

March 20, 1995

Mr. D. L. Farrar  
Manager, Nuclear Regulatory Services  
Commonwealth Edison Company  
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Downers Grove, IL 60515

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PDIII-2 r/f(2)  
Docket File  
M. Gamberoni  
G. Dick(2)  
C. Moore(2)  
OPA  
L. Miller, RIII  
ACRS (4)

SUBJECT: ISSUANCE OF AMENDMENTS (TAC NOS. M85240, M85239, M85237 AND M85238)

Dear Mr. Farrar:

The Commission has issued the enclosed Amendment No. 71 to Facility Operating License No. NPF-37 and Amendment No. 71 to Facility Operating License No. NPF-66 for the Byron Station, Unit Nos. 1 and 2, respectively, and Amendment No. 62 to Facility Operating License No. NPF-72 and Amendment No. 62 to Facility Operating License No. NPF-77 for the Braidwood Station, Unit Nos. 1 and 2, respectively. The amendments are in response to your application dated December 22, 1992.

These amendments add new requirements to the Technical Specifications (TS) to ensure that an Essential Service Water system (SX) pump and crossover path is available from a shutdown unit to serve as backup to an operating unit. In addition, a new TS is added to require the unit crosstie to be open or capable of being opened from the Main Control Room whenever either or both units are in an operating mode (MODE 1, 2, 3, or 4).

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,

Original signed by:

Ramin R. Assa, Project Manager  
Project Directorate III-2  
Division of Reactor Projects - III/IV  
Office of Nuclear Reactor Regulation

Docket Nos. STN 50-454, STN 50-455,  
STN 50-456, STN 50-457

- Enclosures:
1. Amendment No. 71 to NPF-37
  2. Amendment No. 71 to NPF-66
  3. Amendment No. 62 to NPF-72
  4. Amendment No. 62 to NPF-77
  5. Safety Evaluation

cc w/encls: see next page

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D. L. Farrar  
Commonwealth Edison Company

cc:

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Braidwood Station Manager  
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Braceville, Illinois 60407

Chairman, Ogle County Board  
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Oregon, Illinois 61061



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

COMMONWEALTH EDISON COMPANY

DOCKET NO. STN 50-454

BYRON STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 71  
License No. NPF-37

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Commonwealth Edison Company (the licensee) dated December 22, 1992, 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-37 is hereby amended to read as follows:

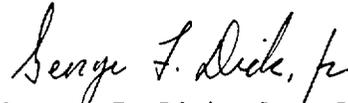
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(2) Technical Specifications

The Technical Specifications contained in Appendix A as revised through Amendment No. 71 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.

FOR THE NUCLEAR REGULATORY COMMISSION



George F. Dick, Jr., Project Manager  
Project Directorate III-2  
Division of Reactor Projects - III/IV  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: March 20, 1995



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

COMMONWEALTH EDISON COMPANY

DOCKET NO. STN 50-455

BYRON STATION, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 71  
License No. NPF-66

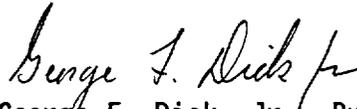
1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Commonwealth Edison Company (the licensee) dated December 22, 1992, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations set forth in 10 CFR Chapter 1;
  - 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-66 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A (NUREG-1113), as revised through Amendment No. 71 and revised by Attachment 2 to NPF-66, and the Environmental Protection Plan contained in Appendix B, both of which were attached to License No. NPF-37, dated February 14, 1985, are hereby incorporated into this license. Attachment 2 contains a revision to Appendix A which is 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.

FOR THE NUCLEAR REGULATORY COMMISSION



George F. Dick, Jr., Project Manager  
Project Directorate III-2  
Division of Reactor Projects - III/IV  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: March 20, 1995

ATTACHMENT TO LICENSE AMENDMENT NOS. 71 AND 71  
FACILITY OPERATING LICENSE NOS. NPF-37 AND NPF-66  
DOCKET NOS. STN 50-454 AND STN 50-455

Revise the Appendix A Technical Specifications by removing the pages identified below and inserting the attached pages. The revised pages are identified by the captioned amendment number and contain marginal lines indicating the area of change. The page marked with an asterisk is provided for convenience only.

<u>Remove Pages</u>	<u>Insert Pages</u>
*3/4 7-11	*3/4 7-11
3/4 7-12	3/4 7-12
3/4 7-12a	3/4 7-12a
3/4 7-12b	3/4 7-12b
B 3/4 7-3	B 3/4 7-3

## PLANT SYSTEMS

### 3/4.7.3 COMPONENT COOLING WATER SYSTEM

#### LIMITING CONDITION FOR OPERATION

3.7.3 The Component Cooling Water System shall be OPERABLE with:

- a. Two safety loops serving the RH pumps and RH heat exchangers.
- b. Two component cooling water pumps powered from 4 kV Busses 141 and 142 for Unit 1 (Busses 241 and 242 for Unit 2), and
- c. Two component cooling water heat exchangers.

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

#### ACTION:

- a. With only one safety loop OPERABLE, restore at least two loops to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- b. With only one component cooling water pump OPERABLE, restore at least two pumps to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- c. With only one heat exchanger OPERABLE, restore at least two heat exchangers to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

#### SURVEILLANCE REQUIREMENTS

4.7.3.1 At least two component cooling water loops shall be demonstrated OPERABLE at least once per 31 days by verifying that each valve (manual, power-operated, or automatic) servicing safety-related equipment that is not locked, sealed, or otherwise secured in position, is in its correct position.

4.7.3.2 At least two component cooling water pumps shall be demonstrated OPERABLE by performing the following:

- a. The component cooling water pumps shall be operated each month. Performance will be acceptable if the pump starts upon actuation, operates for at least 4 hours, and satisfies the cooling requirements for the routine operation of the component cooling water system, and
- b. Verifying at least once per 18 months during shutdown that each component cooling water pump starts automatically on a SI test signal. This will include a test of the common component cooling water pump while powered from 4 kV Busses 141 and 142 for Unit 1 (Busses 241 and 242 for Unit 2).

4.7.3.3 At least two component cooling water heat exchangers shall be verified OPERABLE at least once per 31 days by:

- a. Verifying that each component cooling water heat exchanger inlet and outlet valve is OPERABLE, and
- b. Verifying the Essential Service Water is available to each component cooling water heat exchanger.

## PLANT SYSTEMS

### 3/4.7.4 ESSENTIAL SERVICE WATER SYSTEM

#### LIMITING CONDITION FOR OPERATION

---

3.7.4 At least two independent Essential Service Water Systems shall be OPERABLE.

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

ACTION:

- a. With only one Essential Service Water System OPERABLE, restore at least two Essential Service Water Systems 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.

#### SURVEILLANCE REQUIREMENTS

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4.7.4 At least two Essential Service Water Systems shall be demonstrated OPERABLE:

- a. At least once per 31 days by verifying that each valve (manual, power-operated, or automatic) servicing safety-related equipment that is not locked, sealed, or otherwise secured in position is in its correct position.
- b. At least once per 18 months during shutdown, by verifying that:
  - 1) Each automatic valve servicing safety-related equipment or isolating the non-nuclear safety-related portion of the system actuates to its correct position on a Safety Injection test signal, and
  - 2) Each Essential Service Water System pump starts automatically on a Safety Injection test signal.

## PLANT SYSTEMS

### 3/4.7.4 ESSENTIAL SERVICE WATER SYSTEM

#### LIMITING CONDITION FOR OPERATION

---

3.7.4.1 A Unit 2 (Unit 1) Essential Service Water pump shall be available to support Unit 1 (Unit 2) operation.

APPLICABILITY: Unit 1 (Unit 2) in MODES 1, 2, 3, and 4, with  
Unit 2 (Unit 1) in MODES 5 and 6, and with no fuel  
in the reactor vessel.

#### ACTION:

If neither Unit 2 (Unit 1) Essential Service Water pump is available, restore one pump to available status within 7 days or place Unit 1 (Unit 2) in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

#### SURVEILLANCE REQUIREMENTS

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4.7.4.1 A Unit 2 (Unit 1) Essential Service Water pump shall be demonstrated available to support Unit 1 (Unit 2) operation:

- a. At least once per 24 hours by verifying that:
  - 1) The available Essential Service Water pump is capable of being manually started from the Main Control Room, and
  - 2) An Essential Service Water flowpath is established, or capable of being established from the Main Control Room, from Unit 2 (Unit 1) to Unit 1 (Unit 2).
- b. At least once per 31 days, by running the available pump for 15 minutes.

## PLANT SYSTEMS

### 3/4.7.4 ESSENTIAL SERVICE WATER SYSTEM

#### LIMITING CONDITION FOR OPERATION

---

3.7.4.2 The Essential Service Water System Unit Crosstie shall be either open or capable of being opened from the Main Control Room, to provide an Essential Service Water flowpath between Unit 1 and Unit 2.

APPLICABILITY: Any Unit in MODES 1, 2, 3, and 4.

#### ACTION:

- a. With one or both of the crosstie valve(s) closed and not capable of being opened from the Main Control Room, within 7 days restore the valve(s) to available status or open the affected valve(s), and maintain the affected valve(s) open; otherwise be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- b. The provisions of Specification 3.0.4 are not applicable.

#### SURVEILLANCE REQUIREMENTS

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4.7.4.2 The Essential Service Water System Unit Crosstie shall be demonstrated available:

- a. At least once per 92 days by cycling each crosstie valve, 1SX005 and 2SX005, or verifying the valve is locked open with power removed.
- b. The provisions of Specification 4.0.4 are not applicable.

## PLANT SYSTEMS

### BASES

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#### 3/4.7.1.5 MAIN STEAM LINE ISOLATION VALVES

The OPERABILITY of the main steam line isolation valves ensures that no more than one steam generator will blowdown in the event of a steam line rupture. This restriction is required to: (1) minimize the positive reactivity effects of the Reactor Coolant System cooldown associated with the blowdown, and (2) limit the pressure rise within containment in the event the steam line rupture occurs within containment. The OPERABILITY of the main steam isolation valves within the closure times of the Surveillance Requirements are consistent with the assumptions used in the safety analyses.

#### 3/4.7.2 STEAM GENERATOR PRESSURE/TEMPERATURE LIMITATION

The limitation on steam generator pressure and temperature ensures that the pressure-induced stresses in the steam generators do not exceed the maximum allowable fracture toughness stress limits. The limitations of 70°F and 200 psig are based on a steam generator RT<sub>NDT</sub> of 60°F and are sufficient to prevent brittle fracture.

#### 3/4.7.3 COMPONENT COOLING WATER SYSTEM

The OPERABILITY of the Component Cooling Water System ensures that sufficient cooling capacity is available for continued operation of safety-related equipment during normal and accident conditions. The redundant cooling capacity of this system, assuming a single failure, is consistent with the assumptions used in the safety analyses.

#### 3/4.7.4 ESSENTIAL SERVICE WATER SYSTEM

The OPERABILITY of the Essential Service Water System ensures that sufficient cooling capacity is available for continued operation of safety-related equipment during normal and accident conditions. The redundant cooling capacity of this system, assuming a single failure, is consistent with the assumptions used in the accident conditions within acceptable limits.

The OPERABILITY of the unit crosstie along with the availability of an Essential Service Water pump in the shut down unit ensures the availability of sufficient redundant cooling capacity for the operating unit.

#### 3/4.7.5 ULTIMATE HEAT SINK

The limitations on the ultimate heat sink ensure 1) sufficient cooling capacity is available for continued operation of safety related equipment during normal and accident conditions and 2) adequate inventory is available to provide a 30-day cooling water supply to safety related equipment. The limiting design basis event for the UHS is a loss of coolant accident coincident with a loss of offsite power on one unit, in conjunction with the other unit proceeding to an orderly shutdown and cooldown from maximum power to Mode 5, assuming a single active failure.



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. 62  
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 December 22, 1992, 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. 62 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.

FOR THE NUCLEAR REGULATORY COMMISSION



Ramin R. Assa, Project Manager  
Project Directorate III-2  
Division of Reactor Projects - III/IV  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: March 20, 1995



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. 62  
License No. NPF-77

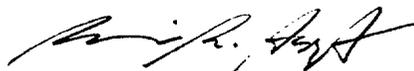
1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Commonwealth Edison Company (the licensee) dated December 22, 1992, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations set forth in 10 CFR Chapter 1;
  - 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. 62 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.

FOR THE NUCLEAR REGULATORY COMMISSION



Ramin R. Assa, Project Manager  
Project Directorate III-2  
Division of Reactor Projects - III/IV  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: March 20, 1995

ATTACHMENT TO LICENSE AMENDMENT NOS. 62 AND 62

FACILITY OPERATING LICENSE NOS. NPF-72 AND NPF-77

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

Replace the following pages of the Appendix "A" Technical Specifications with the attached pages. The revised pages are identified by amendment number and contain vertical lines indicating the area of change. The page marked with an asterisk is provided for convenience only.

Remove Pages

\*3/4 7-11

3/4 7-12

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B 3/4 7-3

Insert Pages

\*3/4 7-11

3/4 7-12

3/4 7-12a

3/4 7-12b

B 3/4 7-3

## PLANT SYSTEMS

### 3/4.7.3 COMPONENT COOLING WATER SYSTEM

#### LIMITING CONDITION FOR OPERATION

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3.7.3 The Component Cooling Water System shall be OPERABLE with:

- a. Two safety loops serving the RH pumps and RH heat exchangers.
- b. Two component cooling water pumps powered from 4 kV Busses 141 and 142 for Unit 1 (Busses 241 and 242 for Unit 2), and
- c. Two component cooling water heat exchangers.

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

#### ACTION:

- a. With only one safety loop OPERABLE, restore at least two loops to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- b. With only one component cooling water pump OPERABLE, restore at least two pumps to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- c. With only one heat exchanger OPERABLE, restore at least two heat exchangers to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

#### SURVEILLANCE REQUIREMENTS

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4.7.3.1 At least two component cooling water loops shall be demonstrated OPERABLE at least once per 31 days by verifying that each valve (manual, power-operated, or automatic) servicing safety-related equipment that is not locked, sealed, or otherwise secured in position, is in its correct position.

4.7.3.2 At least two component cooling water pumps shall be demonstrated OPERABLE by performing the following:

- a. The component cooling water pumps shall be operated each month. Performance will be acceptable if the pump starts upon actuation, operates for at least 4 hours, and satisfies the cooling requirements for the routine operation of the component cooling water system, and
- b. Verifying at least once per 18 months during shutdown that each component cooling water pump starts automatically on a SI test signal. This will include a test of the common component cooling water pump while powered from 4 kV Busses 141 and 142 for Unit 1 (Busses 241 and 242 for Unit 2).

4.7.3.3 At least two component cooling water heat exchangers shall be verified OPERABLE at least once per 31 days by:

- a. Verifying that each component cooling water heat exchanger inlet and outlet valve is OPERABLE, and
- b. Verifying the Essential Service Water is available to each component cooling water heat exchanger.

## PLANT SYSTEMS

### 3/4.7.4 ESSENTIAL SERVICE WATER SYSTEM

#### LIMITING CONDITION FOR OPERATION

---

3.7.4 At least two independent Essential Service Water Systems shall be OPERABLE.

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

ACTION:

- a. With only one Essential Service Water System OPERABLE, restore at least two Essential Service Water Systems 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.

#### SURVEILLANCE REQUIREMENTS

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4.7.4 At least two Essential Service Water Systems shall be demonstrated OPERABLE:

- a. At least once per 31 days by verifying that each valve (manual, power-operated, or automatic) servicing safety-related equipment that is not locked, sealed, or otherwise secured in position is in its correct position.
- b. Not used.
- c. At least once per 18 months during shutdown, by verifying that:
  - 1) Each automatic valve servicing safety-related equipment or isolating the non-nuclear safety-related portion of the system actuates to its correct position on a Safety Injection test signal, and
  - 2) Each Essential Service Water System pump starts automatically on a Safety Injection test signal.

PLANT SYSTEMS

ESSENTIAL SERVICE WATER SYSTEM

LIMITING CONDITION FOR OPERATION

---

3.7.4.1 A Unit 2 (Unit 1) Essential Service Water pump shall be available to support Unit 1 (Unit 2) operation.

APPLICABILITY: Unit 1 (Unit 2) in MODES 1, 2, 3, and 4, with  
Unit 2 (Unit 1) in MODES 5 and 6 and with no fuel  
in the reactor vessel.

ACTION:

If neither Unit 2 (Unit 1) Essential Service Water pump is available, restore one pump to available status within 7 days or place Unit 1 (Unit 2) in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

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4.7.4.1 A Unit 2 (Unit 1) Essential Service Water pump shall be demonstrated available to support Unit 1 (Unit 2) operation:

- a. At least once per 24 hours by verifying that:
  - 1) The available Essential Service Water pump is capable of being manually started from the Main Control Room, and
  - 2) An Essential Service Water flowpath is established, or capable of being established from the Main Control Room, from Unit 2 (Unit 1) to Unit 1 (Unit 2).
- b. At least once per 31 days by running the available Essential Service Water pump for 15 minutes.

## PLANT SYSTEMS

### ESSENTIAL SERVICE WATER SYSTEM

#### LIMITING CONDITION FOR OPERATION

---

3.7.4.2 The Essential Service Water System Unit Crosstie shall be open, or capable of being opened from the Main Control Room, to provide an Essential Service Water flowpath between Unit 1 and Unit 2.

APPLICABILITY: Any Unit in MODES 1, 2, 3, and 4.

#### ACTION:

- a. With one or both of the crosstie valve(s) closed and not capable of being opened from the Main Control Room, within 7 days restore the valve(s) to available status or open the affected valve(s), and maintain the affected valve(s) open; otherwise be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN in the following 30 hours.
- b. The provisions of Specification 3.0.4 are not applicable.

#### SURVEILLANCE REQUIREMENTS

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4.7.4.2 The Essential Service Water System Unit Crosstie shall be demonstrated available:

- a. At least once per 92 days by cycling each crosstie valve, 1SX005 and 2SX005, or verifying the valve is locked open with power removed.
- b. The provisions of Specification 4.0.4 are not applicable.

BASES

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3/4.7.1.5 MAIN STEAM LINE ISOLATION VALVES

The OPERABILITY of the main steam line isolation valves ensures that no more than one steam generator will blowdown in the event of a steam line rupture. This restriction is required to: (1) minimize the positive reactivity effects of the Reactor Coolant System cooldown associated with the blowdown, and (2) limit the pressure rise within containment in the event the steam line rupture occurs within containment. The OPERABILITY of the main steam isolation valves within the closure times of the Surveillance Requirements are consistent with the assumptions used in the safety analyses.

3/4.7.2 STEAM GENERATOR PRESSURE/TEMPERATURE LIMITATION

The limitation on steam generator pressure and temperature ensures that the pressure-induced stresses in the steam generators do not exceed the maximum allowable fracture toughness stress limits. The limitations of 70°F and 200 psig are based on a steam generator RT<sub>NDT</sub> of 60°F and are sufficient to prevent brittle fracture.

3/4.7.3 COMPONENT COOLING WATER SYSTEM

The OPERABILITY of the Component Cooling Water System ensures that sufficient cooling capacity is available for continued operation of safety-related equipment during normal and accident conditions. The redundant cooling capacity of this system, assuming a single failure, is consistent with the assumptions used in the safety analyses.

3/4.7.4 ESSENTIAL SERVICE WATER SYSTEM

The OPERABILITY of the Essential Service Water System ensures that sufficient cooling capacity is available for continued operation of safety-related equipment during normal and accident conditions. The redundant cooling capacity of this system, assuming a single failure, is consistent with the assumptions used in the accident conditions within acceptable limits.

The OPERABILITY of the unit crosstie along with the availability of an Essential Service Water pump in the shut down unit ensures the availability of sufficient redundant cooling capacity for the operating unit.

3/4.7.5 ULTIMATE HEAT SINK

The limitations on the ultimate heat sink level and temperature ensure that sufficient cooling capacity is available to either 1) provide normal cooldown of the facility, or 2) to mitigate the effects of accident conditions within acceptable limits.

The limitations on minimum water level and maximum temperature are based on providing a 30-day cooling water supply to safety related equipment without exceeding their design basis temperature and is consistent with the recommendations of Regulatory Guide 1.27, "Ultimate Heat Sink for Nuclear Plants," March 1974.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 71 TO FACILITY OPERATING LICENSE NO. NPF-37,  
AMENDMENT NO. 71 TO FACILITY OPERATING LICENSE NO. NPF-66,  
AMENDMENT NO. 62 TO FACILITY OPERATING LICENSE NO. NPF-72,  
AND AMENDMENT NO. 62 TO FACILITY OPERATING LICENSE NO. NPF-77  
COMMONWEALTH EDISON COMPANY  
BYRON STATION, UNIT NOS. 1 AND 2  
BRAIDWOOD STATION, UNIT NOS. 1 AND 2  
DOCKET NOS. STN 50-454, STN 50-455, STN 50-456 AND STN 50-457

1.0 INTRODUCTION

By letter dated December 22, 1992, Commonwealth Edison Company (ComEd, or the licensee) submitted a request for changes to the Technical Specifications (TS) for Byron Station, Unit Nos. 1 and 2 (Byron), and Braidwood Station, Unit Nos. 1 and 2 (Braidwood). The proposed changes would revise the plant TSs based on the recommendation provided by the NRC staff in Generic Letter (GL) 91-13, related to "Essential Service Water System Failures at Multi-Unit Sites." Byron has previously revised their TSs to address the staff's concerns contained in GL 91-13. Consequently, the Byron TS changes are primarily for clarification and format revisions. Braidwood's proposed changes will implement the recommendations of the GL.

Specifically for Braidwood, the licensee requested the addition of TS 3/4.7.4.1 and TS 3/4.7.4.2. These new TSs would require Braidwood to have one Essential Service Water (ESW) pump available (or capable of being started from the main control room) on a shutdown unit and to have the ESW unit crosstie valves open (or capable of being opened from the control room) when the other unit is in an operating Mode (1, 2, 3, and 4). This requirement already exists for Byron.

In addition, the licensee requested to delete Braidwood TS 4.7.4.b. to reduce the frequency of verifying the position of ESW System Return Valves, OSX165A and OSX165B. Finally, the TS Bases for both sites was revised to provide the basis for requiring the shutdown unit's ESW pump available and the ESW crosstie valves open.

## 2.0 EVALUATION

The Essential Service Water System (ESWS) supplies cooling water to safety-related equipment during normal and accident conditions. Both Byron and Braidwood are two-unit sites. Each unit has two independent full capacity pump trains which satisfy single-failure criteria because all its components are multiple and redundant. The ESW trains are cross-connected within each unit and are cross-connected between the units through two isolation valves.

In GL 91-13, the staff recommended administrative-type changes to the TSs to enhance the availability of the ESW system at several multi-unit sites. The issues discussed in GL 91-13 had been addressed by Byron previously and changes had been incorporated into the TSs by License Amendment No. 24 (November 23, 1988). The proposed changes to the Byron TSs addressed in this Safety Evaluation are refinements that the licensee committed to make in a letter of March 16, 1992, and editorial changes intended to eliminate the duplication of certain ESW surveillances that are already included in other sections of the TSs.

The licensee had committed to revise Braidwood plant procedures to include requirements similar to GL 91-13 in an August 5, 1986, letter (before GL 91-13 was issued). On March 16, 1992, the licensee responded to GL 91-13 and committed to amend Braidwood TSs to include GL 91-13 recommendations and formalize the commitments made in the August 5, 1986, letter. By letter dated December 22, 1992, the licensee proposed the following TSs changes:

### Technical Specification 3/4.7.4

The proposed change to the Byron TSs deletes references to the cooling tower and the surveillances related to the cooling tower fans and the cooling tower fill material which are included in another section of the TSs. Amendment No. 54, issued May 17, 1993, revised the TSs for the ultimate heat sink (UHS). The change resulted from the licensee's design basis reconstitution of the UHS at Byron. TS 3/4.7.5 was revised to include the cooling towers as part of the UHS operability requirements. Consequently, references to the cooling tower and requirements for demonstrating its operability may be deleted from TS 3/4.7.4.

The licensee proposed to revise Braidwood TS 3/4.7.4 by deleting the surveillance requirement to verify the position of ESWS return valves, OSX165A and OSX165B. This deletion does not represent any physical changes at the plant. In the December 22, 1992, submittal the licensee committed to maintain the valves open with power removed and to continue verifying the position of these valves, but less frequently. The ESWS's parameters are indicated in the main control room and are continuously monitored by the licensed operators. The closure of these valves would result in significant changes in ESWS parameters and should be detected by the operators. This change does not represent any significant reduction in the margin of safety at the plant. The Byron TSs did not include references to the two valves.

#### Technical Specification 3.7.4.1

This TS would require the licensee to keep at least one ESW pump available on a shutdown unit when the other unit is in an operating Mode. The corresponding ACTION statement would require the operating unit to shut down if the non-operating unit's ESW pumps are not available. The SURVEILLANCE REQUIREMENTS would ensure that the non-operating unit's ESW pumps are available or capable of being started from the control room and a flow path to the operating unit's ESWS could be established. This is a new TS requirement for Braidwood. The requirement currently exists for Byron. However, the surveillance requirement is changed to ensure that an ESW flowpath is established or capable of being established rather than listing each valve in that flowpath.

#### Technical Specification 3.7.4.2

This TS would require the licensee to keep the ESWS crosstie valves between Units 1 and 2 open or capable of being opened from the control room whenever either unit is in an operating Mode. The corresponding ACTION statement would require the licensee to place the units in HOT STANDBY and eventually in COLD SHUTDOWN when any of these valves are closed and not capable of being opened from the control room. The SURVEILLANCE REQUIREMENTS would demonstrate the operability and availability of these crosstie valves. This is a new TS requirement for Braidwood. The requirement currently exists for Byron. Editorial changes were made to improve clarity.

### 3.0 SUMMARY

Based on the above evaluation and review of the information provided in the licensee's December 22, 1992, submittal, the staff finds the proposed revisions acceptable. These revisions would increase the margin of safety by making an ESW pump on a shutdown unit available to support an operating unit by providing additional cooling capacity. The new TSs should enhance the availability of the ESWS. The safety enhancement is a reduction in the core damage frequency and a reduction in the associated risk of offsite radioactive releases as a result of ESW failure.

### 4.0 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.

### 5.0 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 change surveillance requirements. 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 (58 FR 6994). 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.

#### 6.0 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.

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Date: March 20, 1995