

January 21, 1988

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

Mr. L. D. Butterfield, Jr.
Nuclear Licensing Manager
Commonwealth Edison Company
Post Office Box 767
Chicago, Illinois 60690

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Dear Mr. Butterfield:

The Commission has issued the enclosed Amendment No. 14 to Facility Operating License No. NPF-37 and Amendment No. to Facility Operating License No. NPF-66 for the Byron Station, Unit Nos. 1 and 2, respectively and Amendment No. to Facility Operating License No. NPF-72, and Amendment No. to Facility Operating License No. NPF-75 for Braidwood Station, Units No. 1 and 2, respectively. The amendments consist of changes to the Technical Specifications. in response to your application transmitted by letter dated September 29, 1987.

These amendments approve changes to the Technical Specifications that extend the allowable outage times from 72 hours to 7 days for several systems and subsystems.

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

Sincerely,

/s /
Stephen P. Sands, Project Manager
Project Directorate III-2
Division of Reactor Projects - III
IV, V and Special Projects

/s /
Leonard N. Olshan, Project Manager
Project Directorate III-2
Division of Reactor Projects -III,
IV, V and Special Projects

Enclosures:

- | | |
|----------------------------|----------------------------|
| 1. Amendment No. to NPF-37 | 3. Amendment No. to NPF-72 |
| 2. Amendment No. to NPF-66 | 4. Amendment No. to NPF-75 |
| | 5. Safety Evaluation |

cc: w/enclosures
See next page

*See Previous Concurrence

| | | | | |
|------------|------------|------------|-----------|-----------|
| PDIII-2:LA | PDIII-2:PM | PDIII-2:PM | OGC-Beth. | PDIII-2:D |
| *LLuther | *LOshan:bj | *SSands | *MYoung | DMiller |
| 11/23/87 | 11/23/87 | 11/23/87 | 12/14/87 | / 1/9/88 |

Mr. L. D. Butterfield, Jr.
Commonwealth Edison Company

Byron/Braidwood

cc:

Mr. William Kortier
Atomic Power Distribution
Westinghouse Electric Corporation
Post Office Box 355
Pittsburgh, Pennsylvania 15230

Joseph Gallo, Esq.
Isham, Lincoln & Beale
1150 Connecticut Ave., N.W.
Suite 1100
Washington, D.C. 20036

C. Allen Bock, Esq.
Post Office Box 342
Urbana, Illinois 61801

Regional Administrator
U.S. NRC, Region III
799 Roosevelt Road
Glen Ellyn, Illinois 60137

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

Mr. Edward R. Crass
Nuclear Safeguards and Licensing
Division
Sargent & Lundy Engineers
55 East Monroe Street
Chicago, Illinois 60603

U.S. Nuclear Regulatory Commission
Resident Inspectors Office
RR#1, Box 79
Braceville, Illinois 60407

Dr. Bruce von Zellen
Department of Biological Sciences
Northern Illinois University
DeKalb, Illinois 61107

U.S. Nuclear Regulatory Commission
Byron/Resident Inspectors Office
4448 German Church Road
Byron, Illinois 61010

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

Mrs. Phillip B. Johnson
1907 Stratford Lane
Rockford, Illinois 61107

Douglass Cassel, Esq.
109 N. Dearborn Street
Suite 1300
Chicago, Illinois 60602

Ms. Pat Morrison
5568 Thunderidge Drive
Rockford, Illinois 61107

David C. Thomas, Esq.
77 S. Wacker Drive
Chicago, Illinois 60601

Elena Z. Kezells, Esq.
Isham, Lincoln & Beale
Three First National Plaza
Suite 5200
Chicago, Illinois 60602

Mr. L. D. Butterfield, Jr.
Commonwealth Edison Company

- 2 -

Byron/Braidwood

cc:

Mr. Charles D. Jones, Director
Illinois Emergency Services
and Disaster Agency
110 East Adams Street
Springfield, Illinois 62706

Mr. Michael C. Parker, Chief
Division of Engineering
Illinois Department of
Nuclear Safety
1035 Outer Park Drive, 5th Floor
Springfield, Illinois 62704

Michael Miller, Esq.
Sidley and Austin
One First National Plaza
Chicago, Illinois 60603

George L. Edgar
Newman & Holtzinger, P.C.
1615 L Street, N.W.
Washington, D.C. 20036



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

COMMONWEALTH EDISON COMPANY

DOCKET NO. STN 50-454

BYRON STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 14
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 September 29, 1987, 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 Specification 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:

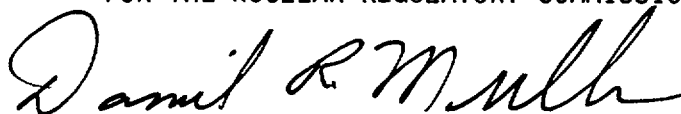
8801270146 880121
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P PDR

(2) Technical Specifications

The Technical Specifications contained in Appendix A as revised through Amendment No. 14 and the Environment 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

A handwritten signature in black ink, appearing to read "Daniel R. Muller", is written over the typed name.

Daniel R. Muller, Director
Project Directorate III-2
Division of Reactor Projects - III,
IV, V and Special Projects

Attachment:
Changes to the Technical
Specifications

Date of Issuance: January 21, 1988



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

COMMONWEALTH EDISON COMPANY

DOCKET NO. STN 50-455

BYRON STATION, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 14
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 September 29, 1987, 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-66 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix (NUREG-1113), as revised through Amendment No. 14 and revised by Attachment 2 to NPF-60, and the Environment Protection Plan contained in Appendix B, both of which are 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

A handwritten signature in cursive script, reading "Daniel R. Muller".

Daniel R. Muller, Director
Project Directorate III-2
Division of Reactor Projects - III,
IV, V and Special Projects

Attachment:
Changes to the Technical
Specifications

Date of Issuance: January 21, 1988

ATTACHMENT TO LICENSE AMENDMENT NOS. 14 AND 14
FACILITY OPERATING LICENSE NOS. NPF-37 AND NPF-66
DOCKET NOS. STN-50-454 AND STN 50-455

Revise Appendix A as follows:

| <u>Remove Pages</u> | <u>Insert Pages</u> |
|---------------------|---------------------|
| 3/4 5-3 | 3/4 5-3 |
| 3/4 6-13 | 3/4 6-13 |
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EMERGENCY CORE COOLING SYSTEMS

3/4.5.2 ECCS SUBSYSTEMS - $T_{avg} \geq 350^{\circ}\text{F}$

LIMITING CONDITION FOR OPERATION

3.5.2 Two independent Emergency Core Cooling System (ECCS) subsystems shall be OPERABLE with each subsystem comprised of:

- a. One OPERABLE centrifugal charging pump,
- b. One OPERABLE Safety Injection pump,
- c. One OPERABLE RHR heat exchanger,
- d. One OPERABLE RHR pump, and
- e. An OPERABLE flow path* capable of taking suction from the refueling water storage tank on a Safety Injection signal and automatic opening of the containment sump suction valves.

APPLICABILITY: MODES 1, 2, and 3.

ACTION:

- a. With one ECCS subsystem inoperable, restore the inoperable subsystem to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.
- b. In the event the ECCS is actuated and injects water into the Reactor Coolant System, a Special Report shall be prepared and submitted to the Commission pursuant to Specification 6.9.2 within 90 days describing the circumstances of the actuation and the total accumulated actuation cycles to date. The current value of the usage factor for each affected Safety Injection nozzle shall be provided in this Special Report whenever its value exceeds 0.70.

*During MODE 3, the discharge paths of both Safety Injection pumps may be isolated by closing SI 8835 and a portion of the discharge paths of both RHR pumps may be isolated by closing either SI8809A or SI8809B for a period of up to 2 hours to perform surveillance testing as required by Specification 4.4.6.2.2. When either SI8809A or SI8809B is closed and pressurizer pressure is below 1000 psig, the accumulators shall be OPERABLE with their isolation valves either closed, but energized, or open.

CONTAINMENT SYSTEMS

3/4.6.2 DEPRESSURIZATION AND COOLING SYSTEMS

CONTAINMENT SPRAY SYSTEM

LIMITING CONDITION FOR OPERATION

3.6.2.1 Two independent Containment Spray Systems shall be OPERABLE with each Spray System capable of taking suction from the RWST and transferring suction to the containment sump.

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

ACTION:

With one Containment Spray System inoperable, restore the inoperable Spray System to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours; restore the inoperable Spray System to OPERABLE status within the next 48 hours or be in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.2.1 Each Containment Spray System shall be demonstrated OPERABLE:

- a. At least once per 31 days by verifying that each valve (manual, power-operated, or automatic) in the flow path that is not locked, sealed, or otherwise secured in position, is in its correct position;
- b. By verifying, that on recirculation flow, each pump develops a discharge pressure of greater than or equal to 265 psig when tested pursuant to Specification 4.0.5;
- c. At least once per 18 months during shutdown, by:
 - 1) Verifying that each automatic valve in the flow path actuates to its correct position on a Containment Spray Actuation test signal, and
 - 2) Verifying that each spray pump starts automatically on a Containment Spray Actuation test signal.
- d. At least once per 5 years by performing an air or smoke flow test through each spray header and verifying each spray nozzle is unobstructed.

CONTAINMENT SYSTEMS

SPRAY ADDITIVE SYSTEM

LIMITING CONDITION FOR OPERATION

3.6.2.2 The Spray Additive System shall be OPERABLE with:

- a. A spray additive tank containing a level of between 78.6% and 90.3% of between 30% and 36% by weight NaOH solution, and
- b. Two spray additive eductors each capable of adding NaOH solution from the spray additive tank to a Containment Spray System pump flow.

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

ACTION:

With the Spray Additive System inoperable, restore the system to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours; restore the Spray Additive System to OPERABLE status within the next 48 hours or be in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.2.2 The Spray Additive System shall be demonstrated OPERABLE:

- a. At least once per 31 days by verifying that each valve (manual, power-operated, or automatic) in the flow path that is not locked, sealed, or otherwise secured in position, is in its correct position;
- b. At least once per 6 months by:
 - 1) Verifying the contained solution level in the tank, and
 - 2) Verifying the concentration of the NaOH solution by chemical analysis.
- c. At least once per 18 months during shutdown, by verifying that each automatic valve in the flow path actuates to its correct position on a Containment Spray Actuation test signal; and
- d. At least once per 5 years by verifying each water flow rate equivalent to 55(+5,-0) gallons per minute for 30% NaOH from the eductor test connections in the Spray Additive System:
 - 1) CS26A +6
68 -0 gpm (Train A), and
 - 2) CS26B +6
68 -0 gpm (Train B).

CONTAINMENT COOLING SYSTEM

LIMITING CONDITIONS FOR OPERATION

3.6.2.3 Two electrically independent systems of containment cooling fans shall be OPERABLE with two fans to each system.

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

ACTION:

- a. With one or two systems of the above required containment cooling fans inoperable and both Containment Spray Systems OPERABLE, restore both above required systems of cooling fans 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 one system of the above required containment cooling fans inoperable and one Containment Spray System inoperable, restore the inoperable Containment Spray System and the inoperable system of containment cooling fans 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

4.6.2.3 Each system of containment cooling fans shall be demonstrated OPERABLE:

- a. At least once per 31 days by:
 - 1) Starting each fan system in slow speed from the control room, and verifying that each fan system operates for at least 15 minutes, and
 - 2) Verifying an essential service water flow rate of greater than or equal to 2660 gpm to each cooler.
- b. At least once per 18 months by verifying that each fan system starts automatically on a Safety Injection test signal.

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.



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

COMMONWEALTH EDISON COMPANY

DOCKET NO. STN 50-456

BRAIDWOOD STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 4
License No. NPF-72

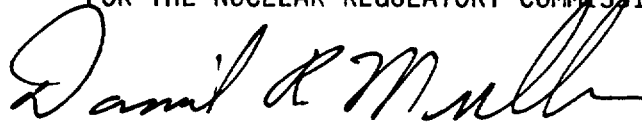
1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Commonwealth Edison Company (the licensee) dated September 29, 1987, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules 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 Specification 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. 4 and the Environment 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

A handwritten signature in black ink, appearing to read "Daniel R. Muller", is written over the typed name.

Daniel R. Muller, Director
Project Directorate III-2
Division of Reactor Projects - III,
IV, V and Special Projects

Attachment:
Changes to the Technical
Specifications

Date of Issuance: January 21, 1988



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

COMMONWEALTH EDISON COMPANY

DOCKET NO. STN 50-457

BRAIDWOOD STATION, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 4
License No. NPF-75

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Commonwealth Edison Company (the licensee) dated September 29, 1987, 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 Specification as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-75 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A as revised through Amendment No. 4 and the Environment 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. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

A handwritten signature in black ink, appearing to read "Daniel R. Muller", is written over the typed name and title.

Daniel R. Muller, Director
Project Directorate III-2
Division of Reactor Projects - III,
IV, V and Special Projects

Attachment:
Changes to the Technical
Specifications

Date of Issuance: January 21, 1988

ATTACHMENT TO LICENSE AMENDMENT NOS. 4 AND 4
AND FACILITY OPERATING LICENSE NOS. NPF-72 AND NPF-75
DOCKET NOS. STN-50-456 AND STN 50-457

Revise Appendix A as follows:

| <u>Remove Pages</u> | <u>Insert Pages</u> |
|---------------------|---------------------|
| 3/4 5-3 | 3/4 5-3 |
| 3/4 6-13 | 3/4 6-13 |
| 3/4 6-14 | 3/4 6-14 |
| 3/4 6-15 | 3/4 6-15 |
| 3/4 7-11 | 3/4 7-11 |

EMERGENCY CORE COOLING SYSTEMS

3/4.5.2 ECCS SUBSYSTEMS - $T_{avg} \geq 350^{\circ}\text{F}$

LIMITING CONDITION FOR OPERATION

3.5.2 Two independent Emergency Core Cooling System (ECCS) subsystems shall be OPERABLE with each subsystem comprised of:

- a. One OPERABLE centrifugal charging pump,
- b. One OPERABLE Safety Injection pump,
- c. One OPERABLE RHR heat exchanger,
- d. One OPERABLE RHR pump, and
- e. An OPERABLE flow path* capable of taking suction from the refueling water storage tank on a Safety Injection signal and automatic opening of the containment sump suction valves.

APPLICABILITY: MODES 1, 2, and 3.

ACTION:

- a. With one ECCS subsystem inoperable, restore the inoperable subsystem to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.
- b. In the event the ECCS is actuated and injects water into the Reactor Coolant System, a Special Report shall be prepared and submitted to the Commission pursuant to Specification 6.9.2 within 90 days describing the circumstances of the actuation and the total accumulated actuation cycles to date. The current value of the usage factor for each affected Safety Injection nozzle shall be provided in this Special Report whenever its value exceeds 0.70.

*During MODE 3, the discharge paths of both Safety Injection pumps may be isolated by closing SI8835 and a portion of the discharge paths of both RHR pumps may be isolated by closing either SI8809A or SI8809B for a period of up to 2 hours to perform surveillance testing as required by Specification 4.4.6.2.2. When either SI8809A or SI8809B is closed and pressurizer pressure is below 1000 psig, the accumulators shall be OPERABLE with their isolation valves either closed, but energized, or open.

CONTAINMENT SYSTEMS

3/4.6.2 DEPRESSURIZATION AND COOLING SYSTEMS

CONTAINMENT SPRAY SYSTEM

LIMITING CONDITION FOR OPERATION

3.6.2.1 Two independent Containment Spray Systems shall be OPERABLE with each Spray System capable of taking suction from the RWST and transferring suction to the containment sump.

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

ACTION:

With one Containment Spray System inoperable, restore the inoperable Spray System to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours; restore the inoperable Spray System to OPERABLE status within the next 48 hours or be in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.2.1 Each Containment Spray System shall be demonstrated OPERABLE:

- a. At least once per 31 days by verifying that each valve (manual, power-operated, or automatic) in the flow path that is not locked, sealed, or otherwise secured in position, is in its correct position;
- b. By verifying, that on recirculation flow, each pump develops a discharge pressure of greater than or equal to 265 psig when tested pursuant to Specification 4.0.5;
- c. At least once per 18 months during shutdown, by:
 - 1) Verifying that each automatic valve in the flow path actuates to its correct position on a Containment Spray Actuation test signal, and
 - 2) Verifying that each spray pump starts automatically on a Containment Spray Actuation test signal.
- d. At least once per 5 years by performing an air or smoke flow test through each spray header and verifying each spray nozzle is unobstructed.

CONTAINMENT SYSTEMS

SPRAY ADDITIVE SYSTEM

LIMITING CONDITION FOR OPERATION

3.6.2.2 The Spray Additive System shall be OPERABLE with:

- a. A spray additive tank containing a level of between 78.6% and 90.3% of between 30% and 36% by weight NaOH solution, and
- b. Two spray additive eductors each capable of adding NaOH solution from the spray additive tank to a Containment Spray System pump flow.

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

ACTION:

With the Spray Additive System inoperable, restore the system to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours; restore the Spray Additive System to OPERABLE status within the next 48 hours or be in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.2.2 The Spray Additive System shall be demonstrated OPERABLE:

- a. At least once per 31 days by verifying that each valve (manual, power-operated, or automatic) in the flow path that is not locked, sealed, or otherwise secured in position, is in its correct position;
- b. At least once per 6 months by:
 - 1) Verifying the contained solution level in the tank, and
 - 2) Verifying the concentration of the NaOH solution by chemical analysis.
- c. At least once per 18 months during shutdown, by verifying that each automatic valve in the flow path actuates to its correct position on a Containment Spray Actuation test signal; and
- d. At least once per 5 years by verifying each water flow rate equivalent to 55(+5,-0) gallons per minute for 30% NaOH from the eductor test connections in the Spray Additive System:
 - 1) CS26A $\begin{matrix} +6 \\ 68 -0 \end{matrix}$ gpm (Train A), and
 - 2) CS26B $\begin{matrix} +6 \\ 68 -0 \end{matrix}$ gpm (Train B).

CONTAINMENT COOLING SYSTEM

LIMITING CONDITIONS FOR OPERATION

3.6.2.3 Two electrically independent systems of containment cooling fans shall be OPERABLE with two fans to each system.

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

ACTION:

- a. With one or two systems of the above required containment cooling fans inoperable and both Containment Spray Systems OPERABLE, restore both above required systems of cooling fans 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 one system of the above required containment cooling fans inoperable and one Containment Spray System inoperable, restore the inoperable Containment Spray System and the inoperable system of containment cooling fans 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

4.6.2.3 Each system of containment cooling fans shall be demonstrated OPERABLE:

- a. At least once per 31 days by:
 - 1) Starting each fan system in slow speed from the control room, and verifying that each fan system operates for at least 15 minutes, and
 - 2) Verifying an essential service water flow rate of greater than or equal to 2660 gpm to each cooler.
- b. At least once per 18 months by verifying that each fan system starts automatically on a Safety Injection test signal.

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.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 14 TO FACILITY OPERATING LICENSE NO. NPF-37,
AMENDMENT NO. 14 TO FACILITY OPERATING LICENSE NO. NPF-66,
AMENDMENT NO. 4 TO FACILITY OPERATING LICENSE NO. NPF-72
AND AMENDMENT NO. 4 TO FACILITY OPERATING LICENSE NO. NPF-75
COMMONWEALTH EDISON COMPANY
BYRON STATION, UNITS 1 AND 2
BRAIDWOOD STATION, UNITS 1 AND 2
DOCKET NOS. STN 50-454, STN 50-455, STN 50-456, AND STN 50-457
TAC NOS. 57242, 63256

INTRODUCTION

In May 1984 Commonwealth Edison Company (the licensee) submitted its Limiting Conditions for Operation Relaxation Program (LCORP), which proposed to increase the allowable outage times (AOT) in the Technical Specifications from 72 hours to 7 days for several systems and subsystems. The submittal included a Probabilistic Risk Assessment (PRA) done to evaluate the change in risk to the public with the increased AOT. NRC obtained assistance from Brookhaven National Laboratory in reviewing the PRA. By application dated September 29, 1987 the licensee requested amendments to the Technical Specifications for Byron Station, Units 1 and 2, and Braidwood Station, Units 1 and 2. The proposed changes increase the AOTs to 7 days for some, but not all, of the systems and subsystems originally proposed in the licensee's LCORP.

EVALUATION

On December 3 and December 6, 1985, the NRC and BNL met with licensee to discuss the review of LCORP. Details of the meeting are documented in the January 24, 1986 Meeting Summary.

The major issue discussed at the meeting was that BNL estimated the core melt frequency for Byron 1 (the only unit in operation at that time) to be about 10^{-3} /year. This issue was resolved on an interim basis by the commitments made in the licensee's December 6, 1985 letter.

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At the meeting, BNL also presented the results of its review concerning the licensee's request to increase several AOTs. BNL indicated that the increase in core melt frequency when increasing the AOT from 72 hours to 7 days is negligible for the following six systems: containment heat removal system (containment spray pumps and fan coolers), Emergency Core Cooling Systems (charging pumps, Safety Injection pumps and Residual Heat Removal pumps), and component cooling. For the auxiliary feedwater pumps, the effect of the increased AOT is slightly greater, and for the diesel generators and the essential service water pumps the effect is greater still.

Subsequent to the meeting, the results of BNL's review were published in NUREG/CR-4404, BNL-NUREG-51930, "Analysis of Allowed Outage Times at the Byron Generating Station," June 1986. The staff, in a January 15, 1986 memorandum from Themis P. Speis to Hugh L. Thompson, supported BNL's conclusion that the increased AOT should be permitted for the aforementioned six systems and should be denied for the auxiliary feedwater pumps, diesel generators and essential service water pumps.

The licensee has also evaluated the differences between the Byron and Braidwood plant designs and determined that the differences are insignificant in their contribution to the core melt modeling. Therefore, the licensee concluded that the conclusions of the Byron study apply to the Braidwood Units. The staff agrees.

The September 29, 1987 application requested increased AOT for only those six systems that were found to be acceptable by BNL and the staff. Therefore, we find the proposed Technical Specifications acceptable.

ENVIRONMENTAL CONSIDERATION

These amendments involve a change in the installation or use of the facilities' components located within the restricted areas as defined in 10 CFR 20. The staff has determined that these 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 these amendments involve no significant hazards consideration and there has been no public comment on such finding. Accordingly, these amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR Sec 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 these amendments.

CONCLUSION

We have 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, and (2) such activities will be conducted in compliance with the Commission's regulations and the issuance of these amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: L. Olshan

Dated: January 21, 1988