

November 2, 1995

Mr. D. L. Farrar  
Manager, Nuclear Regulatory Services  
Commonwealth Edison Company  
Executive Towers West III  
1400 Opus Place, Suite 500  
Downers Grove, IL 60515

SUBJECT: ISSUANCE OF AMENDMENTS - BYRON AND BRAIDWOOD STATIONS  
(TAC NOS. M86475, M86476, M86477 AND M86478)

Dear Mr. Farrar:

The U.S. Nuclear Regulatory Commission (Commission) has issued the enclosed Amendment No. 76 to Facility Operating License No. NPF-37 and Amendment No. 76 to Facility Operating License No. NPF-66 for the Byron Station, Unit Nos. 1 and 2, respectively, and Amendment No. 86 to Facility Operating License No. NPF-72 and Amendment No. 86 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 May 13, 1993, as supplemented by your letters of August 11 and September 20, 1995.

The amendments change technical specification 3/4.6.1.7, Containment Purge Ventilation System, to allow the simultaneous opening of the 8-inch miniflow purge supply and exhaust valves to ensure the containment atmosphere is conducive to human occupants and to maintain their dose as low as reasonably achievable.

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

9511070264 951102  
PDR ADOCK 05000454  
P PDR

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

- Enclosures:
1. Amendment No. 76 to NPF-37
  2. Amendment No. 76 to NPF-66
  3. Amendment No. 86 to NPF-72
  4. Amendment No. 86 to NPF-77
  5. Safety Evaluation

cc w/encl: see next page

DOCUMENT NAME: G:\Braid-By\BB86476.AMD \*See previous concurrence

To receive a copy of this document, indicate in the box: "C" = Copy without enclosures "E" = Copy with enclosures "N" = No copy

OFFICE	LA; PD3-2	RES: PRAB	PM; PD3-2	PM: PD3-2	SCSB	SCCB
NAME	CMOORE	RCLARK	RASSA	GDICK	RLOBEL	*CBERLINGER
DATE	10/13/95	10/16/95	10/16/95	10/16/95		08/23/95
OFFICE	TSB	OGC	D: PD3-2	DISTRIBUTION:		
NAME	*CGRIMES	MARCO	RCAPRA	Docket File	PUBLIC	G. Hill (8) C. Grimes
DATE	08/23/95	10/12/95	10/01/95	PDIII-2 r/f (2)	J. Roe (JWR)	M. Farber, RIII R. Capra
				ACRS	R. Assa	G. Dick R. Lobel
				S. Klementowicz	C. Moore (2)	OGC

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subject to change

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D. L. Farrar  
Commonwealth Edison Company

cc:

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U.S. Nuclear Regulatory Commission  
Braidwood Resident Inspectors Office  
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Chicago, Illinois 60604-3590

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

Byron/Braidwood Power Stations

U.S. Nuclear Regulatory Commission  
Byron/Resident Inspectors Office  
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Byron, Illinois 61010-9750

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Byron Station Manager  
4450 North German Church Road  
Byron, Illinois 61010

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

Commonwealth Edison Company  
Braidwood Station Manager  
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Braceville, Illinois 60407

Chairman, Ogle County Board  
Post Office Box 357  
Oregon, Illinois 61061

Kenneth Graesser, Site Vice President  
Byron Station  
Commonwealth Edison Station  
4450 N. German Church Road  
Byron, Illinois 61010



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. 76  
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 May 13, 1993, as supplemented by letters dated August 11 and September 20, 1995, 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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PDR ADOCK 05000454  
P PDR

(2) Technical Specifications

The Technical Specifications contained in Appendix A as revised through Amendment No. 76 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, Senior 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: November 2, 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. 76  
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 May 13, 1993, as supplemented by letters dated August 11 and September 20, 1995, 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. 76 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, Senior 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: November 2, 1995

ATTACHMENT TO LICENSE AMENDMENT NOS. 76 AND 76

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.

Remove Pages

3/4 6-11

3/4 6-12

B 3/4 6-3

Insert Pages

3/4 6-11

3/4 6-12

B 3/4 6-3

CONTAINMENT SYSTEMS

CONTAINMENT PURGE VENTILATION SYSTEM

LIMITING CONDITION FOR OPERATION

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3.6.1.7 Each containment purge supply and exhaust isolation valves shall be OPERABLE and:

- a. Each 48-inch containment shutdown purge supply and exhaust isolation valve shall be closed and power removed, and
- b. The 8-inch containment purge supply and exhaust isolation valve(s) shall be closed, except when the associated penetration(s) is(are) permitted to be open for PURGING or VENTING operations under administrative control.

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

ACTION:

- a. With a 48-inch containment purge supply and/or exhaust isolation valve open and/or powered, close and remove power to isolate the penetration(s) within 4 hours, otherwise be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- b. With the 8-inch containment purge supply and/or exhaust isolation valve(s) open for reasons other than given in 3.6.1.7b above, close the open 8-inch valve(s) or isolate the penetration(s) within 4 hours, otherwise be in at least HOT STANDBY within the next 6 hours, and in COLD SHUTDOWN within the following 30 hours.
- c. With a containment purge supply and/or exhaust isolation valve(s) having a measured leakage rate in excess of the limits of Specifications 4.6.1.7.3 and/or 4.6.1.7.4, restore the inoperable valve(s) to OPERABLE status within 24 hours, otherwise be in at least HOT STANDBY within the next 6 hours, and in COLD SHUTDOWN within the following 30 hours.



## CONTAINMENT SYSTEMS

### SURVEILLANCE REQUIREMENTS

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4.6.1.7.1 Each 48-inch containment purge supply and exhaust isolation valve(s) shall be verified closed and power removed at least once per 31 days.

4.6.1.7.2 Each 8-inch containment purge supply and exhaust isolation valve shall be verified to be positioned in accordance with Specification 3.6.1.7b at least once per 31 days.

4.6.1.7.3 At least once per 6 months on a STAGGERED TEST BASIS, the inboard and outboard valves with resilient material seals in each closed 48-inch containment purge supply and exhaust penetration shall be demonstrated OPERABLE by verifying that the measured leakage rate is less than  $0.05 L_a$  when pressurized to at least  $P_a$ , 44.4 psig.

4.6.1.7.4 At least once per 3 months, each 8-inch containment purge supply and exhaust isolation valve with resilient material seals shall be demonstrated OPERABLE by verifying that the measured leakage rate is less than  $0.01 L_a$  when pressurized to at least  $P_a$ , 44.4 psig.

## CONTAINMENT SYSTEMS

### BASES

#### CONTAINMENT PURGE VENTILATION SYSTEM (Continued)

be exceeded in the event of an accident during containment PURGING or VENTING operation. The 8-inch containment purge supply and exhaust isolation valves may be opened under conditions delineated in administrative procedures. These procedures specify those circumstances under which it is acceptable to open the valves; for example, pressure control or establishment of respirable air quality prior to containment entry. The procedures specify that: (1) the valves must be capable of closing under accident conditions, (2) that the instrumentation for causing isolation of the valves is functioning, and (3) the effluent release will be monitored and that it will be within regulatory limits.

Leakage integrity tests with a maximum allowable leakage rate for containment purge supply and exhaust supply valves will provide early indication of resilient material seal degradation and will allow opportunity for repair before gross leakage failures could develop. The 0.60 L<sub>a</sub> leakage limit of Specification 3.6.1.2.b. shall not be exceeded when the leakage rates determined by the leakage integrity tests of these valves are added to the previously determined total for all valves and penetrations subject to Type B and C tests.

#### 3/4.6.2 DEPRESSURIZATION AND COOLING SYSTEMS

##### 3/4.6.2.1 CONTAINMENT SPRAY SYSTEM

The OPERABILITY of the Containment Spray System ensures that containment depressurization and cooling capability will be available in the event of a LOCA or steam line break. The pressure reduction and resultant lower containment leakage rate are consistent with the assumptions used in the safety analyses.

The Containment Spray System and the Containment Cooling System are redundant to each other in providing post-accident cooling of the containment atmosphere. However, the Containment Spray System also provides a mechanism for removing iodine from the containment atmosphere and therefore the time requirements for restoring an inoperable Spray System to OPERABLE status have been maintained consistent with that assigned other inoperable ESF equipment.

##### 3/4.6.2.2 SPRAY ADDITIVE SYSTEM

The OPERABILITY of the Spray Additive System ensures that sufficient NaOH is added to the containment spray in the event of a LOCA. The limits on NaOH volume and concentration ensure a pH value of between 8.0 and 11.0 for the solution recirculated within containment after a LOCA. This pH band minimizes the evolution of iodine and minimizes the effect of chloride and caustic stress corrosion on mechanical systems and components. The contained solution volume limit includes an allowance for solution not usable because of tank discharge line location or other physical characteristics. These assumptions are consistent with the iodine removal efficiency assumed in the safety analyses. A spray additive tank level of between 78.6% and 90.3% ensures a volume of greater than or equal to 4000 gallons but less than or equal to 4540 gallons.



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. 68  
License No. NPF-72

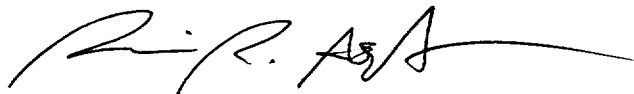
1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Commonwealth Edison Company (the licensee) dated May 13, 1993, as supplemented by letters dated August 11 and September 20, 1995, complies with the standards and requirements of the Atomic Energy 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. 68 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

A handwritten signature in black ink, appearing to read 'Ramin R. Assa', with a long horizontal flourish extending to the right.

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: November 2, 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. 68  
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 May 13, 1993, as supplemented by letters dated August 11 and September 20, 1995, as 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. 68 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: November 2, 1995

ATTACHMENT TO LICENSE AMENDMENT NOS. 68 AND 68

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.

Remove Pages

3/4 6-11

3/4 6-12

B 3/4 6-3

Insert Pages

3/4 6-11

3/4 6-12

B 3/4 6-3

## CONTAINMENT SYSTEMS

### CONTAINMENT PURGE VENTILATION SYSTEM

#### LIMITING CONDITION FOR OPERATION

---

3.6.1.7 Each containment purge supply and exhaust isolation valves shall be OPERABLE and:

- a. Each 48-inch containment shutdown purge supply and exhaust isolation valve shall be closed and power removed, and
- b. The 8-inch containment purge supply and exhaust isolation valve(s) shall be closed, except when the associated penetration(s) is(are) permitted to be open for PURGING or VENTING operations under administrative control.

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

#### ACTION:

- a. With a 48-inch containment purge supply and/or exhaust isolation valve open and/or powered, close and remove power to isolate the penetration(s) within 4 hours, otherwise be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- b. With the 8-inch containment purge supply and/or exhaust isolation valve(s) open for reasons other than given in Specification 3.6.1.7b above, close the open 8-inch valve(s) or isolate the penetration(s) within 4 hours, otherwise be in at least HOT STANDBY within the next 6 hours, and in COLD SHUTDOWN within the following 30 hours.
- c. With a containment purge supply and/or exhaust isolation valve(s) having a measured leakage rate in excess of the limits of Specifications 4.6.1.7.3 and/or 4.6.1.7.4, restore the inoperable valve(s) to OPERABLE status within 24 hours, otherwise be in at least HOT STANDBY within the next 6 hours, and in COLD SHUTDOWN within the following 30 hours.



## CONTAINMENT SYSTEMS

### SURVEILLANCE REQUIREMENTS

---

4.6.1.7.1 Each 48-inch containment purge supply and exhaust isolation valve(s) shall be verified closed and power removed at least once per 31 days.

4.6.1.7.2 Each 8-inch containment purge supply and exhaust isolation valve shall be verified to be positioned in accordance with Specification 3.6.1.7b at least once per 31 days.

4.6.1.7.3 At least once per 6 months on a STAGGERED TEST BASIS, the inboard and outboard valves with resilient material seals in each closed 48-inch containment purge supply and exhaust penetration shall be demonstrated OPERABLE by verifying that the measured leakage rate is less than  $0.05 L_a$  when pressurized to at least  $P_a$ , 44.4 psig.

4.6.1.7.4 At least once per 3 months, each 8-inch containment purge supply and exhaust isolation valve with resilient material seals shall be demonstrated OPERABLE by verifying that the measured leakage rate is less than  $0.01 L_a$  when pressurized to at least  $P_a$ , 44.4 psig.

BASES

CONTAINMENT PURGE VENTILATION SYSTEM (Continued)

be exceeded in the event of an accident during containment PURGING or VENTING operation. The 8-inch containment purge supply and exhaust isolation valves may be opened under conditions delineated in administrative procedures. These procedures specify those circumstances under which it is acceptable to open the valves; for example, pressure control or establishment of respirable air quality prior to containment entry. The procedures specify that: (1) the valves must be capable of closing under accident conditions, (2) that the instrumentation for causing isolation of the valves is functioning, and (3) the effluent release will be monitored and that it will be within regulatory limits.

Leakage integrity tests with a maximum allowable leakage rate for containment purge supply and exhaust supply valves will provide early indication of resilient material seal degradation and will allow opportunity for repair before gross leakage failures could develop. The 0.60 L<sub>a</sub> leakage limit of Specification 3.6.1.2.b. shall not be exceeded when the leakage rates determined by the leakage integrity tests of these valves are added to the previously determined total for all valves and penetrations subject to Type B and C tests.

3/4.6.2 DEPRESSURIZATION AND COOLING SYSTEMS

3/4.6.2.1 CONTAINMENT SPRAY SYSTEM

The OPERABILITY of the Containment Spray System ensures that containment depressurization and cooling capability will be available in the event of a LOCA or steam line break. The pressure reduction and resultant lower containment leakage rate are consistent with the assumptions used in the safety analyses.

The Containment Spray System and the Containment Cooling System are redundant to each other in providing post-accident cooling of the containment atmosphere. However, the Containment Spray System also provides a mechanism for removing iodine from the containment atmosphere and therefore the time requirements for restoring an inoperable Spray System to OPERABLE status have been maintained consistent with that assigned other inoperable ESF equipment.

3/4.6.2.2 SPRAY ADDITIVE SYSTEM

The OPERABILITY of the Spray Additive System ensures that sufficient NaOH is added to the containment spray in the event of a LOCA. The limits on NaOH volume and concentration ensure a pH value of between 8.0 and 11.0 for the solution recirculated within containment after a LOCA. This pH band minimizes the evolution of iodine and minimizes the effect of chloride and caustic stress corrosion on mechanical systems and components. The contained solution volume limit includes an allowance for solution not usable because of tank discharge line location or other physical characteristics. These assumptions are consistent with the iodine removal efficiency assumed in the safety analyses. A spray additive tank level of between 78.6% and 90.3% ensures a volume of greater than or equal to 4000 gallons but less than or equal to 4540 gallons.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 76 TO FACILITY OPERATING LICENSE NO. NPF-37,  
AMENDMENT NO. 76 TO FACILITY OPERATING LICENSE NO. NPF-66,  
AMENDMENT NO. 86 TO FACILITY OPERATING LICENSE NO. NPF-72,  
AND AMENDMENT NO. 86 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 May 13, 1993, as supplemented by letters dated August 11 and September 20, 1995, Commonwealth Edison Company (ComEd, the licensee) submitted proposed changes to the Byron and Braidwood Stations' Technical Specifications (TS) for the containment purge ventilation system to allow the simultaneous opening of the 8-inch miniflow purge supply and exhaust valves (mini-purge), under certain conditions, to allow the mini-purge system to be used for reasons other than containment pressure control. These reasons include the reduction of airborne radioactivity in the containment atmosphere and improved respirable air quality of the containment atmosphere prior to personnel entry into the containment. The supplemental letters provided slightly revised wording to the TSs and Bases, as suggested by the NRC staff, on control over when the valves are opened; similar to the wording in the standard improved TSs for Westinghouse plants. The revised wording does not change the objective of the initial application, the reasons for opening the valves or the time the valves may be open and does not change the staff's initial proposed no significant hazards consideration determination.

2.0 EVALUATION

The licensee has proposed to revise TS 3.6.1.7 to delete the limitation of no more than 1,000 hours of mini-purge operation in a calendar year. The prohibition against the concurrent opening of the mini-purge supply and exhaust lines is also proposed to be deleted. The revised TS will specify that "The 8-inch containment purge supply and exhaust isolation valves(s) shall be closed, except when the associated penetration(s) is(are) permitted to be open for PURGING or VENTING operations under administrative control."

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P PDR

The licensee has also proposed to revise TS 4.6.1.7.2 to replace the requirement to determine the number of hours that the mini-purge valves have been open during the calendar year with a requirement to verify the valve positions at least once per 31 days. This TS will ensure that the mini-purge supply and exhaust valves are in the correct position.

The licensee has proposed these TS changes to permit the opening of the mini-purge supply and exhaust lines concurrently, under certain conditions, to allow the mini-purge system to be effectively used for reasons other than containment pressure control. Concurrent opening of the mini-purge supply and exhaust lines will equalize the mass addition and removal from the containment atmosphere. This will allow containment pressure to remain unchanged during mini-purge system operation. Under these conditions, the mini-purge system can be used effectively for other reasons. These other reasons include reduction of airborne activity, respirable air quality considerations for personnel entry, surveillance tests that require the valve(s) to be open, and other safety-related purposes. For the mini-purge system to be effective in performing these other tasks, the supply and exhaust lines must be open concurrently.

The TS Bases were revised within the frame work of the "Marginal to Safety" program and reflect the philosophy employed in the new standard TSs. Requirements are less prescriptive by providing for administrative control of the valves by the licensee. While the licensee has more flexibility in determining the circumstances under which the valves may be opened, an analysis must be completed to assess the safety significance of any planned valve openings. Discussions of the proposed revised TS Bases were held with the licensee and agreement with the licensee was reached on the necessity for the proposed changes. By letter dated September 20, 1995, the licensee formally submitted the TS Bases changes.

The present Byron and Braidwood TS requirements are the same as those in Section 3.6.1.8 of the Westinghouse standard TSs regarding containment ventilation. The proposed TSs and Bases will be similar to surveillance requirement 3.6.3.2 on containment isolation valves in the Westinghouse Improved TSs (NUREG-1431). The present TSs are not conducive to maintaining containment pressure within a narrow range. Currently, every operation of the mini-purge system affects containment pressure due to the restrictions imposed by Specifications 3/4.6.1.7. With only one mini-purge supply or exhaust line open at one time, the mass addition or removal from the containment atmosphere causes a corresponding increase or decrease in the containment pressure. Since containment pressure must be maintained within a narrow range prescribed by Specifications 3/4.6.1.4, these restrictions effectively limit the use of the mini-purge system to containment pressure control.

As stated previously, the licensee is proposing to revise Limiting Condition for Operation (LCO) 3.6.1.7b which now states that the 8-inch containment purge supply and exhaust isolation valve(s) may be open for up to 1,000 hours during a calendar year, provided no more than one line is open at one time.

With the assistance of Westinghouse, the licensee reevaluated the possible impacts on containment and possible radiological consequences of the proposed TS changes. The reevaluations included the accidents addressed in Chapter 15.6.5 of the Updated Final Safety Analysis Report (UFSAR) such as loss-of-coolant accident (LOCA) and LOCA-related accidents, non-LOCA transients, main steamline break mass and energy releases on the containment analysis and a loss of heat sink event. The reassessment demonstrated that the proposed operation of the 8-inch containment mini-purge system will have no adverse impact upon the licensing basis analyses.

The proposed change does not affect the containment isolation function of the 8-inch containment purge system. The containment isolation signals which automatically close the 8-inch valves are not being altered by this change. The bounding condition evaluated was miniflow purge supply and exhaust lines both open at the beginning of a postulated LOCA. Under these conditions, the containment atmosphere would have a path through the 8-inch containment purge system until the containment isolation valves are closed. The containment isolation valves are closed 7 seconds into the accident (2 seconds for signal generation and 5 seconds for valve operation). The licensee states that each unit's mini-purge supply and exhaust valves are open in the range of 100-200 hours per calendar year while the unit is in MODES 1, 2, 3, and 4 for the purpose of containment pressure control. Containment pressure control will continue to be the primary reason for mini-purge system operation.

The licensee has performed plant specific radiological evaluations of the operation of the mini-purge system for the revised TS. The evaluation concludes that there is an increase in the calculated offsite dose if an accident was initiated during mini-purge system operation with the supply and exhaust lines open concurrently. This is due to an additional release pathway being open from containment. This additional pathway will be isolated by the same isolation signal and within the same time frame as the original release pathway previously analyzed by the licensee.

The licensee calculated the offsite doses (in accordance with NRC Branch Technical Position CSB 6-4 guidelines) that would result if the 8-inch containment purge system was in operation at the initiation of a large break LOCA. The large break LOCA is considered to bound other postulated accidents.

The radiological consequences of the releases through the 8-inch containment purge system at the beginning of a hypothetical LOCA are summarized below.

<u>Station</u>	<u>Site Boundary</u>	<u>Low Population Zone</u>
Byron	Thyroid Dose: 9.1 rem	0.27 rem
	Gamma Whole Body: 0.017 rem	0.0005 rem
Braidwood	Thyroid Dose: 12.3 rem	1.13 rem
	Gamma Whole Body: 0.023 rem	0.0021 rem

The doses are based on the following assumptions:

1. Primary coolant iodine concentration is at the maximum TS value of 60 uCi/g dose equivalent I-131 (pre-existing iodine spike).
2. Purge valves are isolated at 7.62 seconds into the accident.
3. Only 29 percent of the containment free volume is used as the mixing volume.
4. The flow from the containment to the atmosphere during the time the miniflow purge system is open is assumed to go through the supply and exhaust lines and is assumed to increase as a function of containment pressure during the double-ended cold leg (DECL) LOCA.
5. The coolant activity released inside containment is based on the DECL LOCA mass releases.

The above calculated doses, when added to the LOCA dose contributions from containment leakage and from leakage of recirculated ECCS solution, do not add a significant amount to the total. The largest increases are in the site boundary thyroid dose. The Byron total LOCA dose increased from 115 rem to 124 rem and the Braidwood total LOCA dose increased from 155 rem to 167 rem. The dose increases represent a small fraction of the previously calculated dose totals. The increased doses remain within the limits of 10 CFR Part 100.

Based on the above information, the analyzed consequences of postulated accidents remain within staff acceptance criteria and are, therefore, acceptable.

We have reviewed the proposed TS changes to the Byron and Braidwood containment purge ventilation system to allow the simultaneous opening of the 8-inch miniflow purge supply and exhaust valves for specific applications. We have determined that the proposed changes to the TSs are acceptable.

### 3.0 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.

### 4.0 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 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 effluent 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 48379). 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.

#### 5.0 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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