph 2.D

(13) Feedwater Flow Measurement Accuracy Monitoring (Section 4.4.1, SSER #5)

Prior to completing the startup program, the licensee shall verify the capability of the trending program to detect 0.1% feedwater venturi fouling, or propose a technical specification with the appropriate value of venturi fouling uncertainty and design DNBR limits modified accordingly.

(14) 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.

(15) 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.

(16) Protection Against Postulated Breaks or Cracks In High-Energy and Moderate-Energy Lines (Section 3.6.2, SSER #5)*

Prior to exceeding 5% power operation, the licensee shall advise the staff of the specific uses made of NUREG-CR-2913 in "Byron 1-Confirmation of Design Adequacy for Jet Impingement Effects" (August 1984), by identifying each system and each of the locations within that system in which it was applied. The licensee shall demonstrate that the use of NUREG-CR-2913 meets the commitment in FSAR Section 3.6.2 through Amendment 45 on protection against the effects of postulated pipe breaks, or provide an alternative demonstration to the NRC staff of the acceptability of its methodology.

(17) Volume Reduction System (Section 11.1 and 11.4.2, SER)

The licensee shall not process waste with the volume reduction system until the staff has completed its review of the system and issued its safety evaluation.

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

Prior to exceeding 5% power operation, the licensee shall propose suitable technical specifications, emergency procedures and system

*Requires exemption; see Paragraph 2.D

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. Any required system modifications are to be operable prior to exceeding 25% power.

(19) 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.

(20) 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 shutdown experience. For those shifts where such an individual is not available on the plant staff, an advisor shall be provided who has had a 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. The training of the advisors and remainder of the shift crew shall be completed prior to achieving criticality. Prior to achieving criticality, the licensee shall certify to the NRC the names of the advisors who have been examined and have been determined to be competent to provide advice to the operating shifts. 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 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) two exemptions 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

and Section 3.9.3.4 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 6.5.2 of SSER #5), (e) an exemption from GDC-3 of Appendix A, the requirement that structures, systems and components important to safety be designed and located to minimize the probability and effect of fires (Section 9.5.1 of SSER #5), and (f) an exemption from GDC-4 of Appendix A, the requirement that structures, systems and components important to safety be appropriately protected against dynamic effects, including the effects of discharging fluids (Section 3.6.2 of SSER #5). 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.

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

F. With the exception of 2.C(2), the licensee shall report any violations of the requirements contained in Section 2.C of this license within 24 hours by telephone and confirm by telegram, mailgram, or fascimile transmission to the NRC Regional Administrator, Region III, or that administrator's designee, no later than the first working day following the violation, with a written followup report within 14 days.

G. The licensee shall notify the Commission, as soon as possible but not later than one hour, after any accident at this facility which could result in an unplanned release of quantities of fission products in excess of allowable limits for normal operation established by the Commission.

H. 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.

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

FOR THE NUCLEAR REGULATORY COMMISSION

Harold R. Denton, Director
Office of Nuclear Reactor Regulation

Attachments/Appendices:
1. Attachment 1
2. Attachment 2
3. Attachment 3 (Deleted)
4. Appendix A - Technical Specifications (NUREG-1097)
5. Appendix B - Environmental Protection Plan

Date of Issuance: OCT 31 1984

*SEE PREVIOUS PAGE FOR CONCURRENCES
(RETYPED 10/30 kab)

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ATTACHMENT 1 TO BYRON STATION UNIT 1 OPERATING LICENSE NPF-23

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. The preoperational tests and testing deficiencies identified in Attachments A and B, respectively, of the September 28, 1984, letter from L. O. DelGeorge to H. R. Denton as modified by Attachment A of the October 19, 1984, letter from T. R. Tramm to H. R. Denton, shall be completed in accordance with the schedule commitments contained in those attachments except that all items shall be completed prior to exceeding 5% power.

B. Post-fuel-loading initial test program startup procedures which have been approved by both the Station and PED shall be provided to Region III as follows:

   1. For post-core-load tests to be performed prior to the 50% power sequence, at least 10 calendar days before the start date for performance of the activity or by initial criticality, whichever occurs first.

   2. For tests in the 50%, 75%, 90%, and 100% power sequences, at least 30 calendar days before the start date of each of these sequences.

C. Prior to exceeding 5% power, 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.

D. Prior to exceeding 5% power, the licensee shall complete confirmatory measures related to qualification of energy absorbing material (EAM) applications in pipe whip restraints as follows:

   1. Complete EAM testing per the technical requirements of S&L Specification 117, Amendment 4, and evaluation of the test data related to the resolution of field-cut EAM installations.

   2. Remove rubbing interference between compression leg and side plates for restraints MSR-33, MSR-48, and MSR-11.

   3. Submit a report to Region III describing the completion of Items 1 and 2 above.

   4. Submit a report to NRR describing:

      a. The sensitivity analysis to evaluate the effect of EAM crush strength on the function of restraint SI3R-640A.

b. The reconciliation of the conclusions from the Byron/Braidwood and LaSalle testing regarding reduction in EAM crush strength as a function load angularities.

c. The results of the effective crush angle calculation for Byron.

E. The following open and unresolved items must be resolved prior to entering the mode indicated:

1. Items Requiring Resolution Prior to Entering Mode 4

a. Provide justification for accepting test results to resolve interferences identified on mechanical snubber connecting brackets in lieu of field inspection or modification to eliminate the interferences. (Section 3.9.3.4, SSER #5)*

b. Address the potential problem reported pursuant to 10 CFR Part 21 relating to main steam safety valve blowdown.

2. Items Requiring Resolution Prior to Entering Mode 2

a. Complete the Technical Support Center (TSC) by making the ventilation system operable and by placing a copy of the approved technical specifications in the TSC working area.

b. Confirm RTD time constant measurement for reactor protection time response during startup testing.

c. Issue procedure and perform pipe vibration testing with all three charging pumps operating.

3. Items Requiring Resolution Prior to Entering Mode 1

Review and revise, if necessary, surveillance procedures to incorporate independent verification.

*Requires exemption; see Paragraph 2.D

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 EPGS 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.

COMMONWEALTH EDISON COMPANY

BYRON STATION, UNIT NO. 1

DOCKET NO. STN 50-454

NOTICE OF ISSUANCE OF FACILITY OPERATING LICENSE

Notice is hereby given that the U. S. Nuclear Regulatory Commission (the Commission or NRC), has issued Facility Operating License No. NPF-23 to Commonwealth Edison Company (the licensee) which authorizes operation of the Byron Station, Unit No. 1 (the facility), at reactor core power levels not in excess of 3411 megawatts thermal in accordance with the provisions of the License, the Technical Specifications and the Environmental Protection Plan with a condition currently limiting operation to five percent of full power (170 megawatts thermal). Authorization to operate beyond five percent of full power will require specific Commission approval.

Byron Station, Unit No. 1 is a pressurized water reactor located in north central Illinois, 2½ miles east of the Rock River, 3 miles south-south-west of the town of Byron, and 17 miles southwest of Rockford, Illinois. The station is within Rockvale Township, Ogle County, Illinois. The license is effective as of the date of issuance.

The application for the license complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's regulations. The Commission has made appropriate findings as required by the Act and the Commission's regulations in 10 CFR Chapter I which are set forth in the License. Prior public notice of the overall action involving the proposed issuance of an operating license was published in the Federal Register on December 15, 1978 (43 FR 58659).

The Commission has determined that the issuance of this license will not result in any environmental impacts other than those evaluated in the Final Environmental Statement and the Assessment of the Effect of License Duration on Matters Discussed in the Final Environmental Statement for the Byron Station, Units 1 and 2 (dated April 1982) since the activity authorized by the license is encompassed by the overall action evaluated in the Final Environmental Statement.

For further details with respect to this action, see (1) Facility Operating License No. NPF-23, with Technical Specifications and the Environmental Protection Plan; (2) the report of the Advisory Committee on Reactor Safeguards, dated March 9, 1982; (3) the Commission's Safety Evaluation Report, dated February 1982 (NUREG-0876), and Supplements 1 through 5; (4) the Final Safety Analysis Report and Amendments thereto; (5) the Environmental Report and supplements thereto; (6) and the Final Environmental Statement, dated April 1982.

These items are available for inspection at the Commission's Public Document Room located at 1717 H Street, N. W., Washington, D. C. 20555 and at the Rockford Public Library, Rockford, Illinois. A copy of Facility Operating License NPF-23 may be obtained upon request addressed to the U. S. Nuclear Regulatory Commission, Washington, D. C. 20555, Attention: Director, Division of Licensing. Copies of the Safety Evaluation Report and Supplements 1 through 5 (NUREG-0876) and the Final Environmental Statement (NUREG-0848) may be purchased at current rates from the National Technical Information Service, Department of Commerce, 5285 Port Royal Road, Springfield, Virginia 22161, and through the NRC GPO sales program by writing to the U. S. Nuclear Regulatory Commission, Attention: Sales Manager, Washington, D. C. 20555. GPO deposit account holders may call 301-492-9530.

Dated at Bethesda, Maryland this 31st day of October, 1984.

FOR THE NUCLEAR REGULATORY COMMISSION

/s/

B. J. Youngblood, Chief
Licensing Branch No. 1
Division of Licensing

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10/26/84	10/26/84	10/26/84	10/29/84
			with changes noted

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

Docket No. 50-454

AMENDMENT TO INDEMNITY AGREEMENT NO. B-97
AMENDMENT NO. 1

Effective , Indemnity Agreement No. B-97, between Commonwealth Edison Company and the Nuclear Regulatory Commission, dated May 6, 1983, is hereby amended as follows:

Item 2a. of the Attachment to the indemnity agreement is deleted in its entirety and the following substituted therefor:

Item 2 - Amount of financial protection

a. $1,000,000 (From 12:01 a.m., May 6, 1983, to 12 midnight October 30, 1984 inclusive)

$160,000,000* (From 12:01 a.m., October 31, 1984)

Item 3 of the Attachment to the indemnity agreement is deleted in its entirety and the following substituted therefor:

Item 3 - License number or numbers

SNM-1917 (From 12:01 a.m., May 6, 1983, to 12 midnight October 30, 1984 inclusive)

NPF-23 (From 12:01 a.m. October 31, 1984)

* and, as of August 1, 1977, the amount available as secondary financial protection.

Item 5 of the Attachment to the indemnity agreement is amended by adding the following:

Nuclear Energy Liability Policy (Facility Form) No. MF-114 issued by Mutual Atomic Energy Liability Underwriters.

FOR THE UNITED STATES NUCLEAR REGULATORY COMMISSION

Jerome Saltzman, Assistant Director
State and Licensee Relations
Office of State Programs

Accepted __________________, 1984

By ________________________
COMMONWEALTH EDISON COMPANY

ASSESSMENT OF THE EFFECT OF LICENSE DURATION ON MATTERS DISCUSSED IN THE FINAL ENVIRONMENTAL STATEMENT FOR THE BYRON STATION, UNITS 1 AND 2 (DATED APRIL 1982)

INTRODUCTION

The Final Environmental Statement (FES) for the operation of the Byron Station, Unit Nos. 1 and 2 was published in April 1982. At that time it was staff practice to issue operating licenses for a period of 40 years from the date of the construction permit. For Byron, the CP was issued in December 1975, thus, approximately 30 years of operating life would be available.

By letter dated December 28, 1983 Commonwealth Edison Company requested that the operating license for Byron Station, Units 1 and 2 and Braidwood Station, Units 1 and 2 have a duration of 40 years from the date of issuance.

DISCUSSION

The staff has reviewed the Byron FES to determine which aspects considered in the FES are affected by the duration of the operating license. In general, the FES assesses various impacts associated with operation of the facility in terms of annual impacts and balances these against the anticipated annual energy production benefits. Thus, the overall assessment and conclusions would not be dependent on specific operating life. There are, however, three areas in which a specific operating life was assumed:

1. Radiological assessments are based on a 15-year plant midlife.

2. Uranium fuel cycle impacts are based on one initial core load and annual refuelings.

3. Uranium availability is evaluated through 30 years of operation.

These were assessed to determine whether the use of a 40-year operating period rather than a 30-year operating period would significantly affect our assessment concerning these areas.

EVALUATION:

The staff's appraisal of the significance of the use of 40 years of operation rather than 30 as it affects these three areas is presented in the following discussions:

1. Radiological Assessments - The NRC staff calculates dose commitments to the human population residing around nuclear power reactors to assess the impact on people from radioactive material released from these reactors. The annual dose commitment is calculated to be the dose that would be received over a 50-year period following the intake of radioactivity for 1 year under the conditions that would exist 15 years after the plant began operation.

   The 15 year period is chosen as representing the midpoint of plant operation and factors into the dose models by allowing for buildup of long life radionuclides in the soil. It affects the estimated doses only for radionuclides ingested by humans that have half-lives greater than a few years. For a plant licensed for 40 years, increasing the buildup period from 15 to 20 years would increase the dose from long term life radionuclides via the ingestion pathways by 33% at most. It would have much less effect on dose from shorter life radionuclides. Table C.6 and C.7 of Appendix C to the FES indicate that the estimated doses via the ingestion pathways are only a fraction of the regulatory design objectives. For example, the ingestion dose to the thyroid is 0.61 mrem/yr compared to an Appendix I design objective of 15 mrem/yr. Thus, even with an increase as much as 33% in these pathways, the dose would remain within the Appendix I guidelines and would still not be significant.

2. Uranium Fuel Cycle Impacts - The impacts of the uranium fuel cycle are based on 30 years of operation of a model LWR. The fuel requirements for the model LWR were assumed to be one initial core load and 29 annual refuelings (approximately 1/3 core). The annual fuel requirement for the model LWR averaged out over a 40-year operating life (1 initial core and 39 refuelings of approximately 1/3 core) would be reduced slightly as compared to the annual fuel requirement averaged for a 30-year operating life.

   The net result would be an approximately 1.5% reduction in the annual fuel requirement for the model LWR. This small reduction in fuel requirements would not lead to significant changes in the impacts of the uranium fuel cycle. The staff does not believe that there would be any changes to Byron FES Table 5.4 (S-3) that would be necessary in order to consider 40 years of operation. If anything, the values in Table 5.4 become more conservative when a 40-year period of operation is considered.

3. Uranium Resources - In Section 10.3.3.2 of the Byron CP stage FES, the uranium resource commitment was estimated at 59 metric tons of U-235. Since then, the NRC staff has generally considered uranium availability based on the cumulative lifetime (assumed to be 30 years) uranium requirements for 236 reactor cases. This is discussed in Section 9.3.2 of the La Salle OL stage FES. As stated on Page 9-4 of the La Salle FES, the lifetime uranium commitment for these cases would be less than half of the currently estimated domestic resources. A 33% increase in operating life (to 40 years) of the 236 reactors would still be within the projected uranium resources. Cancellation of many of the 236 reactors since the La Salle FES was issued will result in an off-setting reduction in demand. Furthermore, the increase in operating life assumption to 40-years will reduce the need for replacement generating capacity, including nuclear, at the end of 30 years.

CONCLUSION

The staff has reviewed the Byron FES and determined that only three of the areas related to its NEPA analysis discussed in the statement were tied directly to a 30-year operating period. We have concluded, based on the reasons discussed in the sections above, that the impacts associated with a 40-year operating license duration are not significantly different from those associated with a 30-year full power operating license duration and are not significantly different from those assessed in the Byron FES.