

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

COMMONWEALTH EDISON COMPANY DOCKET NO. STN 50-457 BRAIDWOOD STATION, UNIT 2 FACILITY OPERATING LICENSE

License No. NPF-75

- The Nuclear Regulatory Commission (the Commission or the NRC) has found that:
  - A. The application for a license filed by Commonwealth Edison Company (the 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 Braidwood Station, Unit 2 (the facility) has been completed in conformity with Construction Permit No. CPPR-133 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: (ii) 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;

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- 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 Facility Operating License NPF-75, subject to the conditions for protection of the environment set forth in the Environmental Protection Plan attached as Appendix B to License No. NPF-72, issued July 2, 1987, is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied; and
- 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.
- Based on the foregoing findings regarding this facility, Facility Operating License No. NPF-75 is hereby issued to Commonwealth Edison Company (the licensee) to read as follows:
  - A. This license applies to Braidwood Station, Unit 2, a pressurized water reactor, and associated equipment (the facility) owned by Commonwealth Edison Company. The facility is located in northeastern Illinois, 3 miles southwest of the Kankakee River, 20 miles south-southwest of the town of Joliet, and 60 miles southwest of Chicago, Illinois. The facility is within Reed Township, Will County, Illinois and is described in the Byron/Braidwood Stations' Final Safety Analysis Report, as supplemented and amended, and in the Environmental Report, as supplemented and amended.
  - B. Subject to the conditions and requirements incorporated herein, the Commission hereby licenses:
    - Commonwealth Edison Company (CECo), pursuant to Section 103 of the Act and 10 CFR Part 50, to possess, use and operate the facility at the above designated location in Will County, Illinois, in accordance with the procedures and limitations set forth in this license;
    - (2) CECo, 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) CECo, 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) CECo, 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) CECo, 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 percent rated power) in accordance with the conditions specified herein and other items identified in Attachment 1 to this license. The items identified in Attachment 1 to this license shall be completed as specified. Attachment 1 is hereby incorporated into this license. Pending further Commission approval, this license is restricted to power levels not in excess of five percent of rated 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 were attached to License No. NPF-72, dated July 2, 1987, are hereby incorporated into this license. Attachment 2 contains revisions to Appendix A which are hereby incorporated into this license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan. (3) Emergency Planning

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.

(4) Initial Startup Test Program

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.

D. The facility requires an exemption from the requirements of Appendix J to 10 CFR Part 50, Paragraph III.D.2(b)(ii), the testing of containment air locks at times when containment integrity is not required (SER Section 6.2.6). This exemption is authorized by law, will not present an undue risk to the public health and safety, and is consistent with the common defense and security. This exemption is hereby granted. The special circumstances regarding this exemption are identified in the referenced section of the Safety Evaluation Report and the supplements thereto. This exemption, 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.

An exemption was previously granted pursuant to 10 CFR 70.24. The exemption was granted with NRC materials license No. SNM-1938, issued October 8, 1985, and relieved the licensee from the requirement of having a criticality alarm system. Therefore, the licensee is exempted from the criticality alarm system provision of 10 CFR 70.24 so far as this section applies to the storage of fuel assemblies held under this license.

E. The licensee shall implement and maintain in effect all provisions of the approved fire protection program as described in the Final Safety Analysis Report, as supplemented and amended, and as approved in the SER dated November 1983 and its supplements, 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.

F. The licensee shall fully implement and maintain in effect all provisions of the physical security, guard training and qualification, and safeguards contingency plans previously approved by the Commission

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and all amendments and revisions to such plans made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The plans, which contain Safeguards Information protected under 10 CFR 73.21, are entitled: "Braidwood Station Physical Security Plan, Security Personnel Training and Qualification Plan,\* and Safeguards Contingency Plan\*" with revisions submitted through May 27, 1986.

- G. 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).
- Η. 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.
- This license is effective as of the date of issuance and small 1. cunire at midnight on December 18 , 2027.

FOR THE NUCLEAR REGULATORY COMMISSION Thomas E. Murley, Director Office of Nuclear Reactor Regulation

Attachments:

1. Work Items to be completed 2. Revisions to Appendix A -Technical Specifications (NUREG-1276)

Date of Issuance: December 18, 1987

Bell almotead concurred for OGC on (2/18/87 rds \*The Security Personnel Training and Qualification Plan and the Safeguards Contingency Plan are Appendices to the Security Plan. As requested by CECo letter dated April 22, 1983, Revision 6 is to be considered "the initial formal submittal."

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### ATTACHMENT 1

This attachment identifies specific items which must be completed to the Commission's satisfaction in accordance with the operational modes as identified below.

- The preoperational testing exceptions identified in the December 16, 1987, letter from S. C. Humsader to Thomas E. Murley and component demonstrations identified in the December 17, 1987, letter from S. C. Hunsader to Thomas E. Murley shall be completed in accordance with the scheduled commitments contained in those letters.
- The 18 month surveillance activities for the Unit 2 2A Diesel Generator identified in the November 23, 1987 letter from S. C. Hunsader to Thomas E. Murley shall be accomplished as described in that letter.
- The fire protection program work and compensatory measures identified in the December 16, 1987 letter from S. C. Hunsader to Thomas E. Murley shall be accomplished as described in that letter.
- 4. The 18 month testing of the control room ventilation system identified in the December 11, 1987 letter from S. C. Hunsader to Thomas E. Murley shall be accomplished as described in that letter.

# ATTACHMENT 2 TO LICENSE NPF-75 REVISIONS TO NUREG-1276

Revise Appendix A, Technical Specifications (NUREG-1276), by removing the pages identified below and inserting the enclosed pages. Overleaf pages (\*) have been provided to maintain document completeness.

REMOVE	INSERT
3/4 6-2	3/4 6-1 (*) 3/4 6-2
3/4 8-2	3/4 8-1 (*) 3/4 8-2
3/4 8-7	3/4 8-7 3/4 8-8 (*)
3/4 8-9a	3/4 8-10 (*)

3/4.6 CONTAINMENT SYSTEMS

3/4.6.1 PRIMARY CONTAINMENT

CONTAINMENT INTEGRITY

LIMITING CONDITION FOR OPERATION

3.6.1.1 Primary CONTAINMENT INTEGRITY shall be maintained.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

Without primary CONTAINMENT INTEGRITY, restore CONTAINMENT INTEGRITY within 1 hour or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.1.1 Primary CONTAINMENT INTEGRITY shall be demonstrated:

- a. At least once per 31 days by verifying that all penetrations\* not capable of being closed by OPERABLE containment automatic isolation valves and required to be closed during accident conditions are closed by valves, blind flanges, or deactivated automatic valves secured in their positions, except as provided in Table 3.6-1 of Specification 3.6.3;
- b. By verifying that each containment air lock is in compliance with the requirements of Specification 3.6.1.3; and
- c. After each closing of each penetration subject to Type B testing, except the containment air locks, if opened following a Type A or B test, by leak rate testing the seal with gas at a pressure not less than P, 44.4 psig, and verifying that when the measured leakage rate for these seals is added to the leakage rates determined pursuant to Specification 4.6.1.2d. for all other Type B and C penetrations, the combined leakage rate is less than 0.60 L.

<sup>\*</sup>Except valves, blind flanges, and deactivated automatic valves which are located inside the containment and are locked, sealed or otherwise secured in the closed position. These penetrations shall be verified closed during each COLD SHUTDOWN except that such verification need not be performed more often than once per 92 days.

#### CONTAINMENT SYSTEMS

#### CONTAINMENT LEAKAGE

# LIMITING CONDITION FOR OPERATION

3.6.1.2 Containment leakage rates shall be limited to:

- a. An overall integrated leakage rate of:
  - 1) Less than or equal to  $L_a$ , 0.10% by weight of the containment air per 24 hours at  $P_a$ , 44.4 psig, or
  - 2) Less than or equal to  $L_t$ , 0.07% by weight of the containment air per 24 hours for Unit 1 (0.07% by weight of the containment air per 24 hours for Unit 2) at P<sub>t</sub>, 22.2 psig.
- b. A combined leakage rate of less than 0.60  $\rm L_a$  for all penetrations and valves subject to Type B and C tests, when pressurized to P\_a.

APPLICABILITY: MODES 1, 2, 3, and 4.

#### ACTION:

With either the measured overall integrated containment leakage rate exceeding 0.75 L<sub>a</sub> or 0.75 L<sub>t</sub>, as applicable, or the measured combined leakage rate for all penetrations and valves subject to Types B and C tests exceeding 0.60 L<sub>a</sub>, restore the overall integrated leakage rate to less than 0.75 L<sub>a</sub> or less than 0.75 L<sub>t</sub>, as applicable, and the combined leakage rate for all penetrations subject to Type B and C tests to less than 0.60 L<sub>a</sub> prior to increasing the Reactor Coolant System temperature above 200°F.

### SURVEILLANCE REQUIREMENTS

4.6.1.2 The containment leakage rates shall be demonstrated at the following test schedule and shall be determined in conformance with the criteria specified in Appendix J of 10 CFR Part 50 using the methods and provisions of ANSI N45.4-1972:

a. Three Type A tests (Overall Integrated Containment Leakage Rate) shall be conducted at 40  $\pm$  10 month intervals during shutdown at a pressure not less than P<sub>a</sub>, 44.4 psig, or P<sub>t</sub>, 22.2 psig, during each 10-year service period. The third test of each set shall be conducted during the shutdown for the 10-year plant inservice inspection;

3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.1 A.C. SOURCES

### OPERATING

LIMITING CONDITION FOR OPERATION

3.8.1.1 As a minimum, the following A.C. electrical power sources shall be OPERABLE:

- a. Each Class 1E 4160 volt bus capable of being powered from:
  - 1) Either transformer of a given units normal System Auxiliary Transformer bank, and
  - 2) Either transformer of the other units System Auxiliary Transformers bank, with

Each units System Auxiliary Transformer bank energized from an independent transmission circuit.

- b. Two separate and independent diesel generators, each with:
  - A separate day tank containing a minimum volume of 450 gallons of fuel,
  - A separate Fuel Oil Storage System containing a minimum volume of 44,000 gallons of fuel, and
  - A separate fuel transfer pump.

APPLICABILITY: MODES 1, 2, 3, and 4.

### ACTION:

- a. With either an offsite circuit or diesel generator of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the remaining A.C. sources by performing Specification 4.8.1.1.1a within 1 hour and at least once per 8 hours thereafter and Specification 4.8.1.1.2.a.4 within 24 hours; restore at least two offsite circuits and two diesel generators to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- b. With one offsite circuit and one diesel generator of the above required A C. electrical power sources inoperable, demonstrate the OPERABILITY of the remaining A.C. sources by performing Specifications 4.8.1.1.1a within 1 hour and at least once per 8 hours thereafter and Specification 4.8.1.1.2.a.4 within 8 hours; restore at least one of the inoperable sources to OPERABLE status within 12 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. Restore at least two offsite circuits and two diesel generators to OPERABLE status within 72 hours from the time of initial loss or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

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# ELECTRICAL POWER SYSTEMS

## LIMITING CONDITION FOR OPERATION

## ACTION (Continued)

- c. With one diesel generator incperable in addition to ACTION a. or b. above, verify that:
  - All required systems, subsystems, trains, components and devices that depend on the remaining OPERABLE diesel generator as a source of emergency power are also OPERABLE, and
  - 2. When in MODE 1, 2, or 3, the diesel-driven auxiliary feedwater pump is OPERABLE and the other Unit's A Diesel Generator is OPERABLE, if the inoperable diesel generator is the emergency power supply for the motor-driven auxiliary feedwater pump.

If these conditions are not satisfied within 2 hours be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

- d. With two of the above required offsite A.C. circuits inoperable, demonstrate the OPERABILITY of two diesel generators by performing Specification 4.8.1.1.2a.4) within 8 hours, unless the diesel generators are already operating; restore at least one of the inoperable offsite sources to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours. With only one offsite source restored, restore at least two offsite circuits to OPERABLE status within 72 hours from time of initial loss or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- e. With two of the above required diesel generators inoperable, demonstrate the OPERABILITY of two offsite A.C. circuits by performing Specification 4.8.1.1.1a. within 1 hour and at least once per 8 hours thereafter; restore at least one of the inoperable diesel generators to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. Restore at least two diesel generators to OPERABLE status within 72 hours from time of initial loss or be in least HCT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

## ELECTRICAL POWER SYSTEMS

# SURVEILLANCE REQUIREMENTS (Continued)

- 13) Verifying that the following diesel generator lockout features prevent dicsel generator starting only when required:
  - a) Turning gear engaged, and
  - b) Emergency stop.
- g. At least once per 10 years or after any monotocations which could affect diesel generator interdependence by starting both diesel generators simultaneously, during shutdown, and verifying that both diesel generators accelerate to at least 600 rpm in less than or equal to 10 seconds;
- h. At least once per 10 years by:
  - Draining each fuel oil storage tank, removing the accumulated sediment and cleaning the tank using a sodium hypochlorite solution, and
  - Performing a pressure test of those portions of the diesel fuel oil system designed to Section III, subsection ND of the ASME Code at a test pressure equal to 110 percent of the system design pressure.
- i. At least once per 31 days by:
  - #1) Verifying the capability of crosstieing the Unit 2, A diesel generator to Bus 141 by independently performing the following:
    - a) Synchronizing the Unit 2, A diesel generator to Bus 241.
    - b) Closing breaker 1414, and.
    - c) Closing breaker 2414.
  - ##2) Verifying the capability of crosstieing the Unit 1 A diesel generator to Bus 241 by independently performing the following:
    - a) Synchronizing the Unit 1, A diesel generator to Bus 141,
    - b) Closing breaker 1414, and
    - c) Closing breaker 2414.
- j. At least once per 18 months by:
  - #1) Crosstieing the 2A diesel generator to Bus 141.
  - ##2) Crosstieing the 1A diesel generator to Bus 241.

4.8.1.1.3 <u>Reports</u> - All diesel generator failures, valid or non-valid, shall be reported to the Commission pursuant to Specification 6.9.2. Reports of diesel generator failures shall include the information recommended in Regulatory Position C.3.b of Regulatory Guide 1.108, Revision 1, August 1977. If the number of failures in the last 100 valid tests (on a per nuclear unit basis) is greater than or equal to 7, the report shall be supplemented to include the additional information recommended in Regulatory Position C.3.b of Regulatory Guide 1.108, Revision 1, August 1977.

#Only required for Unit 1 operation in MODES 1, 2, or 3. ##Only required for Unit 2 operation in MODES 1, 2, or 3.

### Table 4.8-1

# DIESEL GENERATOR TEST SCHEDULE

NUMBER OF FAILURES IN LAST 20 VALID TESTS*	TEST FREQUENCY
<u>&lt;</u> 1	At least once per 31 days
<u>&gt;</u> 2	At least once per 7 days**

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<sup>\*</sup>Criteria for determining number of failures and number of valid tests shall be in accordance with Regulatory Position C.2.e of Regulatory Guide 1.108, Revision 1, August 1977, where the number of tests and failures is determined on a per diesel generator basis. For the purposes of this test schedule, only valid tests conducted after the completion of the preoperational test requirements of Regulatory Guide 1.108, Rev 1, Aug 1977, shall be included in the computation of the "last 20 valid tests."

<sup>\*\*</sup>This test frequency shall be maintained until seven consecutive failure free demands have been performed and the number of failures in the last 20 valid demands has been reduced to one or less.

ELECTRICAL POWER SYSTEMS

### 3/4.8.2 D.C. SOURCES

## OPERATING

## LIMITING CONDITION FOR OPERATION

3.8.2.1\* As a minimum the following D.C. electrical sources shall be OPERABLE:

- a. 125-Volt D.C. Bus 111 fed from Battery 111 for Unit 1 (Bus 211 fed from Battery 211 for Unit 2), and its associated full capacity charger, and
- b. 125-Volt D.C. Bus 112 fed from Battery 112 for Unit 1 (Bus 212 fed from Battery 212 for Unit 2), and its associated full capacity charger.

APPLICABILITY: MODES 1, 2, 3, and 4.

#### ACTION:

- a. With one of the required battery banks and/or chargers inoperable, restore the inoperable battery bank and/or battery bus to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- b. With the normal full capacity charger inoperable: 1) restore the affected battery and/or battery bus to operable status with the opposite units full capacity charger within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours, and 2) restore the normal full capacity charger to operable status within 24 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

### SURVEILLANCE REQUIREMENTS

4.8.2.1.1 Each D.C. bus shall be determined OPERABLE and energized from its battery at least once per 7 days by verifying correct breaker alignment.

4.8.2.1.2 Each 125-volt battery bank and its associated charger shall be demonstrated OPERABLE:

- a. At least once per 7 days by verifying that:
  - 1) The parameters in Table 4.8-2 meet the Category A limits, and
  - 2) The total battery terminal voltage is greater than or equal to 126 volts on float charge.

\*This specification is only applicable prior to Unit 2 operation in MODE 4.