

August 12, 2003

Mr. John L. Skolds, President  
Exelon Nuclear  
Exelon Generation Company, LLC  
4300 Winfield Road  
Warrenville, IL 60555

SUBJECT: BYRON STATION, UNITS 1 AND 2, AND BRAIDWOOD STATIONS,  
UNITS 1 AND 2 - ISSUANCE OF AMENDMENTS (TAC NOS. MB6077,  
MB6078, MB6079, MB6080)

Dear Mr. Skolds:

The U.S. Nuclear Regulatory Commission (Commission) has issued the enclosed Amendment No. 133 to Facility Operating License No. NPF-37 and Amendment No. 133 to Facility Operating License No. NPF-66 for the Byron Station, Unit Nos. 1 and 2, respectively, and Amendment No. 128 to Facility Operating License No. NPF-72 and Amendment No. 128 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 August 7, 2002, as supplemented by your letters dated February 28, and May 27, 2003.

The amendments revise the limiting condition for operation, the associated Conditions and Required Actions of Technical Specification (TS) 3.7.1, "Main Steam Safety Valves (MSSVs)," and the values in Table 3.7.1-1, "Operable Main Steam Safety Valves versus Applicable Power in Percent of Rated Thermal Power," by requiring five MSSVs per steam generator to be operable consistent with the accident analyses' assumptions. The amendments also modify the associated Required Actions of TS 3.7.1 by adding a requirement to reduce the Power Range Neutron Flux - High reactor trip setpoint when one or more steam generators with one or more MSSVs are inoperable.

J. Skolds

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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 and STN 50-455,  
STN 50-456 and STN 50-457

Enclosures: 1. Amendment No. 133 to NPF-37  
2. Amendment No. 133 to NPF-66  
3. Amendment No. 128 to NPF-72  
4. Amendment No. 128 to NPF-77  
5. Safety Evaluation

cc w/encls: See next page

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 and STN 50-455,  
STN 50-456 and STN 50-457

- Enclosures: 1. Amendment No. 133 to NPF-37
- 2. Amendment No. 133 to NPF-66
- 3. Amendment No. 128 to NPF-72
- 4. Amendment No. 128 to NPF-77
- 5. Safety Evaluation

cc w/encls: See next page

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**Package No.:**

**Tech Spec Pages No.: (Byron) ML**

**Tech Spec Pages No.: (Braidwood) ML**

**ADAMS Accession No: ML031640503** \*see previous concurrences

NRR-100  
NRR-100  
NRR-058

OFFICE	PDIII-2/PM	PDIII-2/PM	PDIII-2/LA	SC/SRXB
NAME	MChawla	GDick*	PCoates	JUhle*
DATE	08/12/03	07/09/03	08/12/03	07/06/03
OFFICE	SC/EEIB	SC/RORP	OGC	PDIII-2/SC
NAME	EMarinos*	SMagruder*	AFernandez*	AMendiola
DATE	07/17/03	07/23/03	08/06/03	08/12/03

**OFFICIAL RECORD COPY**

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EXELON GENERATION COMPANY, LLC

DOCKET NO. STN 50-454

BYRON STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 133  
License No. NPF-37

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Exelon Generation Company, LLC (the licensee) dated August 7, 2002, as supplemented by your letters dated February 28, and May 27, 2003, 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. 133 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

*/RA/*

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: August 12, 2003

EXELON GENERATION COMPANY, LLC

DOCKET NO. STN 50-455

BYRON STATION, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 133  
License No. NPF-66

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Exelon Generation Company, LLC (the licensee) dated August 7, 2002, as supplemented by your letters dated February 28, and May 27, 2003, 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. 133 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

*/RA/*

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: August 12, 2003

ATTACHMENT TO LICENSE AMENDMENT NOS. 133 AND 133

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

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

Replace the following pages of the Appendix "A" Technical Specifications with the attached pages. The revised pages are identified by amendment number and contain marginal lines indicating the area of change.

Remove Pages

3.7.1-1  
3.7.1-2  
3.7.1-3

Insert Pages

3.7.1-1  
3.7.1-2  
3.7.1-3

EXELON GENERATION COMPANY, LLC

DOCKET NO. STN 50-456

BRAIDWOOD STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 128  
License No. NPF-72

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Exelon Generation Company, LLC (the licensee) dated August 7, 2002, as supplemented by your letters dated February 28, and May 27, 2003, 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. 128 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

*/RA/*

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: August 12, 2003

EXELON GENERATION COMPANY, LLC

DOCKET NO. STN 50-457

BRAIDWOOD STATION, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 128  
License No. NPF-77

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Exelon Generation Company, LLC (the licensee) dated August 7, 2002, as supplemented by your letters dated February 28, and May 27, 2003, 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. 128 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

*/RA/*

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: August 12, 2003

ATTACHMENT TO LICENSE AMENDMENT NOS. 128 AND 128

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 marginal lines indicating the area of change.

Remove Pages

3.7.1-1  
3.7.1-2  
3.7.1-3

Insert Pages

3.7.1-1  
3.7.1-2  
3.7.1-3

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 133 TO FACILITY OPERATING LICENSE NO. NPF-37,  
AMENDMENT NO. 133 TO FACILITY OPERATING LICENSE NO. NPF-66,  
AMENDMENT NO. 128 TO FACILITY OPERATING LICENSE NO. NPF-72,  
AND AMENDMENT NO. 128 TO FACILITY OPERATING LICENSE NO. NPF-77  
EXELON GENERATION COMPANY, LLC  
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 application dated August 7, 2002, as supplemented by letters dated February 28, and May 27, 2003, Exelon Generation Company, LLC (Exelon) (the licensee) requested changes to Technical Specification (TS) 3.7.1, "Main Steam Safety Valves (MSSVs)" for the Byron Station, Unit 1 and 2, and the Braidwood Station, Unit 1 and 2. The supplements dated February 28, and May 27, 2003, provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the staff's original proposed no significant hazards consideration determination as published in the *Federal Register* on October 1, 2002 (67 FR 61681).

The proposed changes would revise the limiting condition for operation (LCO), the associated action requirements of TS 3.7.1, and the allowable reactor power limits in Table 3.7.1-1 for both plants.

For both Braidwood and Byron plants, there are five MSSVs in each steam generator (SG). All MSSVs are required by TS 3.7.1 to be operable for full-power operations. If any MSSVs are inoperable, TS 3.7.1 requires that within four hours, reactor power be reduced to less than or equal to the allowable power in percent of the rated thermal power (RTP) specified in Table 3.7.1-1, "Operable Main Steam Safety Valves versus Applicable Power in Percent of Rated Thermal Power." If reactor power is not reduced to the allowable power within 4 hours or if less than two MSSVs are operable in one or more S.S., TS 3.7.1 requires that the unit be placed in Mode 3 within 6 hours and Mode 4 within 12 hours.

The proposed TS revises the LCO by requiring five MSSVs per SG to be operable for full-power conditions. It changes the values of the allowable power limits in Table 3.7.1-1 to reflect current uprated power conditions (from 3427.6 megawatt-thermal (MWt) to 3600.6 MWt including

reactor coolant pump heat) and includes an allowance (9 percent) to account for nuclear instrumentation system reactor trip channel uncertainty. The proposed TS also modifies the associated required actions of TS 3.7.1 by adding a requirement to reduce the Power Range Neutron Flux - High (PRNF-H) reactor trip setpoints to be consistent with the values in Table 3.7.1-1 for operations with one or more MSSVs inoperable. The action requirement is added to limit the consequences of the events that challenge the relieving capacity of the MSSVs. For example, with one or more inoperable MSSVs on one or more SGs, a design-basis event (DBE), such as turbine loss of load (LOL) or an uncontrolled rod cluster control assembly withdrawal from partial power level during "rod withdrawal at power" (RWAP) event, may result in an increased SG pressure greater than the pressure code limit. The reduced PRNF-H trip setpoints are added to provide additional SG overpressure protection during the DBE.

After initial review, NRC staff requested additional information from Exelon (accession #ML023370681) which was followed up by a telephone conference on December 16, 2002, between the NRC staff and Exelon.

In support of the proposed TS changes, the licensee provided the results of its analysis of DBEs that could challenge the relieving capacity of the MSSVs, (Ref. 1) and its responses (Refs. 2 and 3) to the staff's request for additional information for the staff to review.

## 2.0 REGULATORY EVALUATION

The requirement of General Design Criterion (GDC) 15 of Appendix A to 10 CFR Part 50 specifies that "[t]he reactor coolant system and associated auxiliary, control, and protection systems shall be designed with sufficient margin to assure that the design conditions of the reactor coolant pressure boundary are not exceeded during any condition of normal operation, including anticipated operational occurrences."

The Commission's regulatory requirements related to the content of TSs are set forth in Section 50.36 of Title 10 of the Code of Federal Regulations (10 CFR). Specifically, 10 CFR 50.36(c)(2)(ii) states, in part, that a TS LCO must be established for each item meeting one or more of the specified criteria. These criteria are: (1) installed instrumentation that is used to detect, and indicate in the control room, a significant abnormal degradation of the reactor coolant system (RCS) pressure boundary; (2) a process variable, design feature, or operating restriction that is 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.

The standard TSs were developed based on the criteria in 10 CFR 50.36(c)(2)(ii). Existing LCOs and related surveillance requirements included as TS requirements which satisfy any of the criteria specified in 10 CFR 50.36(c)(2)(ii) must be retained in the TSs.

Braidwood Units 1 and 2 and Byron Units 1 and 2 use the pressurized water type of the nuclear steam supply systems made by Westinghouse Electric Corporation. As noted above, since the TSs were developed based on the criteria in 10 CFR 50.36(c)(2)(ii), the staff's review of the proposed TS changes (Ref. 1) will be based on the compliance with the GDC 15 requirement and consistency with the guidance provided in NUREG-1431, Revision 2, "Standard Technical Specifications - Westinghouse Plants," (WSTS).

As stated by the licensee, this change is based on NRC-approved Technical Specifications Task Force (TSTF) Standard Technical Specification Change Traveler, TSTF-235, Revision 1 with exceptions due to plant-specific considerations. The TSTF-235, Revision 1 has been incorporated into Revision 2 of NUREG-1431.

### 3.0 TECHNICAL EVALUATION

The staff has reviewed the licensee's submittal and prepared the following evaluation. The staff's review is performed to confirm that the licensee's supporting analysis is based on acceptable methods, the values of input parameters used in the calculations are conservative and result in lower thermal power limits, and the proposed TS appropriately reflects the results of the acceptable analysis and meets the intent of the applicable sections of the WSTS.

#### 3.1 Allowable Power Limits for Operations with Inoperable MSSVs

Current TS 3.7.1 requires all five MSSVs in each SG to be operable for full-power operations in order to provide SG overpressure protection during a DBE. For operation with less than all five MSSVs operable for each SG, TS Table 3.7.1-1 limits the thermal power to the relief capacity of the remaining operable MSSVs. The allowable power limits of current TS Table 3.7.1-1 are 60, 43 and 25 percent of the RTP for operation with 4, 3 and 2 operable MSSVs, respectively, in each SG. The current allowable power limits are based on a nominal RTP (including reactor coolant pump (RCP) heat) of 3427.6 MWt. Since the licensee for Braidwood Units 1 and 2, and Byron Units 1 and 2 received power uprate approval authorizing an increase in the RTP (including the RCP heat) to 3600.6 MWt (Ref. 2), it proposed to revise the allowable power limits in TS Table 3.7.1-1 to reflect the uprated power level of 3600.6 MWt. The power limits in TS Table 3.7.1-1 are revised to 56, 39 and 23 percent of the uprated RTP. The licensee determined the proposed power limits using a simple heat balance equation, which is a function of the RTP, steam flow rate of the operable MSSVs, steam enthalpy, and number of SGs in the plant. The staff finds that the equation used is the same one specified in Bases Section 3.7.1 of the WSTS and the use of the equation is consistent with the guidance of the WSTS. The values used in the equation are conservative. For example, the values used in the calculation are 3600.6 MWt representing the uprated RTP and the total steam flow rates representing the minimum flow rate capacity of the operable MSSVs on any one SG. In addition, the power limits calculated from the heat balance equation are reduced for use in TS Table 3.7.1-1 to account for the nuclear instrumentation system reactor trip channel uncertainty of 9 percent, which bounds the uncertainty of 7.4 percent used in the current licensing basis calculations. Therefore, the staff determines that the proposed power limits in TS Table 3.7.1-1 are acceptable.

### 3.2 Setpoints of the PRNF-H Trip at Low Power Levels

Bases Section 3.7.1 of the WSTS indicates that if a Westinghouse plant operating at full-power experiences a decreased heat removal event such as the LOL, or a reactivity insertion event such as the RWAP, the event would be terminated by a reactor trip on high pressurizer pressure, overtemperature  $\Delta T$ , or SG low-low level. The SG overpressure protection is provided by actuation of the MSSVs. When a plant is operating at a reduced power level with one or more MSSVs inoperable, a reactor trip from the signal of high pressurizer pressure, overtemperature  $\Delta T$ , or SG low-low level may not occur before the SG pressure exceeds the code limit (i.e., 110 percent of the design pressure) during the transient. In order to limit the consequences of the events that challenge the relieving capacity of the MSSVs, WSTS 3.7.1 requires a reduction in the PRNF-H trip setpoints for operation with inoperable MSSVs to appropriate values, which should be consistent with the allowable power limits specified in WSTS Table 3.7.1-1, or determined by performing plant-specific analysis for the relevant DBEs.

In the proposed TS, the licensee modifies the associated action requirement of TS 3.7.1 by adding a requirement to reduce the PRNF-H trip setpoints to the same power limits proposed in TS Table 3.7.1 for operation with one or more MSSVs inoperable. The staff finds that the licensee's approach of reducing the PRNF-H trip setpoints meets WSTS 3.7.1. The staff also finds that the added PRNF-H reactor trip setpoints makes the proposed TS to be more restrictive than the current TS, which has no requirements for reducing PRNF-H reactor trip setpoints.

The main purpose of the MSSVs is to provide overpressure protection for the RCS and SGs. Together with the reactor protection system, the MSSVs ensure that the RCS and SG pressures meet the GDC 15 requirement in terms of the pressure code limit (110 percent of design pressure). The compliance with the GDC requirement is demonstrated in the analysis of DBEs. In assessing the effects of the proposed TS changes on the DBE analysis, the licensee evaluated the current analysis of record (AOR) and identified (Ref. 3) that the LOL and RWAP events are the limiting cases whose consequences related to an increase in the RCS and SG pressure is most sensitive to the relief capacity of the MSSVs. In support of the TS changes, the licensee reanalyzed the LOL and RWAP events for plant conditions with 2, 3, and 4 operable MSSVs on each SG at their corresponding maximum allowable core power levels and the required PRNF-H reactor trip setpoints specified in proposed TS Table 3.7.1-1. The reanalysis was performed with the LOFTRAN computer code, which was used for the current AOR. In the reanalysis, the values assumed for the initial plant conditions and core characteristics (such as the negative and positive moderator temperature coefficients) were the same as that used in the AOR, with exception that the initial power levels were assumed to reflect the values corresponding to the maximum allowable power levels proposed in TS Table 3.7.1-1. In addition, the reanalysis assumed that the MSSVs would open only when the calculated SG pressure reaches the values corresponding to MSSVS setpoints with associated tolerance of +4 percent, which bounds the setpoint tolerance limit of +3 percent specified in the current TS. Also, the PRNF-H reactor trip was assumed to occur when the calculated core power reaches the values corresponding to the PRNF-H trip setpoints with associated tolerance of +7.4 percent, which is consistent with the setpoint uncertainty. The tolerances of +4 percent and +7.4 percent assumed in the reanalysis generate higher effective MSSV opening pressures and increase effective power levels for the PRNF-H trip, and will result in higher peak RCS and SG pressure during an LOL or RWAP event. As discussed in (Refs. 2 and 3), the results of the reanalysis show that the calculated RCS and SG pressures for the applicable cases meet the

code pressure limits of 110 percent of design pressure. Since the reanalysis uses the same computer code that was used for the current AOR, it also uses the assumptions that are consistent with those used in the AOR but includes appropriate changes to reflect PRNF-H trip setpoints for various operable MSSV conditions. The results show that calculated RCS and SG pressures are below 110 percent of design pressure. The staff concludes, therefore, that the reanalysis is acceptable for supporting the proposed PRNF-H reactor trip setpoints.

Based on the review discussed above, the staff finds that: (1) the added PRNF-H reactor trip setpoints to the proposed TS represents an improvement over the current TS; (2) the proposed values of the added reactor trip setpoints adequately reflect the assumptions used in the acceptable reanalysis; and (3) the proposed PRNF-H reactor trip setpoints are consistent with the approach used in WSTS 3.7.1 to ensure overpressure protection for the RCS and SGs. Therefore, the staff concludes that the PRNF-H reactor trip setpoints in proposed Table 3.7.1-1 are acceptable.

### 3.3 Technical Specifications Changes

The following are the proposed TS changes:

#### 3.3.1 Limiting Condition for Operation

The current LCO requires the MSSVs to be operable as specified in Table 3.7.1-1, "Operable Main Steam Safety Valves versus Applicable Power in Percent of Rated Thermal Power" and Table 3.7.1-2, "Main Steam Safety Valve Lift Settings."

The proposed TS 3.7.1 revises the LCO by requiring five MSSVs per SG to be operable. The new TS relocates referencing TS Table 3.7.1-1 to the required Action A. The MSSV lift pressures specified in TS Table 3.7.1-2 are referenced in SR 3.7.1.1. The staff finds that the TS changes are editorial in nature and the wording and format of the proposed LCO are consistent with that of the WSTS LCO 3.7.1. Therefore, the staff concludes the proposed LCO is acceptable.

#### 3.3.2 Condition A and Associated Required Actions

Current Condition A is entered when one or more required MSSVs are inoperable. Its Action A.1 requires reducing the power to less than or equal to the applicable power in percent of the RTP listed in Table 3.7.1-1 within 4 hours.

The proposed TS specifies that Condition A is entered when one or more SGs with one or more MSSVs are inoperable. The proposed Action A.1 requires reducing the thermal power to less than or equal to the maximum allowable power in percent of the RTP specified in Table 3.7.1-1 for the number of operable MSSVs within 4 hours. The staff finds that the changes in Condition A and Action A.1 are consistent with the wording of revised Table 3.7.1-1, and the wording and format of WSTS 3.7.1. The staff determines that the proposed changes are editorial and acceptable because they only clarify the intent and do not change the meaning of the existing requirements.

The proposed TS adds Action A.2 requiring a reduction in the PRNF-H reactor trip setpoints to be less than or equal to the maximum allowable power in percent of the RTP levels specified in Table 3.7.1-1 for the number of operable MSSVs within 36 hours. The added Action A.2 is modified by a Note, indicating that the PRNF-H setpoint reduction is only required in Mode 1. As discussed in Section 3.2 of this evaluation, the staff determines that the added Action A.2 is more restrictive than the current TS and is acceptable. The licensee indicated that the completion time of 36 hours is based on a reasonable time to correct the MSSV inoperability.

The staff finds that the proposed completion time is consistent with that of WSTS 3.7.1, and determines that it is a reasonable completion time for correction of the MSSV inoperability and is acceptable.

### 3.3.3 Condition B and Associated Required Actions

Current Condition B requires that the unit be placed in Mode 3 within 6 hours and Mode 4 within 12 hours when the required actions and associated completion time cannot be met or when one or more SGs have less than two MSSVs operable.

The revised Condition B requires that the unit be placed in Mode 3 within 6 hours and Mode 4 within 12 hours when the required actions cannot be completed within the associated completion time or when one or more SGs have greater than or equal to four MSSVs inoperable. The staff finds that Condition B is reworded without changing the intent of the condition and is consistent with corresponding Condition C of WSTS 3.7.1. The staff determines that the changes are editorial changes and are acceptable.

### 3.3.4 TS Table 3.7.1-1 - Maximum Allowable Power Limits

Current Table 3.7.1-1 specifies that the applicable power in percent of the RTP is limited to less than or equal to 100, 60, 43 and 25 when each SG has 5, 4, 3 or 2 operable MSSVs, respectively.

The revised Table 3.7.1-1 requires that the maximum allowable power in percent of the RTP is 56, 39, 23 for a unit with 4, 3 or 2 operable MSSVs, respectively. As discussed in Section 3.3.1 of this evaluation, the requirement of five operable MSSVs for 100 percent RTP power is moved to LCO 3.7.1. Also, as discussed in Section 3.1 of this evaluation, the staff finds that the proposed allowable power limits are calculated using an acceptable method with conservative values of input parameters. Therefore, the staff concludes that the values proposed in Table 3.7.1-1 are acceptable.

The title of Table 3.7.1-1 is also changed from "Operable Main Steam Safety Valves versus Applicable Power in Percent of Rated Thermal Power" to "Operable Main Steam Safety Valves versus Maximum Allowable Power." This is an editorial change and is acceptable.

## 4.0 SUMMARY

The staff has reviewed the proposed TS 3.7.1. As discussed in Sections 2.0 and 3.0 above, the staff finds that: (1) the method used for the analysis is consistent with that specified in

Bases Section 3.7.1 of the WSTS; (2) the proposed maximum allowable power limits adequately reflect the results of the acceptable analysis; (3) the added PRNF-H reactor trip setpoints to the proposed TS represents an improvement over the current TS; and (4) the wording and format of the proposed TS are consistent with that of WSTS 3.7.1. Based on its findings, the staff determines that the proposed TS 3.7.1 in (Ref. 1) meet WSTS 3.7.1 and is more restrictive than the current TS. Therefore, the staff concludes that the proposed TS is acceptable for safe operation of Braidwood Units 1 and 2, and Byron Units 1 and 2.

## 5.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Illinois State official was notified of the proposed issuance of the amendment. The State official had no comments.

## 6.0 ENVIRONMENTAL CONSIDERATION

The amendments change a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. 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 (67 FR 61681). 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. Letter from K. Jury (Exelon) to NRC, "Request for Technical Specifications Changes, Revision to Technical Specification 3.7.1, 'Main Steam Safety Valves (MSSVs)'," dated August 7, 2002.

2. Letter from K. A. Ainger (Exelon) to NRC, "Response to a Request for Additional Information Regarding a Technical Specifications Changes Request - Revision to Technical Specification 3.7.1, 'Main Steam safety Valves (MSSVs)'," dated February 28, 2003.
3. Letter from K. A. Ainger (Exelon) to NRC, "Response to a Request for Additional Information Regarding a Technical Specifications Changes Request - Revision to Technical Specification 3.7.1, 'Main Steam safety Valves (MSSVs)'," dated May 27, 2003.

Principal Contributor: Summer Sun

Dated: August 12, 2003