December 8, 1987

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

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

Dear Mr. Butterfield:

The Commission has issued the enclosed Amendment No. 13 to Facility Operating License No. NPF-37 and Amendment No. 13 to Facility Operating License No. NPF-66 for the Byron Station, Unit Nos. 1 and 2, respectively and Amendment No. 3 to Facility Operating License No. NPF-72 for Braidwood Station, Unit No. 1. This amendment also applies to the Technical Specifications for Braidwood Station, Unit No. 2, although Unit 1 does not have an operating license. Braidwood Station, Units 1 and 2, have common Technical Specifications. The amendments consist of changes to the Technical Specifications in response to your application transmitted by letter dated September 30, 1987 supplemented October 30, 1987.

These amendments revise the Technical Specifications to allow deletion of the reactor trip on turbine trip below 30 percent power.

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. 13 to NPF-37
2. Amendment No. 13 to NPF-66
3. Amendment No. 3 to NPF-72
4. Safety Evaluation

cc: w/enclosures
See next page

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

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COMMONWEALTH EDISON COMPANY

DOCKET NO. STN 50-454

BYRON STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 13
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 30, 1987, supplemented October 30, 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:

(2) <u>Technical Specifications</u>

The Technical Specifications contained in Appendix A as revised through Amendment No. 13 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

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: December 8, 1987

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. 13
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 30, 1987, supplemented October 30, 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. 13 and revised by Attachment 2 to NPF-60, and the Environmental 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

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: December 8, 1987

ATTACHMENT TO LICENSE AMENDMENT NOS. 13 AND 13

FACILITY OPERATING LICENSE NOS. NPF-37 AND NPF-66

DOCKET NOS. STN-50-454 AND STN 50-455

Revise Appendix A as follows:

Remove Pages	Insert Pages
3/4 3-3	3/4 3-3
3/4 3-8	3/4 3-8
3/4 3-10	3/4 3-10
3/4 3-12	3/4 3-12
B 2-8	B 2-8
B 2-9	B 2-9

TABLE 3.3-1 (Continued)

REACTOR TRIP SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
10. Pressurizer Pressure-High	4	2	3	1, 2	6#
11. Pressurizer Water Level-High (Above P-7)	3	2	2	1	6#
12. Reactor Coolant Flow-Low					
a. Single Loop (Above P-8)	3/loop	2/loop in any operating loop	2/loop in each operating loop	1	6#
b. Two Loops (Above P-7 and below P-8)	3/loop	2/loop in two operating loops	2/loop in each operating loop	1	6#
13. Steam Generator Water Level-Low-Low	4/stm. gen.	2/stm. gen. in any operating stm. gen.	3/stm. gen. each operating stm. gen.	1, 2	6#***
14. Undervoltage-Reactor Coolant Pumps (Above P-7)	4-1/bus	2	3	1	6#***
15. Underfrequency-Reactor Coolant Pumps (Above P-7)	4-1/bus	2	3	1	6#
16. Turbine Trip (Above P-7 or P-8)****					
a. Emergency Trip Header Pressure	3/Train	2/Train	2/Train	1	6#
b. Turbine Throttle Valve Closure	4	4	1	1	6#

****A Reactor trip on Turbine trip is enabled above P-7 (10%) until the modification is implemented which enables Reactor trip on Turbine trip above P-8 (30%).

TABLE 3.3-2 (Continued)

REACTOR TRIP SYSTEM INSTRUMENTATION RESPONSE TIMES

FUNCTIONAL UNIT	RESPONSE TIME
12. Low Reactor Coolant Flow - Low	
a. Single Loop (Above P-8)	$\leq$1.0 second
b. Two Loops (Above P-7 and below P-8)	$\leq$1.0 second
13. Steam Generator Water Level-Low-Low	$\leq$2.0 seconds
14. Undervoltage-Reactor Coolant Pumps (Above P-7)	$\leq$1.5 seconds
15. Underfrequency-Reactor Coolant Pumps (Above P-7)	$\leq$0.6 second
16. Turbine Trip (Above P-7 or P-8)**	
a. Emergency Trip Header Pressure	N.A.
b. Turbine Throttle Valve Closure	N.A.
17. Safety Injection Input from ESF	N.A.
18. Reactor Coolant Pump Breaker Position Trip (Above P-7)	N.A.
19. Reactor Trip System Interlocks	N.A.
20. Reactor Trip Breakers	N.A.
21. Automatic Trip and Interlock Logic	N.A.

**A Reactor trip on Turbine trip is enabled above P-7 (10%) until the modification is implemented which enables Reactor trip on Turbine trip above P-8 (30%).

TABLE 4.3-1 (Continued)

REACTOR TRIP SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	ANALOG CHANNEL OPERATIONAL TEST	TRIP ACTUATING DEVICE OPERATIONAL TEST	ACTUATION LOGIC TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
12. Reactor Coolant Flow-Low	S	R#	Q	N.A.	N.A.	1
13. Steam Generator Water Level-Low-Low	S	R#	Q**	N.A.	N.A.	1, 2
14. Undervoltage-Reactor Coolant Pumps (Above P-7)	N.A.	R	N.A.	Q**	N.A.	1
15. Underfrequency-Reactor Coolant Pumps (Above P-7)	N.A.	R	N.A.	Q	N.A.	1
16. Turbine Trip (Above P-7 or P-8)***						
a. Emergency Trip Header Pressure	N.A.	R	N.A.	S/U(1, 10)	N.A.	1
b. Turbine Throttle Valve Closure	N.A.	R	N.A.	S/U(1, 10)	N.A.	1
17. Safety Injection Input from ESF	N.A.	N.A.	N.A.	R	N.A.	1, 2
18. Reactor Coolant Pump Breaker Position Trip (Above P-7)	N.A.	N.A.	N.A.	R	N.A.	1
19. Reactor Trip System Interlocks						
a. Intermediate Range Neutron Flux, P-6	N.A.	R(4)#	Q	N.A.	N.A.	2##
b. Low Power Reactor Trips Block, P-7	N.A.	R(4)#	Q (8)	N.A.	N.A.	1
c. Power Range Neutron Flux, P-8	N.A.	R(4)#	Q (8)	N.A.	N.A.	1

TABLE 4.3-1 (Continued)

TABLE NOTATIONS

*With the Reactor Trip System breakers closed and the Control Rod Drive System capable of rod withdrawal.

**These channels also provide inputs to ESFAS. The Operational Test Frequency for these channels in Table 4.3-2 is more conservative and, therefore, controlling.

***A Reactor trip on Turbine trip is enabled above P-7 (10%) until the modification is implemented which enables Reactor trip on Turbine trip above P-8 (30%).

#The specified 18 month interval may be extended to 32 months for Cycle 1 only.

##Below P-6 (Intermediate Range Neutron Flux Interlock) Setpoint.

###Below P-10 (Low Setpoint Power Range Neutron Flux Interlock) Setpoint.

(1) If not performed in previous 7 days.

(2) Comparison of calorimetric to excore power indication above 15% of RATED THERMAL POWER. Adjust excore channel gains consistent with calorimetric power if absolute difference is greater than 2%. The provisions of Specification 4.0.4 are not applicable for entry into MODE 2 or 1.

(3) Single point comparison of incore to excore AXIAL FLUX DIFFERENCE above 15% of RATED THERMAL POWER. Recalibrate if the absolute difference is greater than or equal to 3%. The provisions of Specification 4.0.4 are not applicable for entry into MODE 2 or 1.

(4) Neutron detectors may be excluded from CHANNEL CALIBRATION.

(5a) Initial plateau curves shall be measured for each detector. Subsequent plateau curves shall be obtained, evaluated and compared to the initial curves. For the Intermediate Range and Power Range Neutron Flux channels the provisions of Specification 4.0.4 are not applicable for entry into MODE 2 or 1.

(5b) With the high voltage setting varied as recommended by the manufacturer, an initial discriminator bias curve shall be measured for each detector. Subsequent discriminator bias curves shall be obtained, evaluated and compared to the initial curves.

(6) Incore - Excore Calibration, above 75% of RATED THERMAL POWER. The provisions of Specification 4.0.4 are not applicable for entry into MODE 2 or 1.

(7) Each train shall be tested at least every 62 days on a STAGGERED TEST BASIS.

(8) With power greater than or equal to the interlock Setpoint the required ANALOG CHANNEL OPERATIONAL TEST shall consist of verifying that the interlock is in the required state by observing the permissive annunciator window.

(9) Surveillance in MODES 3*, 4*, and 5* shall also include verification that permissives P-6 and P-10 are in their required state for existing plant conditions by observation of the permissive annunciator window. Surveillance shall include verification of the Boron Dilution Alarm Setpoint of less than or equal to an increase of twice the count rate within a 10-minute period.

Turbine Trip#

A Turbine trip initiates a Reactor trip. On decreasing power the Turbine trip is automatically blocked by P-7 or P-8 (a power level of approximately 10% (P-7) or 30% (P-8) of RATED THERMAL POWER with a turbine impulse chamber pressure at approximately 10% (P-7) or 30% (P-8) of full power equivalent); and on increasing power, reinstated automatically by P-7 or P-8.

Safety Injection Input from ESF

If a Reactor trip has not already been generated by the Reactor Trip System instrumentation, the ESF automatic actuation logic channels will initiate a Reactor trip upon any signal which initiates a Safety Injection. The ESF instrumentation channels which initiate a Safety Injection signal are shown in Table 3.3-3.

Reactor Coolant Pump Breaker Position Trip

The Reactor Coolant Pump Breaker Position trips are anticipatory trips which provide core protection against DNB. The Open/Close Position trips assure a Reactor trip signal is generated before the Low Flow Trip Setpoint is reached. No credit was taken in the accident analyses for operation of these trips. Their functional capability at the open/close position settings is required to enhance the overall reliability of the Reactor Trip System. Above P-7 (a power level of approximately 10% of RATED THERMAL POWER or a turbine impulse chamber pressure at approximately 10% of full power equivalent) an automatic Reactor trip will occur if more than one reactor coolant pump breaker is opened. Below P-7 the trip function is automatically blocked.

#A Reactor trip on Turbine trip is enabled above P-7 (10%) until the modification is implemented which enables Reactor trip on Turbine trip above P-8 (30%).

Reactor Trip System Interlocks

The Reactor Trip System Interlocks perform the following functions:

P-6 On increasing power, P-6 allows the manual block of the Source Range Reactor trip (i.e., prevents premature block of Source Range trip), provides an automatic backup block for Source Range Neutron Flux doubling, and the manual block that de-energizes the high voltage to the Source Range detectors. On decreasing power, Source Range Level trips and Neutron Flux doubling circuits are automatically reactivated and high voltage restored.

P-7# On increasing power, P-7 automatically enables Reactor trips on low flow in more than one reactor coolant loop, more than one reactor coolant pump breaker open, reactor coolant pump bus undervoltage and underfrequency, Turbine trip, pressurizer low pressure and pressurizer high level. On decreasing power, the above listed trips are automatically blocked.

P-8# On increasing power, P-8 automatically enables Reactor trips on low flow in one or more reactor coolant loops and Turbine trip. On decreasing power, the P-8 automatically blocks the single loop low flow trip and Turbine trip.

P-10 On increasing power, P-10 allows the manual block of the Intermediate Range Reactor trip and the Low Setpoint Power Range Reactor trip; and automatically blocks the Source Range Reactor trip and provides an automatic backup function to de-energize the Source Range high voltage power. On decreasing power, the Intermediate Range Reactor trip and the Low Setpoint Power Range Reactor trip are automatically reactivated and Source Range high voltage to the detectors is restored if power decreases below the P-6 setpoint. Provides input to P-7.

P-13 Provides input to P-7.

#A Reactor trip on Turbine trip is enabled above P-7 (10%) until the modification is implemented which enables Reactor trip on Turbine trip above P-8 (30%).

COMMONWEALTH EDISON COMPANY

DOCKET NO. STN 50-456

BRAIDWOOD STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 3
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 30, 1987, supplemented October 30, 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. 3 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

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: December 8, 1987

ATTACHMENT TO LICENSE AMENDMENT NO. 3

FACILITY OPERATING LICENSE NO. NPF-72

DOCKET NO. STN-50-456

Revise Appendix A as follows:

Remove Pages	Insert Pages
3/4 3-3	3/4 3-3
3/4 3-8	3/4 3-8
3/4 3-10	3/4 3-10
B 2-8	B 2-8
B 2-9	B 2-9

TABLE 3.3-1 (Continued)

REACTOR TRIP SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
10. Pressurizer Pressure-High	4	2	3	1, 2	6#
11. Pressurizer Water Level-High (Above P-7)	3	2	2	1	6#
12. Reactor Coolant Flow-Low					
a. Single Loop (Above P-8)	3/loop	2/loop in any operating loop	2/loop in each operating loop	1	6#
b. Two Loops (Above P-7 and below P-8)	3/loop	2/loop in two operating loops	2/loop in each operating loop	1	6#
13. Steam Generator Water Level-Low-Low	4/stm. gen.	2/stm. gen. in any operating stm. gen.	3/stm. gen. each operating stm. gen.	1, 2	6#***
14. Undervoltage-Reactor Coolant Pumps (Above P-7)	4-1/bus	2	3	1	6#***
15. Underfrequency-Reactor Coolant Pumps (Above P-7)	4-1/bus	2	3	1	6#
16. Turbine Trip (Above P-7 or P-8)****					
a. Emergency Trip Header Pressure	3/Train	2/Train	2/Train	1	6#
b. Turbine Throttle Valve Closure	4	4	1	1	6#

****A Reactor trip on Turbine trip is enabled above P-7 (10%) until the modification is implemented which enables Reactor trip on Turbine trip above P-8 (30%).

TABLE 3.3-2 (Continued)

REACTOR TRIP SYSTEM INSTRUMENTATION RESPONSE TIMES

FUNCTIONAL UNIT	RESPONSE TIME
12. Low Reactor Coolant Flow - Low	
a. Single Loop (Above P-8)	$\leq$1.0 second
b. Two Loops (Above P-7 and below P-8)	$\leq$1.0 second
13. Steam Generator Water Level-Low-Low	$\leq$2.0 seconds
14. Undervoltage-Reactor Coolant Pumps (Above P-7)	$\leq$1.5 seconds
15. Underfrequency-Reactor Coolant Pumps (Above P-7)	$\leq$0.6 second
16. Turbine Trip (Above P-7 or P-8)**	
a. Emergency Trip Header Pressure	N.A.
b. Turbine Throttle Valve Closure	N.A.
17. Safety Injection Input from ESF	N.A.
18. Reactor Coolant Pump Breaker Position Trip (Above P-7)	N.A.
19. Reactor Trip System Interlocks	N.A.
20. Reactor Trip Breakers	N.A.
21. Automatic Trip and Interlock Logic	N.A.

**A Reactor trip on Turbine trip is enabled above P-7 (10%) until the modification is implemented which enables Reactor trip on Turbine trip above P-8 (30%).

TABLE 4.3-1 (Continued)

REACTOR TRIP SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	ANALOG CHANNEL OPERATIONAL TEST	TRIP ACTUATING DEVICE OPERATIONAL TEST	ACTUATION LOGIC TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
12. Reactor Coolant Flow-Low	S	R#	Q	N.A.	N.A.	1
13. Steam Generator Water Level-Low-Low	S	R#	Q**	N.A.	N.A.	1, 2
14. Undervoltage-Reactor Coolant Pumps (Above P-7)	N.A.	R	N.A.	Q**	N.A.	1
15. Underfrequency-Reactor Coolant Pumps (Above P-7)	N.A.	R	N.A.	Q	N.A.	1
16. Turbine Trip (Above P-7 or P-8)***						
a. Emergency Trip Header Pressure	N.A.	R	N.A.	S/U(1, 10)	N.A.	1
b. Turbine Throttle Valve Closure	N.A.	R	N.A.	S/U(1, 10)	N.A.	1
17. Safety Injection Input from ESF	N.A.	N.A.	N.A.	R	N.A.	1, 2
18. Reactor Coolant Pump Breaker Position Trip (Above P-7)	N.A.	N.A.	N.A.	R	N.A.	1
19. Reactor Trip System Interlocks						
a. Intermediate Range Neutron Flux, P-6	N.A.	R(4)#	Q	N.A.	N.A.	2##
b. Low Power Reactor Trips Block, P-7	N.A.	R(4)#	Q (8)	N.A.	N.A.	1
c. Power Range Neutron Flux, P-8	N.A.	R(4)#	Q (8)	N.A.	N.A.	1

***A Reactor Trip on Turbine trip is enabled above P-7 (10%) until modification is implemented which enables Reactor trip on Turbine trip above P-8 (30%).

Turbine Trip#

A Turbine trip initiates a Reactor trip. On decreasing power the Turbine trip is automatically blocked by P-7 or P-8 (a power level of approximately 10% (P-7) or 30% (P-8) of RATED THERMAL POWER with a turbine impulse chamber pressure at approximately 10% (P-7) or 30% (P-8) of full power equivalent); and on increasing power, reinstated automatically by P-7 or P-8.

Safety Injection Input from ESF

If a Reactor trip has not already been generated by the Reactor Trip System instrumentation, the ESF automatic actuation logic channels will initiate a Reactor trip upon any signal which initiates a Safety Injection. The ESF instrumentation channels which initiate a Safety Injection signal are shown in Table 3.3-3.

Reactor Coolant Pump Breaker Position Trip

The Reactor Coolant Pump Breaker Position trips are anticipatory trips which provide core protection against DNB. The Open/Close Position trips assure a Reactor trip signal is generated before the Low Flow Trip Setpoint is reached. No credit was taken in the accident analyses for operation of these trips. Their functional capability at the open/close position settings is required to enhance the overall reliability of the Reactor Trip System. Above P-7 (a power level of approximately 10% of RATED THERMAL POWER or a turbine impulse chamber pressure at approximately 10% of full power equivalent) an automatic Reactor trip will occur if more than one reactor coolant pump breaker is opened. Below P-7 the trip function is automatically blocked.

#A Reactor trip on Turbine trip is enabled above P-7 (10)% until the modification is implemented which enables Reactor trip on Turbine trip above P-8 (30%).

Reactor Trip System Interlocks

The Reactor Trip System Interlocks perform the following functions:

P-6 On increasing power, P-6 allows the manual block of the Source Range Reactor trip (i.e., prevents premature block of Source Range trip), provides an automatic backup block for Source Range Neutron Flux doubling, and the manual block that de-energizes the high voltage to the Source Range detectors. On decreasing power, Source Range Level trips and Neutron Flux doubling circuits are automatically reactivated and high voltage restored.

P-7# On increasing power, P-7 automatically enables Reactor trips on low flow in more than one reactor coolant loop, more than one reactor coolant pump breaker open, reactor coolant pump bus undervoltage and underfrequency, Turbine trip, pressurizer low pressure and pressurizer high level. On decreasing power, the above listed trips are automatically blocked.

P-8# On increasing power, P-8 automatically enables Reactor trips on low flow in one or more reactor coolant loops and Turbine trip. On decreasing power, the P-8 automatically blocks the single loop low flow trip and Turbine trip.

P-10 On increasing power, P-10 allows the manual block of the Intermediate Range Reactor trip and the Low Setpoint Power Range Reactor trip; and automatically blocks the Source Range Reactor trip and provides an automatic backup function to de-energize the Source Range high voltage power. On decreasing power, the Intermediate Range Reactor trip and the Low Setpoint Power Range Reactor trip are automatically reactivated and Source Range high voltage to the detectors is restored if power decreases below the P-6 setpoint. Provides input to P-7.

P-13 Provides input to P-7.

#A Reactor trip on Turbine trip is enabled above P-7 (10%) until the modification is implemented which enables Reactor trip on Turbine trip above P-8 (30%).

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 13 TO FACILITY OPERATING LICENSE NO. NPF-37,

AMENDMENT NO. 13 TO FACILITY OPERATING LICENSE NO. NPF-66

AND AMENDMENT NO. 3 TO FACILITY OPERATING LICENSE NO. 72

COMMONWEALTH EDISON COMPANY

BYRON STATION, UNITS 1 AND 2

BRAIDWOOD STATION, UNIT 1

DOCKET NOS. STN 50-454, STN 50-455 AND STN 50-456

1.0 INTRODUCTION

By letter dated September 30, 1987, Commonwealth Edison company (the licensee) submitted a request for revision of the Technical Specifications for Byron Station, Units 1 and 2, and Braidwood Station, Units 1 and 2. The proposed revision would delete the reactor trip on turbine trip below 30 percent power. By letter dated October 30, 1987 the licensee provided additional clarifying information.

2.0 EVALUATION

The Byron and Braidwood units are designed to accommodate a 50 percent load rejection. Thus, a reactor trip on turbine trip should not be required below 50 percent power. The proposed change will delete the reactor trip on turbine trip below 30 percent power, which is within the design capability of the units.

This modification should reduce the number of unnecessary reactor trips during startup, shutdown and low power operations. Reducing the number of unnecessary reactor trips will reduce the transients imposed on the plant and the challenges to safety systems and increase plant availability. Many other Westinghouse plants across the nation have instituted a similar modification.

The reactor trip on turbine trip is an anticipatory trip and no credit is taken for this trip in the FSAR Chapter 15 accident analyses. Thus, revising the setpoint for this trip to 30 percent power will have no impact on the accident analysis.

The staff asked the licensee to address NUREG-0737, Item II.K.3.10, the concern regarding the potential increase in the probability of a small break loss-of-coolant accident (LOCA) resulting from a stuck-open pressurizer power operated relief valve (PORV) when this modification is implemented. By letter dated October 30, 1987, the licensee addressed this concern.

The letter presents the results of a best-estimate analytical study which show that no additional pressurizer PORV challenges are expected due to implementation of the modification that deletes reactor trip on turbine trip below 30 percent power. Therefore, the staff concludes that the proposed changes are acceptable.

3.0 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 Part 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 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.

4.0 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: December 8, 1987