



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

July 21, 2014

Mr. Michael J. Pacilio
President and Chief Nuclear Officer (CNO)
Exelon Generation Company, LLC
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: BRAIDWOOD STATION, UNITS 1 AND 2, AND BYRON STATION, UNIT NOS. 1 AND 2 - ISSUANCE OF AMENDMENTS TO REVISE TECHNICAL SPECIFICATION 3.3.6, "CONTAINMENT VENTILATION ISOLATION INSTRUMENTATION" (TAC NOS. MF0456, MF0457, MF0458, AND MF0459)

Dear Mr. Pacilio:

The U.S. Nuclear Regulatory Commission (the Commission) has issued the enclosed Amendment No. 178 to Facility Operating License No. NPF-72 and Amendment No. 178 to Facility Operating License No. NPF-77 for the Braidwood Station, Units 1 and 2, respectively, and Amendment No. 184 to Facility Operating License No. NPF-37 and Amendment No. 184 to Facility Operating License No. NPF-66 for the Byron Station, Unit Nos. 1 and 2, respectively. The amendments are in response to your application dated December 21, 2012 (Agencywide Documents Access and Management System Accession No. ML12356A475).

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

Sincerely,

A handwritten signature in black ink that reads "Joel S. Wiebe".

Joel S. Wiebe, Senior Project Manager
Plant Licensing III-2 and
Planning and Analysis Branch
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

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

Enclosures:

1. Amendment No. 178 to NPF-72
2. Amendment No. 178 to NPF-77
3. Amendment No. 184 to NPF-37
4. Amendment No. 184 to NPF-66
5. Safety Evaluation

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

EXELON GENERATION COMPANY, LLC

DOCKET NO. STN 50-456

BRAIDWOOD STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 178
License No. NPF-72

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Exelon Generation Company, LLC (the licensee) dated December 21, 2012, 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. 178 and the Environmental Protection Plan contained in Appendix B, both of which are attached hereto, are hereby incorporated into the 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 165 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Travis L. Tate, Chief
Plant Licensing III-2 and
Planning and Analysis Branch
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical
Specifications and Facility Operating License

Date of Issuance: July 21, 2014



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

EXELON GENERATION COMPANY, LLC

DOCKET NO. STN 50-457

BRAIDWOOD STATION, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 178
License No. NPF-77

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Exelon Generation Company, LLC (the licensee) dated December 21, 2012, 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. 178 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 165 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Travis L. Tate, Chief
Plant Licensing III-2 and
Planning and Analysis Branch
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical
Specifications and Facility Operating License

Date of Issuance: July 21, 2014

ATTACHMENT TO LICENSE AMENDMENT NOS. 178 AND 178

FACILITY OPERATING LICENSE NOS. NPF-72 AND NPF-77

DOCKET NOS. STN 50-456 AND STN 50-457

Replace the following pages of the Facility Operating Licenses and Appendix A Technical Specifications (TSs) with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Remove

License NPF-72
Page 3

License NPF-77
Page 3

TSs

3.3.6-1
3.3.6-2
3.3.6-3
3.3.6-4
3.3.6-5
3.9.4-1
3.9.4-2

Insert

License NPF-72
Page 3

License NPF-77
Page 3

TSs

3.3.6-1
3.3.6-2
3.3.6-3
3.3.6-4

3.9.4-1
3.9.4-2

- (3) Exelon Generation Company, pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess, and use at any time any byproduct, source and special nuclear material as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;
 - (4) Exelon Generation Company, pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess, and use in amounts as required any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and
 - (5) Exelon Generation Company, pursuant to the Act and 10 CFR Parts 30, 40 and 70, to possess but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.
- C. The license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth in 10 CFR Chapter I and is subject to all applicable provisions of the Act and to the rules, regulations and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:
- (1) **Maximum Power Level**

The licensee is authorized to operate the facility at reactor core power levels not in excess of 3645 megawatts thermal (100 percent rated power) in accordance with the conditions specified herein and other items identified in Attachment 1 to this license. The items identified in Attachment 1 to this license shall be completed as specified. Attachment 1 is hereby incorporated into this license.
 - (2) **Technical Specifications**

The Technical Specifications contained in Appendix A as revised through Amendment No. 178 and the Environmental Protection Plan contained in Appendix B, both of which are attached hereto, are hereby incorporated into the license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.
 - (3) **Emergency Planning**

In the event that the NRC finds that the lack of progress in completion of the procedures in the Federal Emergency Management Agency's final rule, 44 CFR Part 350, is an indication that a major substantive problem exists in achieving or maintaining an adequate state of emergency preparedness, the provision of 10 CFR Section 50.54(s)(2) will apply.

material as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;

- (4) Exelon Generation Company, LLC pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess, and use in amounts as required any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and
- (5) Exelon Generation Company, LLC pursuant to the Act and 10 CFR Parts 30, 40 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.

C. The license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth in 10 CFR Chapter I and is subject to all applicable provisions of the Act and to the rules, regulations and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

(1) Maximum Power Level

The licensee is authorized to operate the facility at reactor core power levels not in excess of 3645 megawatts thermal (100 percent rated power) in accordance with the conditions specified herein and other items identified in Attachment 1 to this license. The items identified in Attachment 1 to this license shall be completed as specified. Attachment 1 is hereby incorporated into this license.

(2) Technical Specifications

The Technical Specifications contained in Appendix A as revised through Amendment No. 178 and the Environmental Protection Plan contained in Appendix B, both of which are 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) Emergency Planning

In the event that the NRC finds that the lack of progress in completion of the procedures in the Federal Emergency Management Agency's final rule, 44 CFR Part 350, is an indication that a major substantive problem exists in achieving or maintaining an adequate state of emergency preparedness, the provision of 10 CFR Section 50.54(s)(2) will apply.

3.3 INSTRUMENTATION

3.3.6 Containment Ventilation Isolation Instrumentation

LCO 3.3.6 The Containment Ventilation Isolation instrumentation for each Function in Table 3.3.6-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.6-1.

ACTIONS

-----NOTE-----
Separate Condition entry is allowed for each Function.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One radiation monitoring channel inoperable.	A.1 Restore the affected channel to OPERABLE status.	4 hours
B. One or more automatic actuation trains inoperable. <u>OR</u> Two radiation monitoring channels inoperable. <u>OR</u> Required Action and associated Completion Time of Condition A not met.	B.1 Enter applicable Conditions and Required Actions of LCO 3.6.3, "Containment Isolation Valves," for containment purge valves made inoperable by isolation instrumentation.	Immediately

SURVEILLANCE REQUIREMENTS

-----NOTE-----
Refer to Table 3.3.6-1 to determine which SRs apply for each Containment
Ventilation Isolation Function.

SURVEILLANCE	FREQUENCY
SR 3.3.6.1 Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
-----NOTE----- This Surveillance is only applicable to the actuation logic of the ESFAS Instrumentation. -----	
SR 3.3.6.2 Perform ACTUATION LOGIC TEST.	In accordance with the Surveillance Frequency Control Program
-----NOTE----- This Surveillance is only applicable to the master relays of the ESFAS Instrumentation. -----	
SR 3.3.6.3 Perform MASTER RELAY TEST.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
SR 3.3.6.4 Perform COT.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.5 Perform SLAVE RELAY TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.6 Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program

Containment Ventilation Isolation Instrumentation

3.3.6

Table 3.3.6-1 (page 1 of 1)
Containment Ventilation Isolation Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	SURVEILLANCE REQUIREMENTS	TRIP SETPOINT
1. Manual Initiation - Phase A	Refer to LCO 3.3.2, "ESFAS Instrumentation," Function 3.a.1, for all initiation functions and requirements.			
2. Manual Initiation - Phase B	Refer to LCO 3.3.2, "ESFAS Instrumentation," Function 3.b.1, for all initiation functions and requirements.			
3. Automatic Actuation Logic and Actuation Relays	1,2,3,4	2 trains	SR 3.3.6.2 SR 3.3.6.3 SR 3.3.6.5	NA
4. Containment Radiation-High	1,2,3,4	2	SR 3.3.6.1 SR 3.3.6.4 SR 3.3.6.6	(a)
5. Safety Injection	Refer to LCO 3.3.2, "ESFAS Instrumentation," Function 1, for all initiation functions and requirements.			

(a) Trip setpoint shall be established at $\leq 2 \times$ background in the Containment Building at RTP.

3.9 REFUELING OPERATIONS

3.9.4 Containment Penetrations

- LCO 3.9.4 The containment penetrations shall be in the following status:
- a. One door in the personnel air lock closed and the equipment hatch held in place by ≥ 4 bolts;
 - b. One door in the emergency air lock closed; and
 - c. Each penetration providing direct access from the containment atmosphere to the outside atmosphere closed by a manual or automatic isolation valve, blind flange, or equivalent.

-----NOTE-----
 LCO 3.9.4.a is not required to be met when in compliance with LCO 3.7.13, "Fuel Handling Building Exhaust Filter Plenum (FHB) Ventilation System," or its associated Conditions and Required Actions.

APPLICABILITY: During movement of RECENTLY IRRADIATED FUEL assemblies within containment.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more containment penetrations not in required status.	A.1 Suspend movement of RECENTLY IRRADIATED FUEL assemblies within containment.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.9.4.1 Verify each required containment penetration is in the required status.	In accordance with the Surveillance Frequency Control Program



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. 184
License No. NPF-37

- 1 The U.S. Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Exelon Generation Company, LLC (the licensee) dated December 21, 2012, 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. 184 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 165 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Travis L. Tate, Chief
Plant Licensing III-2 and
Planning and Analysis Branch
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical
Specifications and Facility Operating License

Date of Issuance: July 21, 2014



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. 184
License No. NPF-66

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Exelon Generation Company, LLC (the licensee) dated December 21, 2012, 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 and Environmental Protection Plan

The Technical Specifications contained in Appendix A (NUREG-1113), as revised through Amendment No. 184 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 165 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Travis L. Tate, Chief
Plant Licensing III-2 and
Planning Analysis Branch
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical
Specifications and Facility Operating License

Date of Issuance: July 21, 2014

ATTACHMENT TO LICENSE AMENDMENT NOS. 184 AND 184

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

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

Replace the following pages of the Facility Operating License and Appendix A Technical Specifications (TSs) with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Remove

Insert

License NPF-37
Page 3

License NPF-37
Page 3

License NPF-66
Page 3

License NPF-66
Page 3

TSs

3.3.6-1
3.3.6-2
3.3.6-3
3.3.6-4
3.3.6-5
3.9.4-1
3.9.4-2

TSs

3.3.6-1
3.3.6-2
3.3.6-3
3.3.6-4

3.9.4-1
3.9.4-2

- (4) Pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess, and use in amounts as required any byproduct, source and special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and
- (5) Pursuant to the Act and 10 CFR Parts 30, 40 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.

C. This license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth in 10 CFR Chapter I and is subject to all applicable provisions of the Act and to the rules, regulations and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

(1) Maximum Power Level

The licensee is authorized to operate the facility at reactor core power levels not in excess of 3645 megawatts thermal (100 percent power) in accordance with the conditions specified herein.

(2) Technical Specifications

The Technical Specifications contained in Appendix A as revised through Amendment No. 184 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) Deleted.

(4) Deleted.

(5) Deleted.

(6) The license shall implement and maintain in effect all provisions of the approved fire protection program as described in the licensee's Fire Protection Report, and as approved in the SER dated February 1987 through Supplement No. 8, subject to the following provision:

The licensee may make changes to the approved fire protection program without prior approval of the Commission only if those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire.

- (3) Pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess and use at an time any byproduct, source and special nuclear material as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;
 - (4) Pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess, and use in amounts as required any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and
 - (5) Pursuant to the Act and 10 CFR Parts 30, 40 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.
- C. The license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth in 10 CFR Chapter I and is subject to all applicable provisions of the Act and to the rules, regulations and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:
- (1) **Maximum Power Level**

The licensee is authorized to operate the facility at reactor core power levels not in excess of 3645 megawatts thermal (100 percent rated power) in accordance with the conditions specified herein.
 - (2) **Technical Specifications**

The Technical Specifications contained in Appendix A (NUREG-1113), as revised through Amendment No. 184 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) Deleted.
 - (4) Deleted.
 - (5) Deleted.

3.3 INSTRUMENTATION

3.3.6 Containment Ventilation Isolation Instrumentation

LCO 3.3.6 The Containment Ventilation Isolation instrumentation for each Function in Table 3.3.6-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.6-1.

ACTIONS

-----NOTE-----
Separate Condition entry is allowed for each Function.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One radiation monitoring channel inoperable.	A.1 Restore the affected channel to OPERABLE status.	4 hours
B. One or more automatic actuation trains inoperable. <u>OR</u> Two radiation monitoring channels inoperable. <u>OR</u> Required Action and associated Completion Time of Condition A not met.	B.1 Enter applicable Conditions and Required Actions of LCO 3.6.3, "Containment Isolation Valves," for containment purge valves made inoperable by isolation instrumentation.	Immediately

SURVEILLANCE REQUIREMENTS

-----NOTE-----
Refer to Table 3.3.6-1 to determine which SRs apply for each Containment
Ventilation Isolation Function.

SURVEILLANCE	FREQUENCY
SR 3.3.6.1 Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.2 -----NOTE----- This Surveillance is only applicable to the actuation logic of the ESFAS Instrumentation. ----- Perform ACTUATION LOGIC TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.3 -----NOTE----- This Surveillance is only applicable to the master relays of the ESFAS Instrumentation. ----- Perform MASTER RELAY TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.4 Perform COT.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
SR 3.3.6.5 Perform SLAVE RELAY TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.6 Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program

Containment Ventilation Isolation Instrumentation
3.3.6

Table 3.3.6-1 (page 1 of 1)
Containment Ventilation Isolation Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	SURVEILLANCE REQUIREMENTS	TRIP SETPOINT
1. Manual Initiation - Phase A	Refer to LCO 3.3.2, "ESFAS Instrumentation," Function 3.a.1, for all initiation functions and requirements.			
2. Manual Initiation - Phase B	Refer to LCO 3.3.2, "ESFAS Instrumentation," Function 3.b.1, for all initiation functions and requirements.			
3. Automatic Actuation Logic and Actuation Relays	1,2,3,4	2 trains	SR 3.3.6.2 SR 3.3.6.3 SR 3.3.6.5	NA
4. Containment Radiation-High	1,2,3,4	2	SR 3.3.6.1 SR 3.3.6.4 SR 3.3.6.6	(a)
5. Safety Injection	Refer to LCO 3.3.2, "ESFAS Instrumentation," Function 1, for all initiation functions and requirements.			

(a) Trip setpoint shall be established at $\leq 2 \times$ background in the Containment Building at RTP.

3.9 REFUELING OPERATIONS

3.9.4 Containment Penetrations

- LCO 3.9.4 The containment penetrations shall be in the following status:
- a. One door in the personnel air lock closed and the equipment hatch held in place by ≥ 4 bolts;
 - b. One door in the emergency air lock closed; and
 - c. Each penetration providing direct access from the containment atmosphere to the outside atmosphere closed by a manual or automatic isolation valve, blind flange, or equivalent.

-----NOTE-----
 LCO 3.9.4.a is not required to be met when in compliance with LCO 3.7.13, "Fuel Handling Building Exhaust Filter Plenum (FHB) Ventilation System," or its associated Conditions and Required Actions.

APPLICABILITY: During movement of RECENTLY IRRADIATED FUEL assemblies within containment.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more containment penetrations not in required status.	A.1 Suspend movement of RECENTLY IRRADIATED FUEL assemblies within containment.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.9.4.1 Verify each required containment penetration is in the required status.	In accordance with the Surveillance Frequency Control Program



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 178 TO FACILITY OPERATING LICENSE NO. NPF-72,
AMENDMENT NO. 178 TO FACILITY OPERATING LICENSE NO. NPF-77,
AMENDMENT NO. 184 TO FACILITY OPERATING LICENSE NO. NPF-37,
AND AMENDMENT NO. 184 TO FACILITY OPERATING LICENSE NO. NPF-66

EXELON GENERATION COMPANY, LLC

BRAIDWOOD STATION, UNITS 1 AND 2

BYRON STATION, UNIT NOS. 1 AND 2

DOCKET NOS. STN 50-456, STN 50-457,

STN 50-454, AND STN 50-455

1.0 INTRODUCTION

By application dated December 21, 2012 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML12356A475), Exelon Generation Company, LLC (the licensee) submitted a license amendment request to the U. S. Nuclear Regulatory Commission (NRC or Commission) for the Braidwood Station, Units 1 and 2, and Byron Station, Unit Nos. 1 and 2 (Braidwood/Byron). The amendment proposes to revise Footnote (b) of technical specification (TS) Table 3.3.6-1, "Containment Ventilation Isolation Instrumentation" regarding the "Containment Radiation – High" trip setpoint for two containment area radiation monitors.

Specifically, the proposed change would revise the "Containment Radiation – High" trip setpoint from a submersion dose rate of < 10 milliroentgen per hour (mR/hr) in the containment building, to < 2 times the containment building background radiation reading at rated thermal power. In support of the proposed setpoint change, the licensee also proposes to make a change to TS 3.9.4, "Containment Penetrations" by deleting limiting condition for operation (LCO) 3.9.4. Item c.2, which currently allows the option of moving RECENTLY IRRADIATED FUEL with the containment purge valves open but capable of being closed by an OPERABLE containment ventilation isolation system.

Enclosure 5

2.0 REGULATORY EVALUATION

The NRC staff considered the following regulatory requirements and guidance in assessing the proposed TS changes:

NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants – LWR [light-water reactor] Edition," Section 6.2.4, "Containment Isolation System," which provides acceptable design criteria for containment isolation systems. NUREG-0800, Branch Technical Position (BTP) 6-4, "Containment Purging During Normal Plant Operations," Position 1.e, states that instrumentation and control systems provided to isolate the purge system lines should be independent and actuated by diverse parameters (e.g., containment pressure, safety injection (SI) actuation, and containment radiation level).

NUREG-0737, "Clarification of TMI [Three Mile Island] Action Plan Requirements," November 1980, Item II.E.4.2, "Containment isolation dependability," Position 7, which states that containment purge and vent isolation valves must close on a high-radiation signal. The isolation signal functions to automatically isolate any open ventilation isolation valves in the event containment radiation levels rise above anticipated levels, terminating the containment release.

NUREG-1431, "Standard Technical Specifications, Westinghouse Plant," which provides a containment high-radiation setpoint, which generates a containment ventilation isolation signal, consistent with the proposed setpoint for Braidwood/Byron.

Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.36(c)(2), which defines the LCO as the lowest functional capability or performance levels of equipment required for safe operation of the facility. When an LCO of a nuclear reactor is not met, the licensee shall shut down the reactor or follow any remedial action permitted by the TSs until the condition can be met.

Further, 10 CFR 50.36(c)(2)(ii) requires that a TS LCO must be established for, among others, 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.

Section 50.67 of 10 CFR, "Accident source term," and the guidance described in Regulatory Guide (RG) 1.183, "Alternative Radiological Source Terms for Evaluating Design Basis Accidents at Nuclear Power Reactors."

3.0 TECHNICAL EVALUATION

3.1 System Description

The primary containment purge system is subdivided into three subsystems: miniflow purge, normal purge, and post-loss of coolant accident (LOCA) purge. These subsystems serve the containment during normal plant operating conditions, during planned reactor shutdowns, and during post-LOCA operating conditions. An independent purge system is provided for each

unit's containment. At Braidwood/Byron, the normal purge valves are maintained sealed closed in MODES 1 through 4, as required by TS 3.6.3, "Containment Isolation Valves," and associated TS Bases Table 3.6.3-1, "Primary Containment Isolation Valves," and are also normally maintained sealed closed during MODES 5 and 6 and defueled as noted in TS Bases 3.6.3.

According to the licensee's updated final safety analysis report (UFSAR), these subsystems can be described as follows.

Miniflow Purge System

The miniflow purge system may be used during MODES 1, 2, 3, or 4 to reduce the concentration of noble gases within containment prior to and during personnel access and to equalize internal and external pressures as the valves used in the mini-purge system are designed to meet the requirements for automatic containment isolation valves. These functions are accomplished under administrative control as required by the TS. The miniflow purge system may also be used during shutdown conditions (i.e., MODES 5 and 6, or defueled).

Normal Purge System

The normal purge system was originally designed to be used during shutdown conditions (i.e., MODES 5 and 6, or defueled) to supply outside air into the containment for ventilation and cooling or heating and to reduce the concentration of noble gases within containment prior to and during personnel access. However, the normal purge system is not normally used. The supply and exhaust lines each contain two isolation valves. Because of their large size, the 48-inch purge valves are not qualified for automatic closure from their open position under design basis accident (DBA) conditions. Therefore, the 48-inch purge valves are required to be maintained sealed closed in MODES 1, 2, 3, and 4 to ensure the containment boundary is maintained (see TS 3.6.3, "Containment Isolation Valves," and associated TS Bases Table 3.6.3-1, "Primary Containment Isolation Valves"). The 48-inch purge valves are also normally maintained sealed closed during shutdown conditions (i.e., MODES 5 and 6, or defueled) since the normal purge system is not normally used (see TS Bases 3.6.3, "Containment Isolation Valves").

Post-LOCA Purge System

The combustible gas control system as defined by the requirements of 10 CFR 50.44, "Combustible gas control for nuclear power reactors," consists of a hydrogen monitoring system and a mixing system. Based on the revision to 10 CFR 50.44, which eliminated the design basis LOCA hydrogen release, the hydrogen recombiners and backup hydrogen vent and purge systems (i.e., post-LOCA purge system) are no longer required; however, the system remains in place and could be utilized following an accident.

3.2 Evaluation of Proposed Change on Primary Containment Purge System

The containment ventilation isolation radiation monitors (RE-AR011 and RE-AR012) serve two primary functions, they:

- a. act as backup to the SI signal to ensure closing of the purge valves; and
- b. are the primary means for automatically isolating containment in the event of a fuel-handling accident (FHA) in containment.

The licensee indicates in its December 21, 2012, submittal that the safety analyses assume that the containment remains intact with penetrations unnecessary for core cooling isolated early in the event (i.e., within approximately 60 seconds). The isolation of the purge valves has not been analyzed mechanistically in the dose calculations, although its rapid isolation is assumed (i.e., the mini-purge system valves are capable of closing in 5 seconds, well within the assumed 60 seconds). The containment isolation in turn ensures meeting the containment leakage rate assumptions of the safety analyses, and ensures that the calculated accident radiological doses are below 10 CFR 50.67, "Accident source term," limits.

In MODES 1 through 4, the DBAs that result in a release of radioactive material within containment are a LOCA, main steamline break (MSLB), and control rod ejection accident (CREA). The licensee states that in the analyses for each of these accidents, it is assumed that containment isolation valves are either closed or function to close within the required isolation time following event initiation. This ensures that potential paths to the environment through containment isolation valves (including containment purge valves) are minimized. The safety analyses assume that the 48-inch purge valves are closed at event initiation. In MODE 6 (i.e., Refueling), the containment ventilation isolation radiation monitors are also credited for containment isolation during an FHA involving RECENTLY IRRADIATED FUEL.

The guidance to close the containment purge and ventilation isolation valves upon receipt of a high-radiation signal in containment comes from NUREG-0737, "Clarification of TMI Action Plan Requirements," Item II.E.4.2, "Containment isolation dependability," Position 7, which states that containment purge and vent isolation valves must close on a high-radiation signal.

Additional guidance regarding the containment isolation system attributes is given in NUREG-0800, Section 6.2.4, "Containment Isolation System," and NUREG-0800, BTP 6-4, "Containment Purging During Normal Plant Operations." The 8-inch post-LOCA purge and miniflow purge valves meet the guidance of BTP 6-4. Based on NUREG-0452, "Standard Technical Specifications for Westinghouse Pressurized Water Reactors," Revision 4, Fall 1981 (ADAMS Accession No. ML102590431), the recommended setpoint value for the containment purge and exhaust isolation signal (for the containment area radiation monitors) was " $\leq 2 \times$ background," applicable in MODE 6 only. The recommended setpoint value for the purge and exhaust isolation signal for reactor coolant system (RCS) leakage detection, applicable in MODES 1-4, (from the containment process radiation monitors) was also " $\leq 2 \times$ background." However, Braidwood/Byron chose a setpoint "such that actual submersion dose rate is < 10 mR/hr in the Containment Building."

The term "submersion dose" refers to the total effective dose equivalent (i.e., both internal and external) attributed to being immersed in a cloud of radioactive material, primarily noble gases. Therefore, the current trip setpoint is referring to a radiation level attributable to a gaseous concentration in containment in addition to the normal background radiation level in the

containment building. Simplistically, the trip setpoint is referred to as " ≤ 10 mR/hr above background."

The licensee states that this current setpoint has shown to be overly conservative and has caused unnecessary operator burden due to the distraction associated with frequent setpoint changes, and frequent alert alarms and high alarms, with associated unwarranted containment isolation signals. Maintaining the setpoint at ≤ 10 mR/hr above background during power ascension following a refueling outage and during routine power level changes requires frequent setpoint changes since containment background radiation level is proportional to power level. In the licensee's submittal, several recent events were listed to support this claim that the current setpoint is too small of a value above the containment background radiation level.

In order to eliminate this unnecessary operator burden and distraction, the licensee proposes to change the "Containment Radiation – High" trip setpoint value to ≤ 2 times containment background at rated thermal power (RTP). The suggested (i.e., bracketed) value in NUREG-1431, "Standard Technical Specifications, Westinghouse Plants," April 2012 (ADAMS Accession No. ML12100A222), is given as " $\leq [2 \times \text{background}]$." The proposed change would also clarify the suggested NUREG-1431 value to " $\leq 2 \times \text{background at RTP}$ " to avoid the need for setpoint changes during power ascension following a unit startup or during up and down power ramping maneuvers. The NRC staff finds this proposed setpoint change acceptable since it meets the intent of the guidance in NUREG-1431.

In its submittal dated December 21, 2012, the licensee states that a nominal value for the containment background radiation level at 100 percent power (i.e., RTP) at Braidwood/Byron ranges from approximately 30 - 50 mR/hr. Therefore, the proposed "Containment Radiation – High" trip setpoint of $\leq 2 \times \text{background at RTP}$ will be in the range of approximately 60 - 100 mR/hr, depending on actual containment conditions.

TS 3.6.4, "Containment Pressure," requires that "Containment pressure shall be ≥ -0.1 psig [pounds per square inch gage] and $\leq +1.0$ psig." Due to variations in internal and external containment atmospheric conditions, the containment pressure slowly increases (or can decrease) with time which requires periodic venting to remain within the TS upper pressure limit. Prior to venting, a containment gas sample is drawn and analyzed for radionuclide concentrations. Based on the radionuclide concentrations, an assumed conservative vent flow rate and predetermined venting time duration, a resultant dose at the site boundary is calculated. This calculation is done in accordance with the off-site dose calculation manual methodology that ensures compliance with 10 CFR 20 limits. The "Containment Radiation - High" trip setpoint is not used in this calculation and has no impact on this evolution and resultant release. Based on this information the NRC staff agrees that the "Containment Radiation - High" trip setpoint has no impact on routine containment venting evolutions at power.

Since the proposed amendment does not change the design or operation of the primary containment purge systems, the NRC staff determined that the systems continue to meet the guidance of NUREG 0800, Section 6.2.4; NUREG-0800, BTP 6-4; NUREG-0737, and NUREG-1431.

3.3 Evaluation of Proposed Change on Radiological Consequence

The licensee proposes to revise Footnote (b) of TS Table 3.3.6-1, "Containment Ventilation Isolation Instrumentation," which specifies the "Containment Radiation – High" trip setpoint for two containment area radiation monitors. The licensee states that upon sensing a high-radiation condition, these area radiation monitors provide an isolation signal to the containment normal purge, minipurge and post-LOCA systems' containment isolation valves. This will isolate the containment atmosphere from the environment to minimize the release of radioactivity in the event of an accident. The licensee states that the containment isolation in turn ensures meeting the containment leakage rate assumptions of the safety analyses, and ensures that the calculated accident radiological doses are below 10 CFR 50.67 limits as noted in the Braidwood/Byron DBA analysis.

Footnote (b) of TS Table 3.3.6-1, "Containment Ventilation Isolation Instrumentation," which specifies the "Containment Radiation – High" trip setpoint for two containment area radiation monitors is proposed by the licensee to be renumbered to Footnote (a) and revised to state: "Trip setpoint shall be established at $\leq 2 \times$ background in the Containment Building at RTP," where RTP is 100 percent power.

The licensee asserts that the LOCA, FHA in containment, and CREA could potentially generate a high-radiation condition in containment and could be impacted by the proposed revision to the "Containment Radiation – High" trip setpoint. This is because the LOCA, the FHA in containment, and the CREA assume the release of radioactive material to or within the containment. The radiation releases for the steam generator tube rupture (SGTR) and reactor coolant pump locked rotor accident (LRA) are assumed to come from the steam generator pressure operated relief valves. The worst-case MSLB assumes a break outside of containment. Therefore, the NRC staff determined that the SGTR, LRA, and MSLB analysis will not be impacted by the proposed changes to TS 3.3.6 because these accidents do not involve radioactive releases into containment.

The licensee asserts that the LOCA and CREA could potentially generate an SI signal with an associated containment high-radiation condition. The SI signal would initiate a containment ventilation isolation signal. The SI signal is backed up by the "Containment Radiation – High" signal which provides an independent containment ventilation isolation signal. Therefore, if the containment mini-purge system or post-LOCA system isolation valves were open at the onset of one of the subject accidents; and the SI signal failed to generate a containment ventilation isolation signal, the backup signal (i.e., the "Containment Radiation – High" trip setpoint) would generate an independent signal to close these containment ventilation isolation valves.

The NRC staff reviewed the current Braidwood/Byron LOCA and CREA analyses and assessed the impact the proposed change to the setpoint has on the accident analysis dose results. The NRC staff finds that the Braidwood/Byron DBA radiological consequence analyses will not be affected by the proposed change because the radiation monitor setpoint is not considered in the analyses. Also, any dose that could be specifically attributed to containment isolation valve closure time will be bounded by the associated accident dose results, because the current analysis assumes a prompt purge valve isolation time (i.e., approximately 60 seconds). The

total time for the radiation monitor sensing and response time, and actual valve design closure time is approximately 7 seconds, which is bounded by the 60 seconds isolation time assumption. The licensee has not modified any of the dose consequence analyses in conjunction with this proposed change. The licensee has not proposed to make any changes to the Bases for this TS which states that the "safety analyses assume that the containment remains intact with penetrations unnecessary for core cooling isolated early in the event (i.e., within approximately 60 seconds)."

Based on the above discussion, the NRC staff concludes that the current calculated LOCA and CREA dose results remain bounding. Therefore, the proposed change is acceptable with respect to the radiological consequences of DBAs.

The NRC staff also reviewed the current Braidwood/Byron FHA analysis and considered two accident locations; the fuel-handling building (FHB) and the containment. The analysis assumes that the dropped assembly has undergone 48 hours of radioactive decay. No filtration of the release or automatic isolation of the accident location (either the containment or the FHB) is assumed. Essentially the entire radioactivity released from the damaged fuel is assumed to reach the environment within 2 hours. Because no containment ventilation isolation is assumed to occur in the FHA analysis, changing the "Containment Radiation – High" setpoint will not have an impact on the FHA analysis. Therefore, the NRC staff finds that the current calculated FHA dose results will remain bounding with the proposed change.

In support of the proposed setpoint change, the licensee also proposes to make the following changes to TS 3.9.4:

1. delete LCO 3.9.4.c.2 which partially defines the status of containment penetrations during movement of RECENTLY IRRADIATED FUEL within the containment; and
2. delete Surveillance Requirement (SR) 3.9.4.2 and SR 3.9.4.3 which are surveillances for the containment purge valves.

The licensee states that this LCO would be deleted to eliminate any potential release from the containment purge valves as all penetrations providing direct access from the containment atmosphere to the outside atmosphere will now be closed by a manual or automatic isolation valve, blind flange, or equivalent during movement of RECENTLY IRRADIATED FUEL. The licensee is also proposing four other additional TS changes associated with the deletion of LCO 3.9.4, Item c.2, for consistency. Those changes are deleting a NOTE regarding MODE applicability, deleting a CONDITION related only to LCO 3.9.4.c.2, deleting a footnote regarding MODE applicability, and deleting two surveillances related to LCO 3.9.4.c.2.

The NRC staff determined that only the FHA analysis could be impacted by the proposed change, because it is the DBA that involves moving fuel. In the current Braidwood/Byron FHA analysis, the licensee also evaluated fuel movement before 48 hours after shutdown. This FHA analysis is assumed to occur 6 hours after shutdown. It is also assumed that (a) containment closure is established and/or (b) the FHB ventilation system (as applicable to the accident location) and the control room filtration system are operable according to the TS

requirements. The licensee's analysis of the FHA for recently irradiated fuel was reviewed and approved by the NRC by letter dated September 8, 2006 (ADAMS Accession No. ML062340434).

The NRC staff reviewed the current Braidwood/Byron FHA analyses. For assumption (a), the NRC staff concludes that the proposed change has no impact on the current dose results for this scenario because the current analysis does not assign a specific dose to this case as the containment is assumed to be isolated, and for assumption (b), the NRC staff concludes that the proposed change has no impact on the current dose results because the current analysis states that the negative pressure ensures that any radioactivity released to the containment atmosphere will either remain in the containment or be filtered through an FHB ventilation system train. As a result of the proposed amendment, all penetrations providing direct access from the containment atmosphere to the outside atmosphere will be closed by a manual or automatic isolation valve, blind flange, or equivalent.

The NRC staff finds that the Braidwood/Byron DBA radiological consequence analyses will not be affected by the proposed amendment because TS 3.9.4 will still assure containment closure and will not impact the assumptions in the DBA analyses. Also, deleting the SRs will not have an impact on the accident analyses. Therefore, the staff concludes that this change is acceptable with respect to the radiological consequences of DBAs.

3.4 Conclusions Regarding the Proposed TS Changes

TS 3.3.6

In its submittal dated December 21, 2012, the licensee proposes to make the following changes to TS 3.3.6, which the NRC staff finds to be acceptable for the following reasons.

1. delete the NOTE in TS 3.3.6 Condition B regarding MODE applicability;

The TS 3.3.6 applicability is specified in Table 3.3.6-1. The licensee proposes to delete note (a) from the Table. Note (a) is the only other applicable condition besides MODE 1, 2, 3, or 4, as specified in the note. Table 3.3.6-1 will then identify the applicable MODEs as 1, 2, 3, 4. Based on the above, the NRC staff concludes that with note (a) deleted, it is acceptable to delete the note in TS 3.3.6 Condition B regarding MODE applicability because it is redundant and could cause confusion.

2. delete TS 3.3.6 Condition C; which address inoperable radiation monitoring channels;

TS 3.3.6 Condition C is only applicable when Item c.2 of LCO 3.9.4 is required. The licensee proposes to delete Item c.2 of LCO 3.9.4. Based on the above, the NRC staff concludes that with Item c.2 of LCO 3.9.4 deleted, it is acceptable to delete TS 3.3.6 Condition C.

3. delete Footnote (a) of TS Table 3.3.6-1, "Containment Ventilation Isolation Instrumentation," which identifies a MODE of APPLICABILITY for the associated FUNCTION;

3. delete Footnote (a) of TS Table 3.3.6-1, "Containment Ventilation Isolation Instrumentation," which identifies a MODE of APPLICABILITY for the associated FUNCTION;
Footnote (a) of TS Table 3.3.6-1 refers to Item c.2 of TS 3.9.4. The licensee proposes to delete Item c.2 of LCO 3.9.4. Based on the above, the NRC staff concludes that with Item c.2 of LCO 3.9.4 deleted, it is acceptable to delete Footnote (a) of TS Table 3.3.6-1.
4. revise Footnote (b) of TS Table 3.3.6-1, "Containment Ventilation Isolation Instrumentation," which specifies the "Containment Radiation – High" trip setpoint for two containment area radiation monitors. The proposed revision would change the footnote to Footnote (a) and would state, "Trip setpoint shall be established at ≤ 2 x background in the Containment at RTP."

Based on the information in Sections 3.2 and 3.3 of this safety evaluation, which shows that the revised TS has no impact on the primary containment purge system and does not change the radiological consequences of accidents, the NRC staff concludes that the proposed TS revision is acceptable.

TS 3.9.4

In its submittal dated December 21, 2012, the licensee proposes to make the following changes to TS 3.9.4, which the NRC staff finds to be acceptable for the following reasons.

1. delete LCO 3.9.4.c.2 which partially defines the status of containment penetrations during movement of RECENTLY IRRADIATED FUEL within the containment;

LCO 3.9.4.c.2 allows containment penetrations to be open as long as they are capable of being closed by an OPERABLE Containment Ventilation Isolation System. The NRC staff determined that with this LCO deleted, all containment penetrations must be closed as specified in LCO 3.9.4.c.1, when this LCO is applicable. The NRC staff concludes that this is conservative and therefore is acceptable.

2. delete SR 3.9.4.2 and SR 3.9.4.3 which are surveillances for the containment purge valves.

The licensee proposes to delete LCO 3.9.4.c.2, which gave it the option to have the containment purge valves open. Based on these valves now being closed, the NRC staff concludes that it is not necessary to have SRs that test their closing and therefore concludes that deleting SR 3.9.4.2 and SR 3.9.4.3 is acceptable.

4.0 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.

5.0 ENVIRONMENTAL CONSIDERATION

The amendments change requirements with respect to the installation or use of a facility's components located within the restricted area as defined in 10 CFR Part 20 and change SRs. 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, which was published in the *Federal Register* on April 16, 2013 (78 FR 22568). 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.

6.0 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) there is reasonable assurance that 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.

Principal Contributor: Bryan Lee, Dylanne Duvigneaud

Date of issuance: July 21, 2014

Mr. Michael J. Pacilio
 President and Chief Nuclear Officer (CNO)
 Exelon Generation Company, LLC
 4300 Winfield Road
 Warrenville, IL 60555

SUBJECT: BRAIDWOOD STATION, UNITS 1 AND 2, AND BYRON STATION, UNIT NOS. 1 AND 2 - ISSUANCE OF AMENDMENTS TO REVISE TECHNICAL SPECIFICATION 3.3.6, "CONTAINMENT VENTILATION ISOLATION INSTRUMENTATION" (TAC NOS. MF0456, MF0457, MF0458, AND MF0459)

Dear Mr. Pacilio:

The U.S. Nuclear Regulatory Commission (the Commission) has issued the enclosed Amendment No. 178 to Facility Operating License No. NPF-72 and Amendment No. 178 to Facility Operating License No. NPF-77 for the Braidwood Station, Units 1 and 2, respectively, and Amendment No. 184 to Facility Operating License No. NPF-37 and Amendment No. 184 to Facility Operating License No. NPF-66 for the Byron Station, Unit Nos. 1 and 2, respectively. The amendments are in response to your application dated December 21, 2012 (Agencywide Documents Access and Management System Accession No. ML12356A475).

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

Sincerely,
 /RA/
 Joel S. Wiebe, Senior Project Manager
 Plant Licensing III-2 and
 Planning and Analysis Branch
 Division of Operating Reactor Licensing
 Office of Nuclear Reactor Regulation

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

Enclosures:

1. Amendment No. 178 to NPF-72
2. Amendment No. 178 to NPF-77
3. Amendment No. 184 to NPF-37
4. Amendment No. 184 to NPF-66
5. Safety Evaluation

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*via memo **via e-mail

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