June 13, 2000

Mr. Oliver D. Kingsley, President
Nuclear Generation Group
Commonwealth Edison Company
Executive Towers West III
1400 Opus Place, Suite 500
Downers Grove, IL 60515

SUBJECT: ISSUANCE OF AMENDMENTS (TAC NOS. MA8512 and MA8513)

Dear Mr. Kingsley:

The U.S. Nuclear Regulatory Commission (Commission) has issued the enclosed Amendment No. 107 to Facility Operating License No. NPF-72 and Amendment No. 107 to Facility Operating License No. NPF-77 for the Braidwood Station, Unit Nos. 1 and 2, respectively. The amendments are in response to Commonwealth Edison Company's application dated March 15, 2000.

The amendments revise the technical specifications to permit plant operation with an ultimate heat sink temperature of 100 °F.

A copy of the Safety Evaluation is also enclosed. The Notice of Issuance will be included in the Commission's biweekly Federal Register notice.

Sincerely,

/RA/
George F. Dick, Jr., Project Manager, Section 2
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. STN 50-456 and STN 50-457

Enclosures:
1. Amendment No. 107 to NPF-72
2. Amendment No. 107 to NPF-77
3. Safety Evaluation

cc w/encls: See next page
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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

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cc w/encls: See next page

cc:

Regional Administrator
U.S. NRC, Region III
801 Warrenville Road
Lisle, Illinois 60532-4351

Illinois Department of Nuclear Safety
Office of Nuclear Facility Safety
1035 Outer Park Drive
Springfield, Illinois 62704

Document Control Desk-Licensing
Commonwealth Edison Company
1400 Opus Place, Suite 400
Downers Grove, Illinois 60515

Ms. C. Sue Hauser, Project Manager
Westinghouse Electric Corporation
Energy Systems Business Unit
Post Office Box 355
Pittsburgh, Pennsylvania 15230

Joseph Gallo
Gallo & Ross
1025 Connecticut Ave., NW, Suite 1014
Washington, DC 20036

Ms. Bridget Little Rorem
Appleseed Coordinator
117 N. Linden Street
Essex, Illinois 60935

Howard A. Learner
Environmental Law and Policy
Center of the Midwest
35 East Wacker Dr., Suite 1300
Chicago, Illinois 60601-2110

U.S. Nuclear Regulatory Commission
Braidwood Resident Inspectors Office
35100 S. Rt. 53, Suite 79
Braceville, Illinois 60407

Ms. Lorraine Creek
RR 1, Box 182
Manteno, Illinois 60950

Mr. Ron Stephens
Illinois Emergency Services & Disaster Agency
110 E. Adams Street
Springfield, Illinois 62706

Chairman
Will County Board of Supervisors
Will County Board Courthouse
Joliet, Illinois 60434

Attorney General
500 S. Second Street
Springfield, Illinois 62701

George L. Edgar
Morgan, Lewis and Bockius
1800 M Street, NW
Washington, DC 20036-5869

Commonwealth Edison Company
Braidwood Station Manager
35100 S. Rt. 53, Suite 84
Braceville, Illinois 60407

Commonwealth Edison Company
Site Vice President - Braidwood
35100 S. Rt. 53, Suite 84
Braceville, Illinois 60407-9619

Mr. David Helwig
Senior Vice President
Commonwealth Edison Company
Executive Towers West III
1400 Opus Place, Suite 900
Downers Grove, Illinois 60515

Mr. Gene H. Stanley
Vice President - Nuclear Operations
Commonwealth Edison Company
Executive Towers West III
1400 Opus Place, Suite 900
Downers Grove, Illinois 60515

Commonwealth Edison Company
Reg. Assurance Supervisor - Braidwood
35100 S. Rt. 53, Suite 84
Braceville, Illinois 60407-9619

Mr. Christopher Crane
Senior Vice President - Nuclear Operations
Commonwealth Edison Company
Executive Towers West III
1400 Opus Place, Suite 900
Downers Grove, Illinois 60515

Mr. R. M. Krich
Vice President - Regulatory Services
Commonwealth Edison Company
Executive Towers West III
1400 Opus Place, Suite 500
Downers Grove, Illinois 60515

Ms. Pamela B. Stroebel
Senior Vice President and General Counsel
Commonwealth Edison Company
P.O. Box 767
Chicago, Illinois 60690-0767

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

COMMONWEALTH EDISON COMPANY

DOCKET NO. STN 50-456

BRAIDWOOD STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 107
License No. NPF-72

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Commonwealth Edison Company (the licensee) dated March 15, 2000, 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;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment 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;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

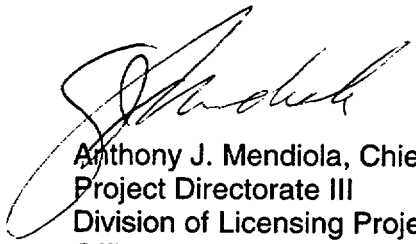
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-72 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A as revised through Amendment No. 107 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. This license amendment is effective as of the date of its issuance and shall be implemented within 30 days.

FOR THE NUCLEAR REGULATORY COMMISSION



Anthony J. Mendiola, Chief, Section 2
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: June 13, 2000

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

COMMONWEALTH EDISON COMPANY

DOCKET NO. STN 50-457

BRAIDWOOD STATION, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 107
License No. NPF-77

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Commonwealth Edison Company (the licensee) dated March 15, 2000, 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;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment 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;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

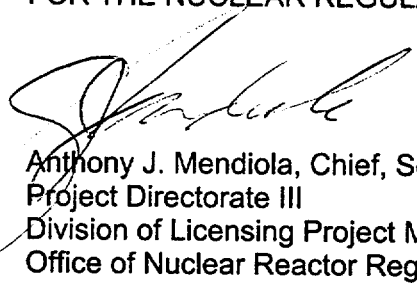
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-77 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A as revised through Amendment No. 107 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. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of the date of its issuance and shall be implemented within 30 days.

FOR THE NUCLEAR REGULATORY COMMISSION



Anthony J. Mendiola, Chief, Section 2
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: June 13, 2000

ATTACHMENT TO LICENSE AMENDMENT NOS. 107 AND 107

FACILITY OPERATING LICENSE NOS NPF-72 AND NPF-77

DOCKET NOS. STN 50-456 AND STN 50-457

Replace the following page of the Appendix "A" Technical Specifications with the attached page. The revised page is identified by amendment number and contains a vertical line indicating the area of change.

| Remove Pages | Insert Pages |
|---|---|
| 3.7.9.1 | 3.7.9.1 |

## 3.7 PLANT SYSTEMS

### 3.7.9 Ultimate Heat Sink (UHS)

LCO 3.7.9 The UHS shall be OPERABLE.

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

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|---|---|
| A. UHS inoperable. | A.1 Be in MODE 3.<br>AND<br>A.2 Be in MODE 5. | 6 hours<br><br>36 hours |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|---|---|---|
| SR 3.7.9.1 | Verify water level of UHS is ≥ 590 ft Mean Sea Level (MSL). | 24 hours |
| SR 3.7.9.2 | Verify average water temperature of UHS is ≤ 100°F. | 24 hours |
| SR 3.7.9.3 | Verify bottom level of UHS is ≤ 584 ft MSL. | 18 months |

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

# SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

# RELATED TO AMENDMENT NO. 107 TO FACILITY OPERATING LICENSE NO. NPF-72

# AND AMENDMENT NO. 107 TO FACILITY OPERATING LICENSE NO. NPF-77

# COMMONWEALTH EDISON COMPANY

# BRAIDWOOD STATION, UNIT NOS. 1 AND 2

# DOCKET NOS. STN 50-456 AND STN 50-457

## 1.0 INTRODUCTION

By letter dated March 15, 2000, Commonwealth Edison Company (the licensee) requested an amendment to the Technical Specifications (TSs) for Operating Licenses Nos. NPF-72 and NPF-77 for Braidwood Station, Units 1 and 2 (Braidwood). The proposed TS change would modify TS 3.7.9 "Ultimate Heat Sink (UHS)" to allow plant operation in modes 1 through 4 with a water temperature limit of the UHS of 100 °F instead of the current 98 °F.

## 2.0 BACKGROUND

At Braidwood, the UHS consists of an excavated essential cooling pond integral with the main cooling pond. The maximum heat load on the UHS consists of one unit undergoing post loss-of- coolant accident (LOCA) cooldown concurrent with a loss of offsite power (LOOP) and the unaffected unit undergoing a safe non-accident shutdown. Both units are assumed to be at full power operation and the main cooling pond is assumed to be unavailable at the beginning of the accident.

During the summer of 1999, due to unusually hot weather, the UHS temperature approached the current TS limit of 98 °F. In July 1999, ComEd requested a temporary TS change on an exigent basis to raise the UHS temperature limit from 98 °F to 100 °F. The Nuclear Regulatory Commission (NRC) approved the temporary change in Amendment No. 103. The licensee has requested a permanent revision to the TS to preclude dual unit shutdown if the UHS temperature increases above 98 °F.

## 3.0 EVALUATION

The submittal proposes to change TS 3.7.9 which requires the UHS to be operable in modes 1 to 4. According to the current surveillance requirement, 3.7.9.2, the UHS is considered operable if the average water temperature is less than or equal to 98 °F. This surveillance requirement assures that the essential service water system will cool the component cooling water to at least its maximum allowable temperature under the maximum accident and normal design heat loads for 30 days following a design basis accident.

Regulatory Guide 1.27, Revision 2, Ultimate Heat Sink for Nuclear Power Plants, provides that the UHS be capable of supplying cooling water for 30 days at such temperatures that the design temperature of safety-related equipment is not exceeded. The maximum UHS heat load occurs when one unit is undergoing post-LOCA cooldown with loss of offsite power and the other unit is in the process of being shut down. In addition, it is assumed that the main cooling pond is unavailable and only the UHS will be used to supply essential service water (ESW) to cool the plant.

The UHS is the source of water which is pumped by the ESW pump to various critical heat loads. The licensee completed an analysis of the UHS and verified that the UHS is capable of providing sufficient cooling for normal shutdown of one unit and accident conditions in the other unit. The meteorological conditions chosen for the Braidwood Station UHS analysis utilized a synthetic 36-day period consisting of the most severe 5 days, most severe 1 day, and the most severe 30 days based on Braidwood's licensing basis meteorological data. Heat sink temperatures for these weather periods were evaluated using a model of the UHS. Normally, one pump is operating on each unit. In the event of a loss of offsite power, a second pump will start. With all four ESW pumps operating, the analysis by the licensee concluded that with an initial UHS temperature of 100 °F, the required heat loads can be met for the required 30 days.

For containment response analyses, the licensee analyses are based on UHS temperature of 100 °F; the component cooling water temperature (CCW) is based on 120 °F for the residual heat removal (RHR) heat exchanger, and 100 °F for the inlet temperature of the Reactor Containment Fan Cooler (RCFC). Therefore, the proposed UHS temperature limit change from 98 °F to 100 °F has already been evaluated and found to be acceptable by these analyses. The peak containment temperature and pressure, and long term containment temperature profile used in establishing the conditions for equipment Environmental Qualification remain unchanged. The licensee's analyses are documented in the updated Final Safety Analysis Report (UFSAR) Chapters 6 and 15 on engineered safety features for containment response and accident analyses for LOCA and non-LOCA transients respectively.

For LOCA analyses, the ESW temperature of 100 °F is already assumed for cooling the RHR heat exchanger. Thus, the change of the UHS temperature from 98 °F to 100 °F has no impact on LOCA analyses and does not result in a change to the calculated peak cladding temperature.

For non-LOCA analyses, the UHS temperature is not used as an input, therefore, the proposed change has no impact on non-LOCA analyses.

Analyses and tests evaluated the operation of the CCW closed loop system, the auxiliary feedwater pumps, the emergency core cooling system pumps, the containment spray pumps, the ESW pumps, the control room chillers, the emergency diesel generator and the RCFCs and their support equipment (oil coolers, room cubicle coolers and jacket water cooling system). The analyses, field performance tests, and manufacturers' specifications support a maximum ESW temperature of 100 °F.

## 4.0 TECHNICAL SPECIFICATION CHANGES

The only change is the surveillance requirement (SR) 3.7.9.2, under TS 3.7.9 UHS. SR 3.7.9.2 will read "Verify average water temperature of UHS is ≤ 100 °F." This is the only change needed and is acceptable based on the above analysis which shows that the temperature increase will not affect safe operation of the facility.

## 5.0 SUMMARY

The proposal is based on analyses documented in the Braidwood UFSAR where, the maximum UHS temperature of 100 °F was assumed in the analyses. In addition, the manufacturer's specifications and field tests support the qualification of essential equipment at the higher UHS water temperature. Therefore, it is concluded that the proposed TS change is acceptable.

## 6.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Illinois State official was notified of the proposed issuance of the amendments. The State official had no comments.

## 7.0 ENVIRONMENTAL CONSIDERATION

The amendments change a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes a surveillance requirement. The NRC staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration, and there has been no public comment on such finding (65 FR 25763). Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

## 8.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributors: L. Lois
S. Saba

Date: June 13, 2000