

RS-05-155

January 12, 2006

U. S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Washington, DC 20555-0001

Braidwood Station, Units 1 and 2  
Facility Operating License Nos. NPF-72 and NPF-77  
NRC Docket Nos. STN 50-456 and STN 50-457

Byron Station, Units 1 and 2  
Facility Operating License Nos. NPF-37 and NPF-66  
NRC Docket Nos. STN 50-454 and STN 50-455

Subject: Request for a License Amendment to Technical Specification 3.6.6,  
"Containment Spray and Cooling Systems," Surveillance Requirement  
SR 3.6.6.3.

In accordance with 10 CFR 50.90, "Application for amendment of license or construction permit," Exelon Generation Company, LLC (EGC) is requesting an amendment to the Technical Specifications (TS) of Facility Operating License Nos. NPF-72, NPF-77, NPF-37, and NPF-66 for Braidwood Station, Units 1 and 2, and Byron Station, Units 1 and 2, respectively. The proposed amendment would correct the TS Surveillance Requirement (SR) 3.6.6.3 containment cooling train cooling water flow rate to accurately reflect the plant configuration.

The proposed change is a correction to Amendment No. 98 to Facility Operating License Nos. NPF-72 and NPF-77 for Braidwood Station, Units 1 and 2, and Amendment No. 106 to Facility Operating License Nos. NPF-37 and NPF-66 for Byron Station, Units 1 and 2. The amendments issued on December 22, 1998, converted the previous TS for Braidwood and Byron Stations to Improved Technical Specifications (ITS) based on NUREG 1431, "Standard Technical Specifications – Westinghouse Plants," Revision 1, dated April 1995.

The attached amendment request is subdivided as shown below.

Attachment 1 provides a description of the proposed change.

Attachments 2A and 2B include the marked-up TS page with the proposed change indicated for Braidwood Station and Byron Station, respectively.

Attachments 3A and 3B include the associated typed TS page with the proposed change incorporated for Braidwood Station and Byron Station, respectively.

We request approval of the proposed change by July 12, 2006, with the amendment being implemented within 30 days of issuance.

The NRC has previously issued a correction to the ITS amendment for LaSalle County Station, Units 1 and 2, dated October 15, 2003. The correction letter and subsequent issuance of the corrected TS page were in response to a similar amendment dated April 18, 2003, and supplemented by a letter dated June 10, 2003.

The proposed amendment has been reviewed by the Braidwood Station and the Byron Station Plant Operations Review Committees and approved by their respective Nuclear Safety Review Boards in accordance with the requirements of the EGC Quality Assurance Program.

EGC is notifying the State of Illinois of this application for a change to the TS by sending a copy of this letter and its attachments to the designated State Official in accordance with 10 CFR 50.91, "Notice for public comment; State consultation," paragraph (b).

Should you have any questions concerning this letter, please contact Ms. Alison Mackellar at (630) 657-2817.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 12<sup>th</sup> day of January 2006.

Respectfully,



Joseph A. Bauer  
Manager, Licensing and Regulatory Affairs

Attachment 1: Evaluation of Proposed Change  
Attachment 2A–2B: Mark-up of Proposed Technical Specifications Page Changes  
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**ATTACHMENT 1**  
**Evaluation of Proposed Change**

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# ATTACHMENT 1

## Evaluation of Proposed Change

### 1.0 DESCRIPTION

The proposed amendment would revise the Technical Specification (TS) Surveillance Requirement (SR) 3.6.6.3 Containment Cooling train cooling water flow rate to accurately reflect the plant configuration.

The proposed change is a correction to Amendment No. 98 to Facility Operating License Nos. NPF-72 and NPF-77 for Braidwood Station, Units 1 and 2, and Amendment No. 106 to Facility Operating License Nos. NPF-37 and NPF-66 for Byron Station, Units 1 and 2. The amendments issued on December 22, 1998, converted the previous TS for Braidwood and Byron Stations to Improved Technical Specifications (ITS) based on NUREG 1431, "Standard Technical Specifications Westinghouse Plants," Revision 1, dated April 1995.

Prior to conversion to ITS, the SR equivalent to SR 3.6.6.3 required that each system of containment cooling fans be demonstrated OPERABLE by "verifying an essential service water flow rate of greater than or equal to 2660 gpm to each cooler." During the ITS conversion, standard verbiage for SR 3.6.6.3 was adopted; however, the specific plant design of two Reactor Containment Fan Coolers (RCFCs) per Containment Cooling train was inadvertently overlooked. This proposed amendment would correctly modify the wording in SR 3.6.6.3 to accurately reflect the Braidwood and Byron existing plant design.

We request approval of the proposed license amendment by July 12, 2006. Once approved, the amendment will be implemented within 30 days.

### 2.0 PROPOSED CHANGES

The proposed wording associated with the change is identified below in bold type.

SR 3.6.6.3     Verify each containment cooling train cooling water flow rate is  
                   $\geq$  2660 gpm **to each cooler**.

### 3.0 BACKGROUND

The Containment Spray System in conjunction with the Containment Cooling System provides containment atmosphere cooling to limit post accident pressure and temperature in containment to less than design values. In addition, the Containment Spray System and the Containment Cooling System provide a method of ensuring a mixed atmosphere during post Loss of Coolant Accident (LOCA) conditions and satisfy the requirements of 10 CFR 50.44, "Combustible gas control for nuclear power reactors," paragraph (b)(1).

The Containment Cooling System consists of two redundant trains, each of sufficient capacity to supply 100% of the design cooling requirement. Each train consisting of two RCFCs is supplied with cooling water from a separate train of Essential Service Water (SX) and is powered from a separate Engineered Safety Feature (ESF) bus. Each Containment Cooling System train consists of two 50% capacity RCFC units. Containment Cooling System train A consists of RCFCs A and C; and train B consists of RCFCs B and D.

Verifying that each Containment Cooling System train SX cooling flow rate to each cooling unit is  $\geq$  2660 gpm provides assurance that the design flow rate assumed in the safety analyses will be achieved. The Frequency of SR 3.6.6.3 was developed considering the known reliability of

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the SX system, the redundancy of the two Containment Cooling trains, and the low probability of a significant degradation of flow occurring between surveillances.

During the ITS conversion, the specific plant design consisting of two RCFCs per Containment Cooling System train was inadvertently overlooked. The license amendment request for Braidwood and Byron Stations for conversion to ITS should have modified the wording for SR 3.6.6.3 in NUREG-1431 to correctly accommodate the plant specific design.

The ITS conversion of the TS Bases for Section 3.6.6.3 correctly describes the plant design and the Updated Final Safety Analysis Report (UFSAR) Sections 6.2, "Containment Systems," and 9.4, "Air Conditioning, Heating, Cooling, and Ventilation Systems," also correctly reflect the particular plant design. The SR 3.6.6.3 implementing procedures for both Byron and Braidwood Stations appropriately verify the SX cooling water flow to each RCFC, as opposed to each train, is  $\geq 2660$  gpm. The station has historically performed the SR verifying RCFC flow, as intended.

Currently, SR 3.6.6.3 is considered a nonconservative TS SR because the surveillance verifies that the cooling water flow rate is required to be  $\geq 2660$  gpm to each cooling train vice each cooler. NRC Administrative Letter 98-10, "Dispositioning of Technical Specifications that are insufficient to assure Plant Safety," addresses the NRC's expectations regarding correction of facility TS when they are found to contain nonconservative values. In the case of a deficient TS, these expectations include the evaluation of compensatory measures, such as administrative controls, in accordance with 10 CFR 50.59, "Changes, tests, and experiments," and prompt actions to correct the TS.

For Braidwood and Byron Stations, appropriate administrative controls are in place. The associated procedures for SR 3.6.6.3 correctly verify the SX cooling water flow rate to each RCFC is  $\geq 2660$  gpm. In addition, the TS Bases and the UFSAR accurately reflect the plant specific design and therefore do not need revision. Braidwood and Byron Stations have entered the discrepancy with SR 3.6.6.3 into the Exelon Generation Company, LLC (EGC) Corrective Action Program.

#### **4.0 TECHNICAL ANALYSIS**

NUREG-1431, Revision 1, provided licensees with the then latest NRC recommended content and format for TS. The NUREG-1431 SR for verification of each Containment Cooling train cooling water flow rate specifies requirements for each train; however, did not contain a provision for plant designs that have two coolers per train.

During ITS conversion the specifics of the plant design of two RCFCs per Containment Cooling System train were inadvertently overlooked. The license amendment request for Braidwood and Byron Stations for the conversion to ITS designated the subject change to the Custom Technical Specifications (CTS) for that specific SR as Administrative (i.e., A<sub>1</sub>). This Administrative change documentation however did not address the specifics of the plant design.

Where a proposed ITS Limited Condition of Operation (LCO) requirement differed from the NUREG-1431 LCO, individual details of the change were annotated with alpha-numeric designators which relate to the appropriate Justification for Difference (JFD). The ITS conversion license amendment request for Braidwood and Byron Stations should have modified the wording for SR 3.6.6.3 in NUREG 1431, Revision 1, and provided a JFD that explained the specific system configuration.

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The ITS conversion of the TS Bases for Section 3.6.6.3 accurately reflects the plant design and was annotated in the amendment request appropriately as plant specific (i.e., P<sub>7</sub> and P<sub>4</sub>).

### 5.0 REGULATORY ANALYSIS

#### Overview

In accordance with 10 CFR 50.90, "Application for amendment of license or construction permit," Exelon Generation Company, LLC (EGC) is requesting an amendment to the Technical Specifications (TS) of Facility Operating License Nos. NPF-72, NPF-77, NPF-37, and NPF-66 for Braidwood Station, Units 1 and 2, and Byron Station, Units 1 and 2, respectively. The proposed amendment would correct the TS Surveillance Requirement (SR) 3.6.6.3 containment cooling train cooling water flow rate to accurately reflect the plant configuration.

The proposed change is a correction to Amendment No. 98 to Facility Operating License Nos. NPF-72 and NPF-77 for Braidwood Station, Units 1 and 2, and Amendment No. 106 to Facility Operating License Nos. NPF-37 and NPF-66 for Byron Station, Units 1 and 2. The amendments issued on December 22, 1998, converted the previous TS for Braidwood and Byron Stations to Improved Technical Specifications (ITS) based on NUREG 1431, "Standard Technical Specifications Westinghouse Plants," Revision 1, dated April 1995.

Prior to conversion to ITS, the SR equivalent to SR 3.6.6.3 required that each system of containment cooling fans be demonstrated OPERABLE by "Verifying an essential service water flow rate of greater than or equal to 2660 gpm to each cooler." During the ITS conversion, standard verbiage for SR 3.6.6.3 was adopted; however, the specific plant design of two Reactor Containment Fan Coolers (RCFCs) per Containment Cooling train was inadvertently overlooked. This proposed amendment would correctly modify the wording in SR 3.6.6.3 to accurately reflect the Braidwood and Byron existing plant design.

#### 5.1 No Significant Hazards Consideration

According to 10 CFR 50.92, "Issuance of amendment," paragraph (c), a proposed amendment to an operating license involves no significant hazards consideration if operation of the facility in accordance with the proposed amendment would not:

- (1) Involve a significant increase in the probability or consequences of an accident previously evaluated; or
- (2) Create the possibility of a new or different kind of accident from any accident previously evaluated; or
- (3) Involve a significant reduction in a margin of safety.

In support of this determination, an evaluation of each of the three criteria set forth in 10 CFR 50.92 is provided below regarding the proposed license amendment.

#### 1. **The proposed TS change does not involve a significant increase in the probability or consequences of an accident previously evaluated.**

The proposed change will revise Technical Specifications (TS) Surveillance Requirement (SR) 3.6.6.3 containment cooling train cooling water flow rate to accurately

## ATTACHMENT 1 Evaluation of Proposed Change

reflect the existing plant configuration as described in the Updated Final Safety Analysis Report (UFSAR) Sections 6.2, "Containment Systems," and 9.4, "Air Conditioning, Heating, Cooling, and Ventilation Systems." The revision will specify the appropriate testing requirements for verification that each Containment Cooling System train Essential Service Water (SX) flow rate to each cooling unit is  $\geq 2660$  gpm and will therefore provide assurance that the design flow rate assumed in the safety analyses will be achieved and the Limited Conditions for Operation (LCO) will be met. This change is in the conservative direction, i.e., verification of flow rate to each cooling unit  $\geq 2660$  gpm is more conservative than verification of the same flow rate to each cooling train that consists of two cooling units. The performance of TS surveillance testing is not a precursor to any accident previously evaluated. Thus, the proposed change does not have any affect on the probability of an accident previously evaluated.

The function of the Containment Cooling System in conjunction with the Containment Spray System is to provide containment atmosphere cooling to limit post accident pressure and temperature in containment to less than design values. There is no change to the design of the Containment Cooling System. Furthermore, the surveillance testing specified in SR 3.6.6.3 will provide assurance that the Containment Cooling System will perform as designed. Thus, the radiological consequences of any accident previously evaluated are not increased.

Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

**2. The proposed TS change does not create the possibility of a new or different kind of accident from any accident previously evaluated.**

The proposed change does not affect the control parameters governing unit operation or the response of plant equipment to transient conditions. The proposed change does not change or introduce any new equipment, modes of system operation or failure mechanisms.

Therefore, the proposed change does not create the possibility of a new or different kind of accident from any previously evaluated.

**3. The proposed TS change does not involve a significant reduction in a margin of safety.**

Prior to conversion to ITS, the SR equivalent to SR 3.6.6.3 required that each system of containment cooling fans be demonstrated OPERABLE by "verifying an essential service water flow rate of greater than or equal to 2660 gpm to each cooler." During the ITS conversion, standard verbiage for SR 3.6.6.3 was adopted; however, the specific plant design of two Reactor Containment Fan Coolers (RCFCs) per Containment Cooling train was inadvertently overlooked.

This proposed amendment would correctly modify the wording in Technical Specifications (TS) Surveillance Requirement (SR) 3.6.6.3 Containment Cooling System to accurately reflect the Braidwood and Byron existing plant design. The revision will provide the appropriate testing requirements for verification that each Containment Cooling System train SX cooling flow rate to each cooling unit is  $\geq 2660$  gpm. This verification provides assurance that the design flow rate assumed in the safety analyses

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will be achieved; and, therefore the LCO will be met. The change for verification of SX cooling flow rate from each cooling train to each cooling unit is in the conservative direction and will revise the existing non-conservative TS SR to be consistent with the plant design as described in the UFSAR.

Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Based on the above evaluation, EGC concludes that the proposed amendment presents no significant hazards consideration under the standards set forth in 10 CFR 50.92(c).

#### **5.2 Applicable Regulatory Requirements/Criteria**

10 CFR 50.36(c)(3), "Surveillance requirements," states that SRs are requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the LCO will be met.

The proposed change will provide the appropriate testing requirements for verification that each Containment Cooling System train SX cooling flow rate to each cooling unit is  $\geq 2660$  gpm. This verification provides assurance that the design flow rate assumed in the safety analyses will be achieved; and, therefore the LCO will be met.

#### **Impact on Previous Submittals/Precedent**

The NRC has previously issued a correction to the Improved Technical Specifications (ITS) amendment for LaSalle County Station, Units 1 and 2, dated October 15, 2003. The correction letter and subsequent issuance of the corrected TS page were in response to a similar EGC amendment dated April 18, 2003, and supplemented by a letter dated June 10, 2003.

#### **6.0 ENVIRONMENTAL EVALUATION**

EGC has evaluated this proposed operating license amendment consistent with the criteria for identification of licensing and regulatory actions requiring environmental assessment in accordance with 10 CFR 51.21, "Criteria for and identification of licensing and regulatory actions requiring environmental assessments." EGC has determined that these proposed changes meet the criteria for a categorical exclusion set forth in paragraph (c)(9) of 10 CFR 51.22, "Criterion for categorical exclusion; identification of licensing and regulatory actions eligible for categorical exclusion or otherwise not requiring environmental review," and as such, has determined that no irreversible consequences exist in accordance with paragraph (b) of 10 CFR 50.92, "Issuance of amendment." This determination is based on the fact that this change is being proposed as an amendment to a license issued pursuant to 10 CFR 50, "Domestic Licensing of Production and Utilization Facilities," which changes a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, "Standards for Protection Against Radiation," or which changes an inspection or a surveillance requirement, and the amendment meets the following specific criteria:

**(i) The amendment involves no significant hazards consideration.**

As demonstrated in Section 5.1, "No Significant Hazards Consideration," the proposed changes do not involve any significant hazards consideration.

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- (ii) There is no significant change in the types or significant increase in the amounts of any effluent that may be released offsite.**

The proposed change to surveillance requirement, SR 3.6.6.3 is conservative and does not result in an increase in power level, does not increase the production nor alter the flow path or method of disposal, of radioactive waste or byproducts; thus, there will be no change in the amounts of radiological effluents released offsite.

Based on the above evaluation, the proposed change will not result in a significant change in the types or significant increase in the amounts of any effluent released offsite.

- (iii) There is no significant increase in individual or cumulative occupational radiation exposure.**

The proposed change to surveillance requirement, SR 3.6.6.3 is conservative and will not result in any changes to the previously analyzed configuration of the facility. There will be no change in the level of controls or methodology used for the processing of radioactive effluents or handling of solid radioactive waste, nor will the proposal result in any change in the normal radiation levels in the plant. Therefore, there will be no increase in individual or cumulative occupational radiation exposure resulting from this change.

**7.0 REFERENCES**

1. Letter from W. A. Macon, Jr., (NRC), to J. L. Skolds, (Exelon Generation Company, LLC), "LaSalle County Station, Units 1 and 2 – Correction to Issuance of Amendments," dated October 15, 2003.
2. Letter from K. R. Jury, (Exelon Generation Company, LLC), to NRC, "Request for Amendment to Technical Specification Surveillance Requirement 3.6.1.3.8," dated April 18, 2003.
3. Letter from K. R. Jury, (Exelon Generation Company, LLC), to NRC, "Supplement to Request for Amendment to Technical Specifications Surveillance Requirement 3.6.1.3.8," dated June 10, 2003.
4. Letter from R. R. Assa, (NRC), to O. D. Kingsley, (Commonwealth Edison), "Issuance of Amendments," dated December 22, 1998.
5. Letter from G. Stanley and K. R. Graesser, (Commonwealth Edison), to NRC, "Conversion to Improved Standard Technical Specifications," dated December 13, 1996.

**ATTACHMENT 2-A**

**Markup of Proposed Technical Specification Page Change**

**BRAIDWOOD STATION  
NPF-72 and NPF-77**

REVISED TS PAGE

3.6.6-2

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action and associated Completion Time of Condition C not met.	D.1 Be in MODE 3.	6 hours
	<u>AND</u> D.2 Be in MODE 5.	36 hours
E. Two containment spray trains inoperable.  <u>OR</u> Any combination of three or more trains inoperable.	E.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.6.1 Verify each containment spray manual, power operated, and automatic valve in the flow path that is not locked, sealed, or otherwise secured in position is in the correct position.	31 days
SR 3.6.6.2 Operate each containment cooling train fan unit for $\geq$ 15 minutes.	31 days
SR 3.6.6.3 Verify each containment cooling train cooling water flow rate is $\geq$ 2660 gpm, to each cooler	31 days

(continued)

**ATTACHMENT 2-B**

**Markup of Proposed Technical Specification Page Change**

**BYRON STATION  
NPF-37 and NPF-66**

REVISED TS PAGE

3.6.6-2

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action and associated Completion Time of Condition C not met.	D.1 Be in MODE 3.	6 hours
	<u>AND</u> D.2 Be in MODE 5.	36 hours
E. Two containment spray trains inoperable.  <u>OR</u> Any combination of three or more trains inoperable.	E.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.6.1 Verify each containment spray manual, power operated, and automatic valve in the flow path that is not locked, sealed, or otherwise secured in position is in the correct position.	31 days
SR 3.6.6.2 Operate each containment cooling train fan unit for $\geq 15$ minutes.	31 days
SR 3.6.6.3 Verify each containment cooling train cooling water flow rate is $\geq 2660$ gpm, to each cooler.	31 days

(continued)

**ATTACHMENT 3-A**

**Typed Page**

**for**

**Technical Specification Change**

**BRAIDWOOD STATION  
NPF-72 and NPF-77**

**REVISED TS PAGE**

3.6.6-2

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action and associated Completion Time of Condition C not met.	D.1 Be in MODE 3.	6 hours
	<u>AND</u> D.2 Be in MODE 5.	36 hours
E. Two containment spray trains inoperable.  <u>OR</u>  Any combination of three or more trains inoperable.	E.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.6.1 Verify each containment spray manual, power operated, and automatic valve in the flow path that is not locked, sealed, or otherwise secured in position is in the correct position.	31 days
SR 3.6.6.2 Operate each containment cooling train fan unit for $\geq 15$ minutes.	31 days
SR 3.6.6.3 Verify each containment cooling train cooling water flow rate is $\geq 2660$ gpm to each cooler.	31 days

(continued)

**ATTACHMENT 3-B**

**Typed Page**

**for**

**Technical Specification Change**

**BYRON STATION  
NPF-37 and NPF-66**

**REVISED TS PAGE**

3.6.6-2

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action and associated Completion Time of Condition C not met.	D.1 Be in MODE 3.	6 hours
	<u>AND</u>	
	D.2 Be in MODE 5.	36 hours
E. Two containment spray trains inoperable.  <u>OR</u>  Any combination of three or more trains inoperable.	E.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.6.1 Verify each containment spray manual, power operated, and automatic valve in the flow path that is not locked, sealed, or otherwise secured in position is in the correct position.	31 days
SR 3.6.6.2 Operate each containment cooling train fan unit for $\geq 15$ minutes.	31 days
SR 3.6.6.3 Verify each containment cooling train cooling water flow rate is $\geq 2660$ gpm to each cooler.	31 days

(continued)