



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

May 17, 2001

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

SUBJECT: BYRON STATION, UNITS 1 AND 2, AND BRAIDWOOD STATION, UNITS 1
AND 2 - REQUEST FOR TECHNICAL SPECIFICATIONS CHANGE TO
DELETE THE POWER RANGE NEUTRON FLUX HIGH NEGATIVE RATE TRIP
FUNCTION (TAC NOS. MB0580, MB0581, MB0582 AND MB0583)

Dear Mr. Kingsley:

The U.S. Nuclear Regulatory Commission (Commission) has issued the enclosed Amendment No. 120 to Facility Operating License No. NPF-37 and Amendment No. 120 to Facility Operating License No. NPF-66 for the Byron Station, Units 1 and 2, respectively, and Amendment No. 114 to Facility Operating License No. NPF-72 and Amendment No. 114 to Facility Operating License No. NPF-77 for the Braidwood Station, Units 1 and 2, respectively. The amendments are in response to Commonwealth Edison Company's (ComEd) application dated November 13, 2000.

Subsequent to the date of the original amendment request, ComEd was merged into Exelon Generation Company, LLC (Exelon). By letter dated February 7, 2001, Exelon informed the NRC that it assumed responsibility for all pending NRC actions that were requested by ComEd.

The proposed changes revise TS 3.3.1, "Reactor Trip System (RTS) Instrumentation," to delete the "Power Range Neutron Flux High Negative Rate" Trip Function 3.b from Table 3.3.1-1, "Reactor Trip System Instrumentation." The proposed changes are consistent with the methodology presented in the Westinghouse Topical Report WCAP-11394-P-A, "Methodology for the Analysis of the Dropped Rod Event," Reference 1, as accepted by the NRC.

Mr. O. Kingsley

-2-

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

Sincerely,

/RA/

Mahesh Chawla, Project Manager, Section 2
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

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

Enclosures: 1. Amendment No. 120 to NPF-37
2. Amendment No. 120 to NPF-66
3. Amendment No. 114 to NPF-72
4. Amendment No. 114 to NPF-77
5. Safety Evaluation

cc w/encs: See next page

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*See previous concurrence

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NRR-058

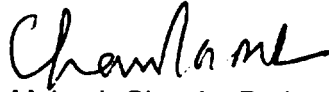
5/16/01

Mr. O. Kingsley

-2-

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,



Mahesh Chawla, Project Manager, Section 2
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

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

Enclosures: 1. Amendment No. 120 to NPF-37
2. Amendment No. 120 to NPF-66
3. Amendment No. 114 to NPF-72
4. Amendment No. 114 to NPF-77
5. Safety Evaluation

cc w/encls: See next page

O. Kingsley
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cc:

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- 2 -

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

EXELON GENERATION COMPANY, LLC

DOCKET NO. STN 50-454

BYRON STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 120
License No. NPF-37

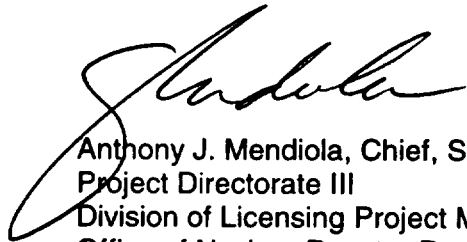
1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by the licensee dated November 13, 2000, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-37 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A as revised through Amendment No. 120 and the Environmental Protection Plan contained in Appendix B, both of which are attached hereto, are hereby incorporated into this license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

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

FOR THE NUCLEAR REGULATORY COMMISSION



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

Attachment:
Changes to the Technical
Specifications

Date of Issuance: May 17, 2001



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

EXELON GENERATION COMPANY, LLC

DOCKET NO. STN 50-455

BYRON STATION, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 120
License No. NPF-66

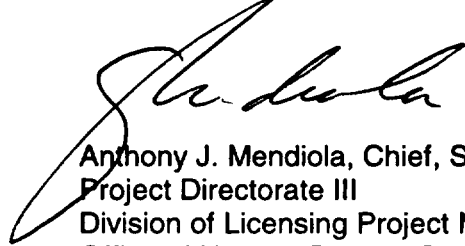
1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by the licensee dated November 13, 2000, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-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. 120 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. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

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

FOR THE NUCLEAR REGULATORY COMMISSION

A handwritten signature in black ink, appearing to read 'A. Mendiola', is written over the typed name and title.

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

Attachment:
Changes to the Technical
Specifications

Date of Issuance: May 17, 2001

ATTACHMENT TO LICENSE AMENDMENT NOS. 120 AND 120

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

3.3.1-14

Insert Pages

3.3.1-14

Table 3.3.1-1 (page 1 of 6)
Reactor Trip System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Manual Reactor Trip	1,2	2	B	SR 3.3.1.13	NA
	3(a), 4(a), 5(a)	2	C	SR 3.3.1.13	NA
2. Power Range Neutron Flux					
a. High	1,2	4	D	SR 3.3.1.1 SR 3.3.1.2 SR 3.3.1.7 SR 3.3.1.11 SR 3.3.1.15	≤ 110.8% RTP
b. Low	1(b), 2	4	E	SR 3.3.1.1 SR 3.3.1.8 SR 3.3.1.11 SR 3.3.1.15	≤ 27.0% RTP
3. Power Range Neutron Flux - High Positive Rate	1,2	4	E	SR 3.3.1.7 SR 3.3.1.11	≤ 6.2% RTP with time constant ≥ 2 sec
4. Intermediate Range Neutron Flux	1(b), 2(c)	2	F,G	SR 3.3.1.1 SR 3.3.1.8 SR 3.3.1.11	≤ 30.0% RTP
5. Source Range Neutron Flux	2(d)	2	H,I	SR 3.3.1.1 SR 3.3.1.8 SR 3.3.1.11 SR 3.3.1.15	≤ 1.42 E5 cps
	3(a), 4(a), 5(a)	2	I,J	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.11 SR 3.3.1.15	≤ 1.42 E5 cps

(continued)

- (a) With Rod Control System capable of rod withdrawal or one or more rods not fully inserted.
- (b) Below the P-10 (Power Range Neutron Flux) interlock.
- (c) Above the P-6 (Source Range Block Permissive) interlock.
- (d) Below the P-6 (Source Range Block Permissive) interlock.



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

EXELON GENERATION COMPANY, LLC

DOCKET NO. STN 50-456

BRAIDWOOD STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 114
License No. NPF-72

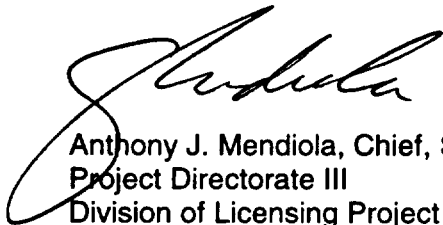
1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by the licensee dated November 13, 2000, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-72 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A as revised through Amendment No. 114 and the Environmental Protection Plan contained in Appendix B, both of which are attached hereto, are hereby incorporated into this license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

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

FOR THE NUCLEAR REGULATORY COMMISSION



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

Attachment:
Changes to the Technical
Specifications

Date of Issuance: May 17, 2001



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

EXELON GENERATION COMPANY, LLC

DOCKET NO. STN 50-457

BRAIDWOOD STATION, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 114
License No. NPF-77

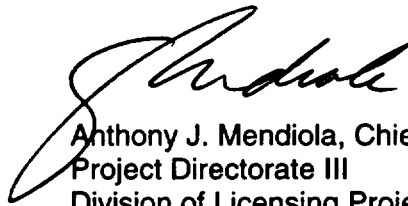
1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by the licensee dated November 13, 2000, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-77 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A as revised through Amendment No. 114 and the Environmental Protection Plan contained in Appendix B, both of which were attached to License No. NPF-72, dated July 2, 1987, are hereby incorporated into this license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

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

FOR THE NUCLEAR REGULATORY COMMISSION



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

Attachment:
Changes to the Technical
Specifications

Date of Issuance: May 17, 2001

ATTACHMENT TO LICENSE AMENDMENT NOS. 114 AND 114

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

3.3.1-14

Insert Pages

3.3.1-14

Table 3.3.1-1 (page 1 of 6)
Reactor Trip System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Manual Reactor Trip	1.2	2	B	SR 3.3.1.13	NA
	3(a), 4(a), 5(a)	2	C	SR 3.3.1.13	NA
2. Power Range Neutron Flux					
a. High	1.2	4	D	SR 3.3.1.1 SR 3.3.1.2 SR 3.3.1.7 SR 3.3.1.11 SR 3.3.1.15	≤ 110.8% RTP
b. Low	1(b), 2	4	E	SR 3.3.1.1 SR 3.3.1.8 SR 3.3.1.11 SR 3.3.1.15	≤ 27.0% RTP
3. Power Range Neutron Flux - High Positive Rate	1.2	4	E	SR 3.3.1.7 SR 3.3.1.11	≤ 6.2% RTP with time constant ≥ 2 sec
4. Intermediate Range Neutron Flux	1(b), 2(c)	2	F, G	SR 3.3.1.1 SR 3.3.1.8 SR 3.3.1.11	≤ 30.0% RTP
5. Source Range Neutron Flux	2(d)	2	H, I	SR 3.3.1.1 SR 3.3.1.8 SR 3.3.1.11 SR 3.3.1.15	≤ 1.42 E5 cps
	3(a), 4(a), 5(a)	2	I, J	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.11 SR 3.3.1.15	≤ 1.42 E5 cps

(continued)

- (a) With Rod Control System capable of rod withdrawal or one or more rods not fully inserted.
- (b) Below the P-10 (Power Range Neutron Flux) interlock.
- (c) Above the P-6 (Source Range Block Permissive) interlock.
- (d) Below the P-6 (Source Range Block Permissive) interlock.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 120 TO FACILITY OPERATING LICENSE NO. NPF-37,
AMENDMENT NO. 120 TO FACILITY OPERATING LICENSE NO. NPF-66,
AMENDMENT NO. 114 TO FACILITY OPERATING LICENSE NO. NPF-72,
AND AMENDMENT NO. 114 TO FACILITY OPERATING LICENSE NO. NPF-77
EXELON GENERATION 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

1.0 INTRODUCTION

By letter dated November 13, 2000, the Commonwealth Edison Company (ComEd) submitted a request for changes to the Byron Station, Units 1 and 2, and the Braidwood Station, Units 1 and 2, technical specifications (TSs). The requested changes would allow the deletion of the power range neutron flux high negative rate reactor trip function based on the analysis provided in Westinghouse Topical Report WCAP-11394-P-A, "Methodology for the Analysis of the Dropped Rod Event," (Reference 1).

The proposed changes revise Technical Specification (TS) 3.3.1, "Reactor Trip System (RTS) Instrumentation," to delete the "Power Range Neutron Flux High Negative Rate" Trip (i.e., Negative Flux Rate Trip (NFRT)) Function 3.b from Table 3.1.1-1, "Reactor Trip System Instrumentation." Because the "Power Range Neutron Flux High Negative Rate" Trip Function 3.b is being deleted from TS Table 3.3.1-1, the existing "Power Range Neutron Flux High Positive Rate" Trip Function 3.a is being re-designated as Function 3. The proposed changes would eliminate an unnecessary protective function and thereby reduce the potential for a transient which could challenge safe plant operation due to spurious trip signals.

Subsequent to the date of the original amendment request, ComEd was merged into Exelon Generation Company, LLC (Exelon or licensee). By letter dated February 7, 2001, Exelon informed the NRC that it assumed responsibility for all pending NRC actions that were requested by ComEd.

2.0 BACKGROUND

The original design basis for the NFRT function was to mitigate the consequences of one or more dropped rod cluster control assemblies (RCCAs). At high power levels, in the event of one or more dropped RCCAs, the reactor trip system (RTS) would detect the rapidly decreasing neutron flux (i.e., high negative flux rate) due to the dropped RCCAs and would trip the reactor based on "power range neutron flux high negative rate reactor trip function." The reactor trip would end the transient and assure the departure from nucleate boiling (DNB) limits were maintained. At high power levels, a multiple rod drop accident could cause local flux peaking that would result in an unconservative local departure from nucleate boiling ratio (DNBR). DNBR is defined as the ratio of the heat flux required to cause the DNB at a particular location in the core to the local heat flux. The DNBR is indicative of the margin to DNB. No credit is taken for the operation of this function for those rod drop accidents in which the local DNBRs will be greater than the limit.

The licensee cited a precedent that the similar change for deletion of the power range neutron flux high negative rate reactor trip function was approved by the NRC for the Watts Bar Nuclear Plant Unit 1 on January 15, 1999 (Reference 3).

Section 182a of the Atomic Energy Act requires applicants for nuclear power plant operating licenses to state the TSs to be included as part of the license. The Commission's regulatory requirements related to the content of the TSs are set forth in 10 CFR 50.36. That regulation requires the TSs to include items in five specific categories, including: (1) safety limits, limiting safety system settings, and limiting control settings; (2) limiting conditions for operation; (3) surveillance requirements; (4) design features; and (5) administrative controls. However, the regulation does not specify the particular requirements to be included in a plant's TSs.

Under 10 CFR 50.36(c)(2)(ii), a limiting condition for operation must be included in TSs for any item meeting one or more of the following four criteria:

1. installed instrumentation that is used to detect, and indicate in the control room a significant abnormal degradation of the reactor coolant pressure boundary;
2. a process variable, design feature, or operating restriction that is an initial condition of a design basis accident or transient analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier;
3. a structure, system, or component that is part of the primary success path and which functions or actuates to mitigate a design basis accident or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier; and
4. a structure, system, or component which operating experience or probabilistic risk assessment has shown to be significant to public health and safety.

As a result, existing TS requirements that fall within or satisfy any of the criteria in 10 CFR 50.36 must be retained in the TSs, while those TS requirements that do not fall within or satisfy these criteria may be relocated to other licensee controlled documents.

3.0 EVALUATION

The original design-basis for the negative flux rate trip function was to mitigate the consequences of a dropped RCCAs event. The intent was that in the event of a dropped RCCA or RCCA bank, the reactor protection system would detect the rapidly decreasing neutron flux due to the dropped RCCAs and trip the reactor, thus ending the transient and assuring that DNB limits were maintained.

In January 1982, Westinghouse submitted a Topical Report WCAP-10297-P, "Dropped Rod Methodology for Negative Flux Rate Trip Plants," which was approved by NRC staff in June 1983 (Reference 4). This report documented a new methodology for the event and concluded that the negative flux rate trip was required only when a dropped RCCA or RCCA bank exceeded a specific reactivity worth threshold value. Dropped RCCAs that had a reactivity worth below the threshold value, would not require a reactor trip to maintain DNB limits. The NRC approved this methodology in Reference 5.

By letter dated May 22, 1987, the Westinghouse Owner's Group submitted a topical report WCAP-11394-P, "Methodology for the Analysis of the Dropped Rod Event," which was approved by NRC staff in January 1990 (Reference 1). The conclusion reached in WCAP-11394-P-A was that sufficient margin is expected with all Westinghouse plant design and fuel types such that the negative flux rate trip is not required regardless of the worth of the dropped RCCA (or bank), subject to a plant/cycle-specific analysis.

In this topical report, staff reviewed and approved the Westinghouse analysis and the results, and concluded that the approach described in WCAP-11394-P-A was acceptable for analyzing the dropped RCCA event for which no credit is taken for any direct reactor trip due to dropped RCCAs or for automatic power reduction due to the dropped RCCAs. In the approval, the NRC noted that further review by the NRC staff for each cycle is not necessary, given the utility's assertion that the analysis described by WCAP-11394-P-A has been performed and the required comparisons have been made with favorable results.

Exelon has performed the plant specific safety analysis of the proposed changes, and stated that the proposed changes for Byron Station, Units 1 and 2, and Braidwood Station, Units 1 and 2, are consistent with the NRC approved methodology presented in WCAP-11394-P-A, and consistent with the NRC approved changes for the Watts Bar Nuclear Plant Unit 1. This methodology assumes no direct reactor trip or automatic power reduction to mitigate the consequences of the dropped RCCAs. The staff reviewed the analyses submitted by the licensee to confirm compliance with the methodology as described in the WCAP.

The correlations and statepoints generated for this methodology apply to the Byron Station, Units 1 and 2, and Braidwood Station, Units 1 and 2. In addition, the licensee has committed to implementing the methodology as described in WCAP-11394-P-A for the upcoming cycle and for future cycles, and to satisfy the conditions in the WCAP and, as stated in the SER, approving WCAP-11394-P-A. There is no adverse impact that increases the risk to the health and safety of the public as a result of the proposed changes.

The licensee provided an assessment of the proposed changes with respect to other Byron Station and Braidwood Station safety analyses and evaluations as follows:

Due to the plant specific nature of the core physics characteristics and the thermal-hydraulic dropped RCCAs limit lines, the licensee provided plant-specific data that were combined with the appropriate set of correlations and statepoints and verified that the DNB design basis is met for the dropped RCCAs event for every fuel cycle design. In their submittal, the licensee provided additional information regarding their analyses using the WCAP-11394-P-A (Reference 1) methodology.

- Loss-of-coolant accident (LOCA) and LOCA-related evaluations - The NFRT function is not modeled in the LOCA analyses. The following LOCA-related analyses are not affected by the proposed changes: large- and small-break LOCA, reactor vessel and reactor coolant system (RCS) loop LOCA-blowdown forces, post-LOCA long-term core cooling subcriticality, post-LOCA long-term cooling minimum flow, and RCS hot leg switchover to prevent boron precipitation. The proposed changes do not affect the normal plant operating parameters, accident mitigation capabilities to a LOCA, the assumption used in the LOCA-related accidents, or create conditions more limiting than those assumed in these analyses.
- Non-LOCA related evaluation - The current non-LOCA safety analyses do not take credit for the NFRT function. The conclusion presented in the updated final safety analysis report (FSAR) that DNB design-basis is met with respect to non-LOCA related evaluations remains valid for the proposed changes which credit the application of WCAP-11394-P-A (Reference 1).
- Mechanical Components and Systems evaluation - Elimination of the NFRT function does not affect the RCS component integrity or the ability of the RCS to perform its intended safety function. The proposed changes do not affect the integrity of plant systems or their ability to perform intended safety functions.
- Containment Integrity evaluation - The NFRT function is not credited in the containment analyses.
- Main Steam Line Break (MSLB) Mass and Energy Release evaluation - The NFRT function is not credited in the MSLB analyses.

- Emergency Operating Procedures (EOPs) evaluation - The NFRT function is not covered as part of the EOPs, therefore, the proposed change does not affect the EOPs.
- Safety Systems Setpoint evaluation - The NFRT function deletion does not change the setpoint information shown in the TS or the Technical Requirements Manual.
- Steam Generator Tube Rupture (SGTR) evaluation - The NFRT function is not credited in the SGTR analyses.
- Control System evaluation - The proposed changes have no adverse impact on the control systems evaluation.

The licensee stated that the current Byron Station and Braidwood Station's abnormal operating procedure (AOP) on "Dropped or Misaligned Rod" provides instructions to the plant operators to manually trip the reactor for multiple dropped RCCAs. This procedure is part of the licensed operator requalification program and the initial license training program.

4.0 SUMMARY

Based on the review of the analyses presented in the November 13, 2000, submittal, the staff determined that the licensee's analyses are consistent with the methodology presented in the Westinghouse topical report WCAP-11394-P-A. Furthermore, the licensee's analysis showed that the negative flux rate trip has no impact on the safety systems setpoints, the emergency operating procedures, and the RCS component integrity, and, therefore, the NFRT function deletion has no impact on the important plant safety functions and does not meet any of the criteria set out in 10 CFR 50.36(c)(2)(ii) as discussed in Section 2. Therefore, the deletion of NFRT function from TS is acceptable. The staff concurs with this conclusion. Therefore, there is no adverse impact that increases the risk to the health and safety of the public as a result of the proposed changes.

5.0 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.

6.0 ENVIRONMENTAL CONSIDERATION

The amendments change requirements with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 or change surveillance requirements. The NRC staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration, and there has been no public comment on such finding (66 FR 11054). 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.

7.0 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.

8.0 REFERENCES

1. Westinghouse Topical Report, WCAP-11394-P-A, "Methodology for the Analysis of the Dropped Rod Event," dated January 1990.
2. Letter from A. C. Thadani (U. S. NRC) to R. A. Newton (Westinghouse Owners Group), "Acceptance for Referencing of Licensing Topical Reports WCAP-11394(P) and WCAP-11395(NP), 'Methodology for the Analysis of the Dropped Rod Event,'" dated October 23, 1989.
3. Letter from R. E. Martin (U. S. NRC) to J. A. Scalice (Tennessee Valley Authority), "Issuance of Amendment Regarding Deletion of Negative Flux Rate Trip for Watts Bar Nuclear Plant, Unit 1," dated January 15, 1999.
4. Westinghouse Topical Report, WCAP-10297-P-A, "Dropped Rod Methodology for Negative Flux Rate Trip Plants," dated June 1983.
5. Letter from C. O. Thomas (U. S. NRC) to E. P. Rahe, Jr. (Westinghouse Electric Corporation), "Acceptance for Referencing of Licensing Topical Report WCAP-10297(P), WCAP-10298 - (NS-EPR-2545) entitled 'Dropped Rod Methodology for Negative Flux Rate Trip Plants,'" dated March 31, 1983.
6. Letter from P. L. Pace (Tennessee Valley Authority) to U. S. NRC, "Watts Bar Nuclear Plant (WBN) - Unit 1 - Technical Specification (TS) Change No. 98-006 - Deletion of Power Range Neutron Flux High Negative Rate Reactor Trip Function," dated June 26, 1998.

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