



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

June 19, 2015

Mr. Bryan C. Hanson
Senior Vice President
Exelon Generation Company, LLC
President and Chief Nuclear Officer (CNO)
Exelon Nuclear
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: BRAIDWOOD STATION, UNITS 1 AND 2; BYRON STATION, UNIT NOS. 1 AND 2; CLINTON POWER STATION, UNIT 1; DRESDEN NUCLEAR POWER STATION, UNITS 2 AND 3; LASALLE COUNTY STATION, UNITS 1 AND 2; AND QUAD CITIES NUCLEAR POWER STATION, UNITS 1 AND 2 - ISSUANCE OF AMENDMENTS REGARDING ADOPTION OF TECHNICAL SPECIFICATION TASK FORCE (TSTF) TRAVELER TSTF-523, "GENERIC LETTER 2008-01, MANAGING GAS ACCUMULATION" (TAC NOS. MF4436, MF4437, MF4438, MF4439, MF4440, MF4441, MF4442, MF4443, MF4444, MF4445, MF4446)

Dear Mr. Hanson:

The U.S. Nuclear Regulatory Commission (the Commission) has issued the enclosed Amendment Nos. 183 and 183 to Facility Operating License Nos. NPF-72 and NPF-77 for Braidwood Station, Units 1 and 2, respectively; Amendment Nos. 189 and 189 to Facility Operating License Nos. NPF-37 and NPF-66 for Byron Station, Unit Nos. 1 and 2, respectively; Amendment No. 204 to Facility Operating License No. NPF-62 for Clinton Power Station, Unit 1; Amendment Nos. 244 and 237 to Renewed Facility Operating License Nos. DPR-19 and DPR-25 for Dresden Nuclear Power Station, Units 2 and 3, respectively; Amendment Nos. 214 and 200 to Facility Operating License Nos. NPF-11 and NPF-18 for LaSalle County Station, Units 1 and 2, respectively; and Amendment Nos. 257 and 252 to Renewed Facility Operating License Nos. DPR-29 and DPR-30 for Quad Cities Nuclear Power Station, Units 1 and 2, respectively. These amendments consist of changes to the technical specifications (TSs) and Facility Operating Licenses in response to your application dated July 14, 2014.

The amendments revise and add TS surveillance requirements to address the concerns discussed in Generic Letter 2008-01, "Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems," dated January 11, 2008. The TS changes are based on Technical Specification Task Force (TSTF) Traveler, TSTF-523, Revision 2, "Generic Letter 2008-01, Managing Gas Accumulation," dated February 21, 2013.

B. Hanson

- 2 -

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

Sincerely,

A handwritten signature in black ink, appearing to read 'B. Purnell', is written above the typed name.

Blake Purnell, Project Manager
Plant Licensing III-2 and
Planning and Analysis Branch
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-237, 50-249, 50-254, 50-265,
50-373, 50-374, 50-454, 50-455,
50-456, 50-457, and 50-461

Enclosures:

1. Amendment No. 183 to NPF-72
2. Amendment No. 183 to NPF-77
3. Amendment No. 189 to NPF-37
4. Amendment No. 189 to NPF-66
5. Amendment No. 204 to NPF-62
6. Amendment No. 244 to DPR-19
7. Amendment No. 237 to DPR-25
8. Amendment No. 214 to NPF-11
9. Amendment No. 200 to NPF-18
10. Amendment No. 257 to DPR-29
11. Amendment No. 252 to DPR-30
12. Safety Evaluation

cc w/encls: Distribution via Listserv



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. 183
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 July 14, 2014, 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.

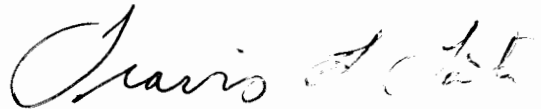
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-72 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 183 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 its date of issuance and shall be implemented within 120 days.

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: June 19, 2015



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. 183
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 July 14, 2014, 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.

Enclosure 2

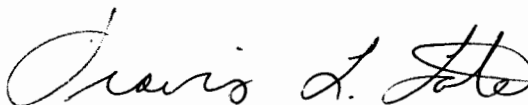
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-77 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 183 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 its date of issuance and shall be implemented within 120 days.

FOR THE NUCLEAR REGULATORY COMMISSION

A handwritten signature in black ink, appearing to read "Travis L. Tate".

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: June 19, 2015

ATTACHMENT TO LICENSE AMENDMENT NOS. 183 AND 183

FACILITY OPERATING LICENSE NO. NPF-72 AND NPF-77

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

Replace the following pages of the Facility Operating Licenses with the attached 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

3.4.6-3

3.4.8-2

3.5.2-3

3.5.2-4

3.6.6-2

3.6.6-3

3.9.5-2

3.9.6-2

Insert

License NPF-72

Page 3

License NPF-77

Page 3

TSs

3.4.6-3

3.4.7-4

3.4.8-2

3.5.2-3

3.5.2-4

3.6.6-2

3.6.6-3

3.9.5-2

3.9.6-2

- (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. 183 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. 183 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.

SURVEILLANCE REQUIREMENTS (continued)

| SURVEILLANCE | | FREQUENCY |
|--------------|--|---|
| SR 3.4.6.3 | Verify correct breaker alignment and indicated power are available to each required pump that is not in operation. | In accordance with the Surveillance Frequency Control Program |
| SR 3.4.6.4 | <p>-----NOTE----- Not required to be performed until 12 hours after entering MODE 4. -----</p> <p>Verify required RHR loop locations susceptible to gas accumulation are sufficiently filled with water.</p> | In accordance with the Surveillance Frequency Control Program |

SURVEILLANCE REQUIREMENTS (continued)

| SURVEILLANCE | | FREQUENCY |
|--------------|--|---|
| SR 3.4.7.4 | Verify required RHR loop locations susceptible to gas accumulation are sufficiently filled with water. | In accordance with the Surveillance Frequency Control Program |

ACTIONS (continued)

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---------------------------------------|---|------------------------------------|
| B. One required RHR loop inoperable. | B.1 Initiate action to restore RHR loop to OPERABLE status. | Immediately |
| C. Two required RHR loops inoperable. | C.1 Suspend all operations involving reduction in RCS boron concentration. <u>AND</u> C.2 Initiate action to restore one RHR loop to OPERABLE status. | Immediately Immediately |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|---|---|
| SR 3.4.8.1 Verify required RHR loop is in operation. | In accordance with the Surveillance Frequency Control Program |
| SR 3.4.8.2 Verify correct breaker alignment and indicated power are available to each required RHR pump that is not in operation. | In accordance with the Surveillance Frequency Control Program |
| SR 3.4.8.3 Verify RHR loop locations susceptible to gas accumulation are sufficiently filled with water. | In accordance with the Surveillance Frequency Control Program |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | | FREQUENCY |
|--------------|--|--|---|
| SR 3.5.2.1 | Verify the following valves are in the listed position with power to the valve operator removed: | | In accordance with the Surveillance Frequency Control Program |
| | <u>Number</u> | <u>Position</u> <u>Function</u> | |
| | MOV SI8806 | Open Suction to SI Pumps | |
| | MOV SI8835 | Open SI Pump Discharge to Reactor Coolant System (RCS) Cold Legs | |
| | MOV SI8813 | Open SI Pump Recirculation to the Refueling Water Storage Tank | |
| | MOV SI8809A | Open RHR Pump Discharge to RCS Cold Legs | |
| | MOV SI8809B | Open RHR Pump Discharge to RCS Cold Legs | |
| | MOV SI8840 | Closed RHR Pump Discharge to RCS Hot Legs | |
| | MOV SI8802A | Closed SI Pump Discharge to RCS Hot Legs | |
| | MOV SI8802B | Closed SI Pump Discharge to RCS Hot Legs | |
| SR 3.5.2.2 | -----NOTE----- Not required to be met for system vent flow paths opened under administrative control. ----- | | In accordance with the Surveillance Frequency Control Program |
| | Verify each ECCS 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. | | |

(continued)

SURVEILLANCE REQUIREMENTS (continued)

| SURVEILLANCE | | FREQUENCY | | | | | | | | |
|---------------------|--|---|-----------------------|----------------|-----------------------------|----------------|---------------------|----------------|----------------------|---|
| SR 3.5.2.3 | Verify ECCS locations susceptible to gas accumulation are sufficiently filled with water. | In accordance with the Surveillance Frequency Control Program | | | | | | | | |
| SR 3.5.2.4 | Verify each ECCS pump's developed head at the test flow point is greater than or equal to the required developed head. | In accordance with the Inservice Testing Program | | | | | | | | |
| SR 3.5.2.5 | Verify each ECCS automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal. | In accordance with the Surveillance Frequency Control Program | | | | | | | | |
| SR 3.5.2.6 | Verify each ECCS pump starts automatically on an actual or simulated actuation signal. | In accordance with the Surveillance Frequency Control Program | | | | | | | | |
| SR 3.5.2.7 | <p>Verify, for each ECCS throttle valve listed below, each position stop is in the correct position:</p> <table><tr><td><u>Valve Number</u></td><td><u>Valve Function</u></td></tr><tr><td>SI8810 A,B,C,D</td><td>Centrifugal Charging System</td></tr><tr><td>SI8816 A,B,C,D</td><td>SI System (Hot Leg)</td></tr><tr><td>SI8822 A,B,C,D</td><td>SI System (Cold Leg)</td></tr></table> | <u>Valve Number</u> | <u>Valve Function</u> | SI8810 A,B,C,D | Centrifugal Charging System | SI8816 A,B,C,D | SI System (Hot Leg) | SI8822 A,B,C,D | SI System (Cold Leg) | In accordance with the Surveillance Frequency Control Program |
| <u>Valve Number</u> | <u>Valve Function</u> | | | | | | | | | |
| SI8810 A,B,C,D | Centrifugal Charging System | | | | | | | | | |
| SI8816 A,B,C,D | SI System (Hot Leg) | | | | | | | | | |
| SI8822 A,B,C,D | SI System (Cold Leg) | | | | | | | | | |
| SR 3.5.2.8 | Verify, by visual inspection, each ECCS train containment sump suction inlet is not restricted by debris and the suction inlet screens show no evidence of structural distress or abnormal corrosion. | In accordance with the Surveillance Frequency Control Program | | | | | | | | |

Containment Spray and Cooling Systems
3.6.6

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 -----NOTE----- Not required to be met for system vent flow paths opened under administrative control. ----- 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. | In accordance with the Surveillance Frequency Control Program |
| SR 3.6.6.2 Operate each containment cooling train fan unit for ≥ 15 minutes. | In accordance with the Surveillance Frequency Control Program |
| SR 3.6.6.3 Verify each containment cooling train cooling water flow rate is ≥ 2660 gpm to each cooler. | In accordance with the Surveillance Frequency Control Program |

(continued)

Containment Spray and Cooling Systems
3.6.6

SURVEILLANCE REQUIREMENTS (continued)

| SURVEILLANCE | | FREQUENCY |
|--------------|---|---|
| SR 3.6.6.4 | Verify each containment spray pump's developed head at the flow test point is greater than or equal to the required developed head. | In accordance with the Inservice Testing Program |
| SR 3.6.6.5 | Verify each automatic containment spray valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal. | In accordance with the Surveillance Frequency Control Program |
| SR 3.6.6.6 | Verify each containment spray pump starts automatically on an actual or simulated actuation signal. | In accordance with the Surveillance Frequency Control Program |
| SR 3.6.6.7 | Verify each containment cooling train starts automatically on an actual or simulated actuation signal. | In accordance with the Surveillance Frequency Control Program |
| SR 3.6.6.8 | Verify each spray nozzle is unobstructed. | Following maintenance that could result in nozzle blockage <u>OR</u> Following fluid flow through the nozzles |
| SR 3.6.6.9 | Verify containment spray locations susceptible to gas accumulation are sufficiently filled with water. | In accordance with the Surveillance Frequency Control Program |

RHR and Coolant Circulation-High Water Level
3.9.5

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|----------------|---|-----------------|
| A. (continued) | A.4 Close all containment penetrations providing direct access from containment atmosphere to outside atmosphere. | 4 hours |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|---|---|
| SR 3.9.5.1 Verify one RHR loop is in operation and circulating reactor coolant at a flow rate of ≥ 1000 gpm. | In accordance with the Surveillance Frequency Control Program |
| SR 3.9.5.2 Verify required RHR loop locations susceptible to gas accumulation are sufficiently filled with water. | In accordance with the Surveillance Frequency Control Program |

RHR and Coolant Circulation-Low Water Level
3.9.6

ACTIONS (continued)

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|------------------------------|---|-----------------|
| B. No RHR loop in operation. | B.1 Suspend operations involving a reduction in reactor coolant boron concentration. | Immediately |
| | <u>AND</u> | |
| | B.2 Initiate action to restore one RHR loop to operation. | Immediately |
| | <u>AND</u> | |
| | B.3 Close all containment penetrations providing direct access from containment atmosphere to outside atmosphere. | 4 hours |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|---|
| SR 3.9.6.1 Verify one RHR loop is in operation and circulating reactor coolant at a flow rate of ≥ 1000 gpm. | In accordance with the Surveillance Frequency Control Program |
| SR 3.9.6.2 Verify correct breaker alignment and indicated power available to the required RHR pump that is not in operation. | In accordance with the Surveillance Frequency Control Program |
| SR 3.9.6.3 Verify RHR loop locations susceptible to gas accumulation are sufficiently filled with water. | 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. 189
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 July 14, 2014, 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.

Enclosure 3

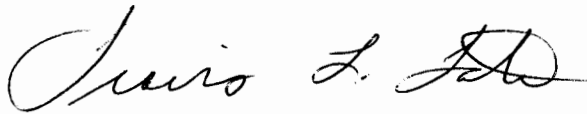
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-37 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 189 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 its date of issuance and shall be implemented within 120 days.

FOR THE NUCLEAR REGULATORY COMMISSION

A handwritten signature in black ink, appearing to read "Travis L. Tate", is positioned above the printed name and title.

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: June 19, 2015



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

EXELON GENERATION COMPANY, LLC

DOCKET NO. 50-455

BYRON STATION, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 189
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 July 14, 2014, 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.

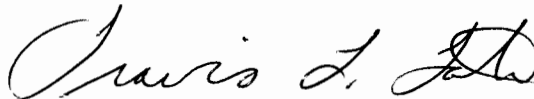
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-66 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A (NUREG-1113), as revised through Amendment No. 189 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 its date of issuance and shall be implemented within 120 days.

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: June 19, 2015

ATTACHMENT TO LICENSE AMENDMENT NOS. 189 AND 189

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 Licenses with the attached pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Remove

License NPF-37
Page 3

License NPF-66
Page 3

TSs

3.4.6-3

3.4.8-2

3.5.2-3

3.5.2-4

3.6.6-2

3.9.5-2

Insert

License NPF-37
Page 3

License NPF-66
Page 3

TSs

3.4.6-3

3.4.7-4

3.4.8-2

3.5.2-3

3.5.2-4

3.6.6-2

3.6.6-4

3.9.5-2

3.9.6-3

- (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. 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. 189 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 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) 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.

B. 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 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. 189 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.

SURVEILLANCE REQUIREMENTS (continued)

| SURVEILLANCE | | FREQUENCY |
|--------------|--|---|
| SR 3.4.6.3 | Verify correct breaker alignment and indicated power are available to each required pump that is not in operation. | In accordance with the Surveillance Frequency Control Program |
| SR 3.4.6.4 | <p>-----NOTE----- Not required to be performed until 12 hours after entering MODE 4. -----</p> <p>Verify required RHR loop locations susceptible to gas accumulation are sufficiently filled with water.</p> | In accordance with the Surveillance Frequency Control Program |

SURVEILLANCE REQUIREMENTS (continued)

| SURVEILLANCE | | FREQUENCY |
|--------------|--|---|
| SR 3.4.7.4 | Verify required RHR loop locations susceptible to gas accumulation are sufficiently filled with water. | In accordance with the Surveillance Frequency Control Program |

ACTIONS (continued)

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---------------------------------------|---|-----------------|
| B. One required RHR loop inoperable. | B.1 Initiate action to restore RHR loop to OPERABLE status. | Immediately |
| C. Two required RHR loops inoperable. | C.1 Suspend all operations involving reduction in RCS boron concentration. | Immediately |
| | <u>AND</u> C.2 Initiate action to restore one RHR loop to OPERABLE status. | Immediately |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|---|---|
| SR 3.4.8.1 Verify required RHR loop is in operation. | In accordance with the Surveillance Frequency Control Program |
| SR 3.4.8.2 Verify correct breaker alignment and indicated power are available to each required RHR pump that is not in operation. | In accordance with the Surveillance Frequency Control Program |
| SR 3.4.8.3 Verify RHR loop locations susceptible to gas accumulation are sufficiently filled with water. | In accordance with the Surveillance Frequency Control Program |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | | FREQUENCY |
|--------------|--|--|---|
| SR 3.5.2.1 | Verify the following valves are in the listed position with power to the valve operator removed: | | In accordance with the Surveillance Frequency Control Program |
| | <u>Number</u> | <u>Position</u> <u>Function</u> | |
| | MOV SI8806 | Open Suction to SI Pumps | |
| | MOV SI8835 | Open SI Pump Discharge to Reactor Coolant System (RCS) Cold Legs | |
| | MOV SI8813 | Open SI Pump Recirculation to the Refueling Water Storage Tank | |
| | MOV SI8809A | Open RHR Pump Discharge to RCS Cold Legs | |
| | MOV SI8809B | Open RHR Pump Discharge to RCS Cold Legs | |
| | MOV SI8840 | Closed RHR Pump Discharge to RCS Hot Legs | |
| | MOV SI8802A | Closed SI Pump Discharge to RCS Hot Legs | |
| | MOV SI8802B | Closed SI Pump Discharge to RCS Hot Legs | |
| SR 3.5.2.2 | -----NOTE----- Not required to be met for system vent flow paths opened under administrative control. ----- | | In accordance with the Surveillance Frequency Control Program |
| | Verify each ECCS 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. | | |

(continued)

SURVEILLANCE REQUIREMENTS (continued)

| SURVEILLANCE | | FREQUENCY | | | | | | | | |
|---------------------|--|---|-----------------------|----------------|-----------------------------|----------------|---------------------|----------------|----------------------|---|
| SR 3.5.2.3 | Verify ECCS locations susceptible to gas accumulation are sufficiently filled with water. | In accordance with the Surveillance Frequency Control Program | | | | | | | | |
| SR 3.5.2.4 | Verify each ECCS pump's developed head at the test flow point is greater than or equal to the required developed head. | In accordance with the Inservice Testing Program | | | | | | | | |
| SR 3.5.2.5 | Verify each ECCS automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal. | In accordance with the Surveillance Frequency Control Program | | | | | | | | |
| SR 3.5.2.6 | Verify each ECCS pump starts automatically on an actual or simulated actuation signal. | In accordance with the Surveillance Frequency Control Program | | | | | | | | |
| SR 3.5.2.7 | <p>Verify, for each ECCS throttle valve listed below, each position stop is in the correct position:</p> <table><tr><td><u>Valve Number</u></td><td><u>Valve Function</u></td></tr><tr><td>SI8810 A,B,C,D</td><td>Centrifugal Charging System</td></tr><tr><td>SI8816 A,B,C,D</td><td>SI System (Hot Leg)</td></tr><tr><td>SI8822 A,B,C,D</td><td>SI System (Cold Leg)</td></tr></table> | <u>Valve Number</u> | <u>Valve Function</u> | SI8810 A,B,C,D | Centrifugal Charging System | SI8816 A,B,C,D | SI System (Hot Leg) | SI8822 A,B,C,D | SI System (Cold Leg) | In accordance with the Surveillance Frequency Control Program |
| <u>Valve Number</u> | <u>Valve Function</u> | | | | | | | | | |
| SI8810 A,B,C,D | Centrifugal Charging System | | | | | | | | | |
| SI8816 A,B,C,D | SI System (Hot Leg) | | | | | | | | | |
| SI8822 A,B,C,D | SI System (Cold Leg) | | | | | | | | | |
| SR 3.5.2.8 | Verify, by visual inspection, each ECCS train containment sump suction inlet is not restricted by debris and the suction inlet screens show no evidence of structural distress or abnormal corrosion. | In accordance with the Surveillance Frequency Control Program | | | | | | | | |

Containment Spray and Cooling Systems
3.6.6

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 -----NOTE----- Not required to be met for system vent flow paths opened under administrative control. ----- 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. | In accordance with the Surveillance Frequency Control Program |
| SR 3.6.6.2 Operate each containment cooling train fan unit for ≥ 15 minutes. | In accordance with the Surveillance Frequency Control Program |

(continued)

Containment Spray and Cooling Systems
3.6.6

SURVEILLANCE REQUIREMENTS (continued)

| SURVEILLANCE | | FREQUENCY |
|--------------|--|---|
| SR 3.6.6.9 | Verify containment spray locations susceptible to gas accumulation are sufficiently filled with water. | In accordance with the Surveillance Frequency Control Program |

RHR and Coolant Circulation-High Water Level
3.9.5

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|----------------|---|-----------------|
| A. (continued) | A.4 Close all containment penetrations providing direct access from containment atmosphere to outside atmosphere. | 4 hours |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|---|---|
| SR 3.9.5.1 Verify one RHR loop is in operation and circulating reactor coolant at a flow rate of ≥ 1000 gpm. | In accordance with the Surveillance Frequency Control Program |
| SR 3.9.5.2 Verify required RHR loop locations susceptible to gas accumulation are sufficiently filled with water. | In accordance with the Surveillance Frequency Control Program |

RHR and Coolant Circulation-Low Water Level
3.9.6

SURVEILLANCE REQUIREMENTS (continued)

| SURVEILLANCE | | FREQUENCY |
|--------------|---|---|
| SR 3.9.6.3 | Verify RHR loop locations susceptible to gas accumulation are sufficiently filled with water. | In accordance with the Surveillance Frequency Control Program |



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

EXELON GENERATION COMPANY, LLC

DOCKET NO. 50-461

CLINTON POWER STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 204
License No. NPF-62

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 July 14, 2014, 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.

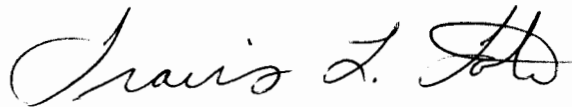
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-62 is hereby amended to read as follows:

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 204, are hereby incorporated into this license. Exelon Generation Company shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of its date of issuance and shall be implemented within 120 days.

FOR THE NUCLEAR REGULATORY COMMISSION

A handwritten signature in black ink, appearing to read "Travis L. Tate".

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: June 19, 2015

ATTACHMENT TO LICENSE AMENDMENT NO. 204

FACILITY OPERATING LICENSE NO. NPF-62

DOCKET NO. 50-461

Replace the following pages of the Facility Operating License with the enclosed pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Remove

License NPF-62
Page 3

TSs

3.4-24

3.4-26

3.5-4

3.5-8

3.5-11

3.6-25

3.6-33

3.9-12

3.9-15

Insert

License NPF-62
Page 3

TSs

3.4-24

3.4-24a

3.4-26

3.5-4

3.5-8

3.5-11

3.6-25

3.6-33

3.9-12

3.9-15

- (4) Exelon Generation Company, pursuant to the Act and to 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;
- (5) 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;
- (6) 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. Mechanical disassembly of the GE14i isotope test assemblies containing Cobalt-60 is not considered separation; and
- (7) Exelon Generation Company, pursuant to the Act and 10 CFR Parts 30, to intentionally produce, possess, receive, transfer, and use Cobalt-60.

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

Exelon Generation Company is authorized to operate the facility at reactor core power levels not in excess of 3473 megawatts thermal (100 percent rated power) in accordance with the conditions specified herein.

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 204, are hereby incorporated into this license. Exelon Generation Company shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

RHR Shutdown Cooling System—Hot Shutdown
3.4.9

ACTIONS (continued)

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|---|---|
| B. No RHR shutdown cooling subsystem in operation. <u>AND</u> No recirculation pump in operation. | B.1 Initiate action to restore one RHR shutdown cooling subsystem or one recirculation pump to operation. | Immediately |
| | <u>AND</u> | |
| | B.2 Verify reactor coolant circulation by an alternate method. | 1 hour from discovery of no reactor coolant circulation |
| | <u>AND</u> | |
| | | Once per 12 hours thereafter |
| | <u>AND</u> | |
| | B.3 Monitor reactor coolant temperature and pressure. | Once per hour |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|---|
| SR 3.4.9.1 -----NOTE----- Not required to be met until 2 hours after reactor steam dome pressure is less than the RHR cut in permissive pressure. ----- Verify one RHR shutdown cooling subsystem or recirculation pump is operating. | In accordance with the Surveillance Frequency Control program |

(continued) |

RHR Shutdown Cooling System—Hot Shutdown
3.4.9

SURVEILLANCE REQUIREMENTS (continued)

| SURVEILLANCE | | FREQUENCY |
|--------------|---|---|
| SR 3.4.9.2 | <p>-----NOTE----- Not required to be performed until 12 hours after reactor steam dome pressure is less than the RHR cut in permissive pressure. -----</p> <p>Verify RHR shutdown cooling subsystem locations susceptible to gas accumulation are sufficiently filled with water.</p> | In accordance with the Surveillance Frequency Control program |

RHR Shutdown Cooling System—Cold Shutdown
3.4.10

ACTIONS (continued)

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|---|---|
| B. No RHR shutdown cooling subsystem in operation. <u>AND</u> No recirculation pump in operation. | B.1 Verify reactor coolant circulating by an alternate method. | 1 hour from discovery of no reactor coolant circulation |
| | <u>AND</u> | <u>AND</u> |
| | B.2 Monitor reactor coolant temperature and pressure. | Once per 12 hours thereafter Once per hour |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|---|
| SR 3.4.10.1 Verify one RHR shutdown cooling subsystem or recirculation pump is operating. | In accordance with the Surveillance Frequency Control Program |
| SR 3.4.10.2 Verify RHR shutdown cooling subsystem locations susceptible to gas accumulation are sufficiently filled with water. | In accordance with the Surveillance Frequency Control Program |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY | | | | | | | | | | | | |
|---------------|--|---|------------------|---|------|-----------------|-----------------|------|-----------------|-----------------|------|-----------------|-----------------|--|
| SR 3.5.1.1 | Verify, for each ECCS injection/spray subsystem, locations susceptible to gas accumulation are sufficiently filled with water. | In accordance with the Surveillance Frequency Control Program | | | | | | | | | | | | |
| SR 3.5.1.2 | <p>-----NOTES-----</p> <p>1. Low pressure coolant injection (LPCI) subsystems may be considered OPERABLE during alignment and operation for decay heat removal with reactor steam dome pressure less than the residual heat removal cut in permissive pressure in MODE 3, if capable of being manually realigned and not otherwise inoperable.</p> <p>2. Not required to be met for system vent flow paths opened under administrative control.</p> <p>-----</p> <p>Verify each ECCS injection/spray subsystem 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.</p> | In accordance with the Surveillance Frequency Control Program | | | | | | | | | | | | |
| SR 3.5.1.3 | Verify ADS accumulator supply pressure is ≥ 140 psig. | In accordance with the Surveillance Frequency Control Program | | | | | | | | | | | | |
| SR 3.5.1.4 | <p>Verify each ECCS pump develops the specified flow rate with the specified pump differential pressure.</p> <table> <tr> <th><u>SYSTEM</u></th><th><u>FLOW RATE</u></th><th><u>PUMP DIFFERENTIAL PRESSURE</u></th></tr> <tr> <td>LPCS</td><td>≥ 5010 gpm</td><td>≥ 290 psid</td></tr> <tr> <td>LPCI</td><td>≥ 5050 gpm</td><td>≥ 113 psid</td></tr> <tr> <td>HPCS</td><td>≥ 5010 gpm</td><td>≥ 363 psid</td></tr> </table> | <u>SYSTEM</u> | <u>FLOW RATE</u> | <u>PUMP DIFFERENTIAL PRESSURE</u> | LPCS | ≥ 5010 gpm | ≥ 290 psid | LPCI | ≥ 5050 gpm | ≥ 113 psid | HPCS | ≥ 5010 gpm | ≥ 363 psid | In accordance with the Inservice Testing Program |
| <u>SYSTEM</u> | <u>FLOW RATE</u> | <u>PUMP DIFFERENTIAL PRESSURE</u> | | | | | | | | | | | | |
| LPCS | ≥ 5010 gpm | ≥ 290 psid | | | | | | | | | | | | |
| LPCI | ≥ 5050 gpm | ≥ 113 psid | | | | | | | | | | | | |
| HPCS | ≥ 5010 gpm | ≥ 363 psid | | | | | | | | | | | | |

(continued)

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|--------------|---|--|
| SR 3.5.2.1 | Verify, for each required low pressure ECCS injection/spray subsystem, the suppression pool water level is ≥ 12 ft 8 inches. | In accordance with the Surveillance Frequency Control Program |
| SR 3.5.2.2 | Verify, for the required High Pressure Core Spray (HPCS) System, the: <ul style="list-style-type: none"> a. Suppression pool water level is ≥ 12 ft 8 inches; or b. RCIC storage tank available water volume is $\geq 125,000$ gal. | In accordance with the Surveillance Frequency Control Program |
| SR 3.5.2.3 | Verify, for each required ECCS injection/spray subsystem, locations susceptible to gas accumulation are sufficiently filled with water. | In accordance with the Surveillance Frequency Control Program |
| SR 3.5.2.4 | <p>-----NOTES-----</p> <ol style="list-style-type: none"> 1. One low pressure coolant injection (LPCI) subsystem may be considered OPERABLE during alignment and operation for decay heat removal, if capable of being manually realigned and not otherwise inoperable. 2. Not required to be met for system vent flow paths opened under administrative control. <p>-----</p> <p>Verify each required ECCS injection/spray subsystem 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.</p> | <p>In accordance with the Surveillance Frequency Control Program</p> |

(continued)

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|---|--|
| <p>SR 3.5.3.1 Verify the RCIC System locations susceptible to gas accumulation are sufficiently filled with water.</p> | <p>In accordance with the Surveillance Frequency Control Program</p> |
| <p>SR 3.5.3.2 -----NOTE----- Not required to be met for system vent flow paths opened under administrative control. ----- Verify each RCIC System 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.</p> | <p>In accordance with the Surveillance Frequency Control Program</p> |
| <p>SR 3.5.3.3 -----NOTE----- Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. ----- Verify, with RCIC steam supply pressure ≤ 1045 psig and ≥ 920 psig, the RCIC pump can develop a flow rate ≥ 600 gpm against a system head corresponding to reactor pressure.</p> | <p>In accordance with the Surveillance Frequency Control Program</p> |
| <p>SR 3.5.3.4 -----NOTE----- Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. ----- Verify, with RCIC steam supply pressure ≤ 150 psig and ≥ 135 psig, the RCIC pump can develop a flow rate ≥ 600 gpm against a system head corresponding to reactor pressure.</p> | <p>In accordance with the Surveillance Frequency Control Program</p> |

(continued)

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|--|
| <p>SR 3.6.1.7.1 -----NOTES-----</p> <ol style="list-style-type: none"> 1. RHR containment spray subsystems may be considered OPERABLE during alignment and operation for decay heat removal when below the RHR cut in permissive pressure in MODE 3 if capable of being manually realigned and not otherwise inoperable. 2. Not required to be met for system vent flow paths opened under administrative control. <p>-----</p> <p>Verify each RHR containment spray subsystem 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.</p> | <p>In accordance with the Surveillance Frequency Control Program</p> |
| <p>SR 3.6.1.7.2 Verify each RHR pump develops a flow rate of ≥ 3800 gpm on recirculation flow through the associated heat exchanger to the suppression pool.</p> | <p>In accordance with the Inservice Testing Program</p> |
| <p>SR 3.6.1.7.3 Verify each RHR containment spray subsystem automatic valve in the flow path actuates to its correct position on an actual or simulated automatic initiation signal.</p> | <p>In accordance with the Surveillance Frequency Control Program</p> |
| <p>SR 3.6.1.7.4 Verify each spray nozzle is unobstructed.</p> | <p>Following activities that could result in nozzle blockage</p> |
| <p>SR 3.6.1.7.5 Verify RHR containment spray subsystem locations susceptible to gas accumulation are sufficiently filled with water.</p> | <p>In accordance with the Surveillance Frequency Control Program</p> |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|--------------|--|---|
| SR 3.6.2.3.1 | Verify each RHR suppression pool cooling subsystem 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 or can be aligned to the correct position. | In accordance with the Surveillance Frequency Control Program |
| SR 3.6.2.3.2 | Verify each RHR pump develops a flow rate ≥ 4550 gpm through the associated heat exchanger to the suppression pool. | In accordance with the Inservice Testing Program |
| SR 3.6.2.3.3 | Verify RHR suppression pool cooling subsystem locations susceptible to gas accumulation are sufficiently filled with water. | In accordance with the Surveillance Frequency Control Program |

ACTIONS (continued)

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|--|---|
| C. No RHR shutdown cooling subsystem in operation. | C.1 Verify reactor coolant circulation by an alternate method. | 1 hour from discovery of no reactor coolant circulation |
| | <u>AND</u> | <u>AND</u> |
| | C.2 Monitor reactor coolant temperature. | Once per 12 hours thereafter Once per hour |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|---|---|
| SR 3.9.8.1 Verify one RHR shutdown cooling subsystem is operating. | In accordance with the Surveillance Frequency Control Program |
| SR 3.9.8.2 Verify required RHR shutdown cooling subsystem locations susceptible to gas accumulation are sufficiently filled with water. | In accordance with the Surveillance Frequency Control Program |

ACTIONS (continued)

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|--|--|
| C. No RHR shutdown cooling subsystem in operation. | C.1 Verify reactor coolant circulation by an alternate method. | 1 hour from discovery of no reactor coolant circulation |
| | AND C.2 Monitor reactor coolant temperature. | AND Once per 12 hours thereafter Once per hour |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|---|
| SR 3.9.9.1 Verify one RHR shutdown cooling subsystem is operating. | In accordance with the Surveillance Frequency Control Program |
| SR 3.9.9.2 Verify RHR shutdown cooling subsystem locations susceptible to gas accumulation are sufficiently filled with water. | In accordance with the Surveillance Frequency Control Program |



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

EXELON GENERATION COMPANY, LLC

DOCKET NO. 50-237

DRESDEN NUCLEAR POWER STATION, UNIT 2

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 244
Renewed License No. DPR-19

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 July 14, 2014, 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 Renewed Facility Operating License No. DPR-19 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 244, are hereby incorporated into the renewed operating license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance and shall be implemented within 120 days.

FOR THE NUCLEAR REGULATORY COMMISSION

A handwritten signature in black ink, appearing to read "Travis L. Tate", is written over a horizontal line.

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 Renewed Facility Operating License

Date of Issuance: June 19, 2015



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

EXELON GENERATION COMPANY, LLC

DOCKET NO. 50-249

DRESDEN NUCLEAR POWER STATION, UNIT 3

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 237
Renewed License No. DPR-25

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 July 14, 2014, 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 3.B. of Renewed Facility Operating License No. DPR-25 is hereby amended to read as follows:

B. Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 237, are hereby incorporated into the renewed operating license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance and shall be implemented within 120 days.

FOR THE NUCLEAR REGULATORY COMMISSION

A handwritten signature in black ink, appearing to read "Travis L. Tate", is written over a horizontal line.

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 Renewed Facility Operating License

Date of Issuance: June 19, 2015

ATTACHMENT TO LICENSE AMENDMENT NOS. 244 AND 237

RENEWED FACILITY OPERATING LICENSE NOS. DPR-19 AND DPR-25

DOCKET NOS. 50-237 AND 50-249

Replace the following pages of the Facility Operating Licenses with the attached pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Remove

License DPR-19

Page 3

License DPR-25

Page 4

TSs

3.4.7-3

3.4.8-2

3.5.1-4

3.5.2-3

3.6.2.3-2

3.6.2.4-2

3.9.8-3

3.9.9-3

Insert

License DPR-19

Page 3

License DPR-25

Page 4

TSs

3.4.7-3

3.4.8-2

3.5.1-4

3.5.2-3

3.6.2.3-2

3.6.2.4-2

3.9.8-3

3.9.9-3

- (2) Exelon Generation Company, LLC, pursuant to the Act and 10 CFR Part 70, to receive, possess and use at any time special nuclear materials as reactor fuel, in accordance with the limitations for storage and amounts required for reactor operation, as described in the Updated Final Safety Analysis Report, as supplemented and amended;
- (3) Exelon Generation Company, LLC, 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, 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 special nuclear materials as may be produced by the operation of the facility.

C. This renewed operating 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; 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 steady state reactor core power levels not in excess of 2957 megawatts thermal (100 percent rated power) in accordance with the conditions specified herein.

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 244, are hereby incorporated into this renewed operating license. The licensee shall operate the facility in accordance with the Technical Specifications.

- (3) Operation in the coastdown mode is permitted to 40% power.

Surveillance Requirement 4.9.A.10 - Diesel Storage Tank Cleaning
(Unit 3 and Unit 2/3 only)

Each of the above Surveillance Requirements shall be successfully demonstrated prior to entering into MODE 2 on the first plant startup following the fourteenth refueling outage (D3R14).

3. This renewed operating license shall be deemed to contain and is subject to the conditions specified in the following Commission regulations: 10 CFR Part 20, Section 30.34 of 10 CFR Part 30, Section 40.41 of 10 CFR Part 40, Sections 50.54 and 50.59 of 10 CFR Part 50, and Section 70.32 of 10 CFR Part 70; 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:

A. Maximum Power Level

The licensee is authorized to operate the facility at steady state power levels not in excess of 2957 megawatts (thermal), except that the licensee shall not operate the facility at power levels in excess of five (5) megawatts (thermal), until satisfactory completion of modifications and final testing of the station output transformer, the auto-depressurization interlock, and the feedwater system, as described in the licensee's telegrams; dated February 26, 1971, have been verified in writing by the Commission.

B. Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 237, are hereby incorporated into this renewed operating license. The licensee shall operate the facility in accordance with the Technical Specifications.

C. Reports

The licensee shall make certain reports in accordance with the requirements of the Technical Specifications.

D. Records

The licensee shall keep facility operating records in accordance with the requirements of the Technical Specifications.

E. Restrictions

Operation in the coastdown mode is permitted to 40% power.

Renewed License No. DPR-25
Amendment No. 237

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|---|--|
| <p>SR 3.4.7.1 -----NOTE----- Not required to be met until 2 hours after reactor vessel coolant temperature is less than the SDC cut-in permissive temperature. ----- Verify one SDC subsystem or recirculation pump is operating.</p> | <p>In accordance with the Surveillance Frequency Control Program</p> |
| <p>SR 3.4.7.2 -----NOTE----- Not required to be performed until 12 hours after reactor vessel coolant temperature is less than the SDC cut-in permissive temperature. ----- Verify SDC subsystem locations susceptible to gas accumulation are sufficiently filled with water.</p> | <p>In accordance with the Surveillance Frequency Control Program</p> |

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|---|---|
| B. No required SDC subsystem in operation. <u>AND</u> No recirculation pump in operation. | B.1 Verify reactor coolant circulating by an alternate method. | 1 hour from discovery of no reactor coolant circulation <u>AND</u> Once per 12 hours thereafter |
| | <u>AND</u> B.2 Monitor reactor coolant temperature and pressure. | Once per hour |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|--------------|--|---|
| SR 3.4.8.1 | Verify one SDC subsystem or recirculation pump is operating. | In accordance with the Surveillance Frequency Control Program |
| SR 3.4.8.2 | Verify SDC subsystem locations susceptible to gas accumulation are sufficiently filled with water. | In accordance with the Surveillance Frequency Control Program |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | | | FREQUENCY | | | | | | | | | | | | | | | | | | | | | | | | |
|---------------|------------------|---|---|---|--|--|---|--|--|--------------|--|---------------|------------------|--|--------------------|------|--|--|--|-------|------------|---|-----------|------|------------|---|-----------|--|
| SR | 3.5.1.1 | Verify, for each ECCS injection/spray subsystem, locations susceptible to gas accumulation are sufficiently filled with water. | | In accordance with the Surveillance Frequency Control Program | | | | | | | | | | | | | | | | | | | | | | | | |
| SR | 3.5.1.2 | -----NOTE----- Not required to be met for system vent flow paths opened under administrative control. ----- Verify each ECCS injection/spray subsystem 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. | | In accordance with the Surveillance Frequency Control Program | | | | | | | | | | | | | | | | | | | | | | | | |
| SR | 3.5.1.3 | Verify correct breaker alignment to the LPCI swing bus. | | In accordance with the Surveillance Frequency Control Program | | | | | | | | | | | | | | | | | | | | | | | | |
| SR | 3.5.1.4 | Verify each recirculation pump discharge valve cycles through one complete cycle of full travel or is de-energized in the closed position. | | In accordance with the Inservice Testing Program | | | | | | | | | | | | | | | | | | | | | | | | |
| SR | 3.5.1.5 | Verify the following ECCS pumps develop the specified flow rate against a test line pressure corresponding to the specified reactor pressure. <table><tr><td></td><td></td><td></td><td>TEST LINE PRESSURE CORRESPONDING TO A REACTOR PRESSURE OF</td></tr><tr><td></td><td></td><td>NO. OF PUMPS</td><td></td></tr><tr><td><u>SYSTEM</u></td><td><u>FLOW RATE</u></td><td></td><td><u>PRESSURE OF</u></td></tr><tr><td>Core</td><td></td><td></td><td></td></tr><tr><td>Spray</td><td>≥ 4500 gpm</td><td>1</td><td>≥ 90 psig</td></tr><tr><td>LPCI</td><td>≥ 9000 gpm</td><td>2</td><td>≥ 20 psig</td></tr></table> | | | | | TEST LINE PRESSURE CORRESPONDING TO A REACTOR PRESSURE OF | | | NO. OF PUMPS | | <u>SYSTEM</u> | <u>FLOW RATE</u> | | <u>PRESSURE OF</u> | Core | | | | Spray | ≥ 4500 gpm | 1 | ≥ 90 psig | LPCI | ≥ 9000 gpm | 2 | ≥ 20 psig | In accordance with the Inservice Testing Program |
| | | | TEST LINE PRESSURE CORRESPONDING TO A REACTOR PRESSURE OF | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | NO. OF PUMPS | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <u>SYSTEM</u> | <u>FLOW RATE</u> | | <u>PRESSURE OF</u> | | | | | | | | | | | | | | | | | | | | | | | | | |
| Core | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Spray | ≥ 4500 gpm | 1 | ≥ 90 psig | | | | | | | | | | | | | | | | | | | | | | | | | |
| LPCI | ≥ 9000 gpm | 2 | ≥ 20 psig | | | | | | | | | | | | | | | | | | | | | | | | | |

(continued)

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|--|
| <p>SR 3.5.2.1 Verify, for each required ECCS injection/spray subsystem, the:</p> <p>a. Suppression pool water level is ≥ 10 ft 4 inches; or</p> <p>b. -----NOTE----- Only one required ECCS injection/spray subsystem may take credit for this option during OPDRVs. -----</p> <p>Contaminated condensate storage tanks water volume is $\geq 140,000$ available gallons.</p> | <p>In accordance with the Surveillance Frequency Control Program</p> |
| <p>SR 3.5.2.2 Verify, for each required ECCS injection/spray subsystem, locations susceptible to gas accumulation are sufficiently filled with water.</p> | <p>In accordance with the Surveillance Frequency Control Program</p> |
| <p>SR 3.5.2.3 -----NOTE----- Not required to be met for system vent flow paths opened under administrative control. -----</p> <p>Verify each required ECCS injection/spray subsystem 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.</p> | <p>In accordance with the Surveillance Frequency Control Program</p> |

(continued)

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|--------------|---|---|
| SR 3.6.2.3.1 | Verify each suppression pool cooling subsystem manual and power operated valve in the flow path that is not locked, sealed, or otherwise secured in position, is in the correct position or can be aligned to the correct position. | In accordance with the Surveillance Frequency Control Program |
| SR 3.6.2.3.2 | Verify each required LPCI pump develops a flow rate ≥ 5000 gpm through the associated heat exchanger while operating in the suppression pool cooling mode. | In accordance with the Inservice Testing Program |
| SR 3.6.2.3.3 | Verify suppression pool cooling subsystem locations susceptible to gas accumulation are sufficiently filled with water. | In accordance with the Surveillance Frequency Control Program |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|--------------|---|---|
| SR 3.6.2.4.1 | Verify each suppression pool spray subsystem manual and power operated valve in the flow path that is not locked, sealed, or otherwise secured in position, is in the correct position or can be aligned to the correct position. | In accordance with the Surveillance Frequency Control Program |
| SR 3.6.2.4.2 | Verify each suppression pool spray nozzle is unobstructed. | In accordance with the Surveillance Frequency Control Program |
| SR 3.6.2.4.3 | Verify suppression pool spray subsystem locations susceptible to gas accumulation are sufficiently filled with water. | In accordance with the Surveillance Frequency Control Program |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|---|
| SR 3.9.8.1 Verify one SDC subsystem is operating. | In accordance with the Surveillance Frequency Control Program |
| SR 3.9.8.2 Verify required SDC subsystem locations susceptible to gas accumulation are sufficiently filled with water. | In accordance with the Surveillance Frequency Control Program |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|--------------|--|---|
| SR 3.9.9.1 | Verify one SDC subsystem is operating. | In accordance with the Surveillance Frequency Control Program |
| SR 3.9.9.2 | Verify SDC subsystem locations susceptible to gas accumulation are sufficiently filled with water. | In accordance with the Surveillance Frequency Control Program |



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

EXELON GENERATION COMPANY, LLC

DOCKET NO. 50-373

LASALLE COUNTY STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 214
License No. NPF-11

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 July 14, 2014, 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.

Enclosure 8

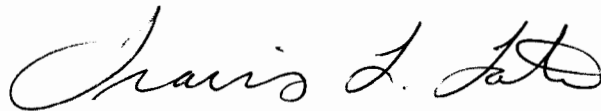
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-11 is hereby amended to read as follows:

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 214, and the Environmental Protection Plan contained in Appendix B, 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 its date of issuance and shall be implemented within 120 days.

FOR THE NUCLEAR REGULATORY COMMISSION

A handwritten signature in black ink, appearing to read "Travis L. Tate".

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: June 19, 2015



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

EXELON GENERATION COMPANY, LLC

DOCKET NO. 50-374

LASALLE COUNTY STATION, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 200
License No. NPF-18

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 July 14, 2014, 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-18 is hereby amended to read as follows:

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 200, and the Environmental Protection Plan contained in Appendix B, 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 its date of issuance and shall be implemented within 120 days.

FOR THE NUCLEAR REGULATORY COMMISSION

A handwritten signature in black ink, appearing to read "Travis L. Tate", with a stylized flourish at the end.

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: June 19, 2015

ATTACHMENT TO LICENSE AMENDMENT NOS. 214 AND 200

FACILITY OPERATING LICENSE NOS. NPF-11 AND NPF-18

DOCKET NOS. 50-373 AND 50-374

Replace the following pages of the Facility Operating Licenses with the enclosed pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Remove

Insert

License NPF-11

License NPF-11

Page 3

Page 3

License NPF-18

License NPF-18

Page 3

Page 3

TSs

TSs

3.4.9-3

3.4.9-3

3.4.10-2

3.4.10-2

3.5.1-4

3.5.1-4

3.5.1-5

3.5.1-5

3.5.2-3

3.5.2-3

3.5.3-2

3.5.3-2

3.6.2.3-2

3.6.2.3-2

3.6.2.4-2

3.6.2.4-2

3.9.8-3

3.9.8-3

3.9.9-3

3.9.9-3

- Am. 146
01/12/01
- (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
- Am. 202
07/21/11
- (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 LaSalle County Station, Units 1 and 2, and such Class B and Class C low-level radioactive waste as may be produced by the operation of Braidwood Station, Units 1 and 2, Byron Station, Units 1 and 2, and Clinton Power Station, Unit 1.

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:

- Am. 198
09/16/10
- (1) Maximum Power Level
- The licensee is authorized to operate the facility at reactor core power levels not in excess of full power (3546 megawatts thermal).
- Am. 214
06/19/15
- (2) Technical Specifications and Environmental Protection Plan
- The Technical Specifications contained in Appendix A, as revised through Amendment No. 214, and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.
- Am. 194
08/28/09
- (3) DELETED
- Am. 194
08/28/09
- (4) DELETED
- Am. 194
08/28/09
- (5) DELETED
- Am. 194
08/28/09
- (6) DELETED
- Am. 194
08/28/09
- (7) DELETED

Am. 189
07/21/11

(5) Pursuant to the Act and 10 CFR Parts 30, 40, and 70 possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of LaSalle County Station, Units 1 and 2, and such Class B and Class C low-level radioactive waste as may be produced by the operation of Braidwood Station, Units 1 and 2, Byron Station, Units 1 and 2, and Clinton Power Station, Unit 1.

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:

Am. 185
09/16/10

(1) Maximum Power Level

The licensee is authorized to operate the facility at reactor core power levels not in excess of full power (3546 megawatts thermal). Items in Attachment 1 shall be completed as specified. Attachment 1 is hereby incorporated into this license.

(2) Technical Specifications and Environmental Protection Plan

Am. 200
06/19/15

The Technical Specifications contained in Appendix A, as revised through Amendment No. 200, and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

Am. 181
08/28/09

(3) DELETED

Am. 181
08/28/09

(4) DELETED

Am. 181
08/28/09

(5) DELETED

Am. 181
08/28/09

(6) DELETED

Am. 181
08/28/09

(7) DELETED

Am. 181
08/28/09

(8) DELETED

Am. 181
08/28/09

(9) DELETED

RHR Shutdown Cooling System—Hot Shutdown
3.4.9

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|--|
| <p>SR 3.4.9.1 -----NOTE----- Not required to be met until 2 hours after reactor vessel pressure is less than the RHR cut-in permissive pressure. -----</p> <p>Verify one RHR shutdown cooling subsystem or recirculation pump is operating.</p> | <p>In accordance with the Surveillance Frequency Control Program</p> |
| <p>SR 3.4.9.2 -----NOTE----- Not required to be performed until 12 hours after reactor steam dome pressure is less than the RHR cut-in permissive pressure. -----</p> <p>Verify RHR shutdown cooling subsystem locations susceptible to gas accumulation are sufficiently filled with water.</p> | <p>In accordance with the Surveillance Frequency Control Program</p> |

RHR Shutdown Cooling System—Cold Shutdown
3.4.10

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|---|---|
| B. No RHR shutdown cooling subsystem in operation. <u>AND</u> No recirculation pump in operation. | B.1 Verify reactor coolant circulating by an alternate method. | 1 hour from discovery of no reactor coolant circulation <u>AND</u> Once per 12 hours thereafter |
| | <u>AND</u> B.2 Monitor reactor coolant temperature and pressure. | Once per hour |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|---|---|
| SR 3.4.10.1 Verify one RHR shutdown cooling subsystem or recirculation pump is operating. | In accordance with the Surveillance Frequency Control Program |
| SR 3.4.10.2 Verify RHR shutdown cooling subsystem locations susceptible to gas accumulation are sufficiently filled with water. | In accordance with the Surveillance Frequency Control Program |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|--------------|--|---|
| SR 3.5.1.1 | Verify, for each ECCS injection/spray subsystem, locations susceptible to gas accumulation are sufficiently filled with water. | In accordance with the Surveillance Frequency Control Program |
| SR 3.5.1.2 | <p>-----NOTE-----</p> <p>Not required to be met for system vent flow paths opened under administrative control.</p> <p>-----</p> <p>Verify each ECCS injection/spray subsystem 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.</p> | In accordance with the Surveillance Frequency Control Program |
| SR 3.5.1.3 | Verify ADS accumulator supply header pressure is ≥ 150 psig. | In accordance with the Surveillance Frequency Control Program |
| SR 3.5.1.4 | <p>Verify ADS accumulator backup compressed gas system bottle pressure is ≥ 500 psig.</p> <p><u>OR</u></p> <p>Verify ADS accumulator reserve bottle pressure is ≥ 1100 psig.</p> | In accordance with the Surveillance Frequency Control Program |

(continued)

SURVEILLANCE REQUIREMENTS (continued)

| SURVEILLANCE | | | FREQUENCY | | | | | | | | | | | | | | | |
|---------------|---|---------------------------|---|---------------------------|------|------------|------------|------|------------|------------|---------------|------------|------------|---------------|------------|------------|--|--|
| SR 3.5.1.5 | Verify each ECCS pump develops the specified flow rate against the specified test line pressure. | | In accordance with the Inservice Testing Program | | | | | | | | | | | | | | | |
| | <table><tr><td><u>SYSTEM</u></td><td><u>FLOW RATE</u></td><td><u>TEST LINE PRESSURE</u></td></tr><tr><td>LPCS</td><td>≥ 6350 gpm</td><td>≥ 290 psig</td></tr><tr><td>LPCI</td><td>≥ 7200 gpm</td><td>≥ 130 psig</td></tr><tr><td>HPCS (Unit 1)</td><td>≥ 6250 gpm</td><td>≥ 370 psig</td></tr><tr><td>HPCS (Unit 2)</td><td>≥ 6200 gpm</td><td>≥ 330 psig</td></tr></table> | <u>SYSTEM</u> | <u>FLOW RATE</u> | <u>TEST LINE PRESSURE</u> | LPCS | ≥ 6350 gpm | ≥ 290 psig | LPCI | ≥ 7200 gpm | ≥ 130 psig | HPCS (Unit 1) | ≥ 6250 gpm | ≥ 370 psig | HPCS (Unit 2) | ≥ 6200 gpm | ≥ 330 psig | | |
| <u>SYSTEM</u> | <u>FLOW RATE</u> | <u>TEST LINE PRESSURE</u> | | | | | | | | | | | | | | | | |
| LPCS | ≥ 6350 gpm | ≥ 290 psig | | | | | | | | | | | | | | | | |
| LPCI | ≥ 7200 gpm | ≥ 130 psig | | | | | | | | | | | | | | | | |
| HPCS (Unit 1) | ≥ 6250 gpm | ≥ 370 psig | | | | | | | | | | | | | | | | |
| HPCS (Unit 2) | ≥ 6200 gpm | ≥ 330 psig | | | | | | | | | | | | | | | | |
| SR 3.5.1.6 | <p>-----NOTE----- Vessel injection/spray may be excluded. -----</p> <p>Verify each ECCS injection/spray subsystem actuates on an actual or simulated automatic initiation signal.</p> | | In accordance with the Surveillance Frequency Control Program | | | | | | | | | | | | | | | |
| SR 3.5.1.7 | <p>-----NOTE----- Valve actuation may be excluded. -----</p> <p>Verify the ADS actuates on an actual or simulated automatic initiation signal.</p> | | In accordance with the Surveillance Frequency Control Program | | | | | | | | | | | | | | | |
| SR 3.5.1.8 | <p>-----NOTE----- Valve actuation may be excluded. -----</p> <p>Verify each required ADS valve actuator strokes when manually actuated.</p> | | In accordance with the Surveillance Frequency Control Program | | | | | | | | | | | | | | | |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY | | | | | | | | | | | | | | | |
|---------------|--|---|-----------|--------------------|------|-----------------|-----------------|------|-----------------|-----------------|---------------|-----------------|-----------------|---------------|-----------------|-----------------|--|
| SR 3.5.2.1 | Verify, for each required low pressure ECCS injection/spray subsystem, the suppression pool water level is \geq -12 ft 7 in. | In accordance with the Surveillance Frequency Control Program | | | | | | | | | | | | | | | |
| SR 3.5.2.2 | Verify, for the required High Pressure Core Spray (HPCS) System, the suppression pool water level is \geq -12 ft 7 in. | In accordance with the Surveillance Frequency Control Program | | | | | | | | | | | | | | | |
| SR 3.5.2.3 | Verify, for each required ECCS injection/spray subsystem, locations susceptible to gas accumulation are sufficiently filled with water. | In accordance with the Surveillance Frequency Control Program | | | | | | | | | | | | | | | |
| SR 3.5.2.4 | <p>-----NOTE----- Not required to be met for system vent flow paths opened under administrative control. -----</p> <p>Verify each required ECCS injection/spray subsystem 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.</p> | In accordance with the Surveillance Frequency Control Program | | | | | | | | | | | | | | | |
| SR 3.5.2.5 | <p>Verify each required ECCS pump develops the specified flow rate against the specified test line pressure.</p> <table> <tr> <th>SYSTEM</th><th>FLOW RATE</th><th>TEST LINE PRESSURE</th></tr> <tr> <td>LPCS</td><td>\geq 6350 gpm</td><td>\geq 290 psig</td></tr> <tr> <td>LPCI</td><td>\geq 7200 gpm</td><td>\geq 130 psig</td></tr> <tr> <td>HPCS (Unit 1)</td><td>\geq 6250 gpm</td><td>\geq 370 psig</td></tr> <tr> <td>HPCS (Unit 2)</td><td>\geq 6200 gpm</td><td>\geq 330 psig</td></tr> </table> | SYSTEM | FLOW RATE | TEST LINE PRESSURE | LPCS | \geq 6350 gpm | \geq 290 psig | LPCI | \geq 7200 gpm | \geq 130 psig | HPCS (Unit 1) | \geq 6250 gpm | \geq 370 psig | HPCS (Unit 2) | \geq 6200 gpm | \geq 330 psig | In accordance with the Inservice Testing Program |
| SYSTEM | FLOW RATE | TEST LINE PRESSURE | | | | | | | | | | | | | | | |
| LPCS | \geq 6350 gpm | \geq 290 psig | | | | | | | | | | | | | | | |
| LPCI | \geq 7200 gpm | \geq 130 psig | | | | | | | | | | | | | | | |
| HPCS (Unit 1) | \geq 6250 gpm | \geq 370 psig | | | | | | | | | | | | | | | |
| HPCS (Unit 2) | \geq 6200 gpm | \geq 330 psig | | | | | | | | | | | | | | | |

(continued)

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|---|---|
| SR 3.5.3.1 Verify the RCIC System locations susceptible to gas accumulation are sufficiently filled with water. | In accordance with the Surveillance Frequency Control Program |
| SR 3.5.3.2 -----NOTE----- Not required to be met for system vent flow paths opened under administrative control. ----- Verify each RCIC System 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. | In accordance with the Surveillance Frequency Control Program |
| SR 3.5.3.3 -----NOTE----- Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. ----- Verify, with reactor pressure ≤ 1020 psig and ≥ 920 psig, the RCIC pump can develop a flow rate ≥ 600 gpm against a system head corresponding to reactor pressure. | In accordance with the Surveillance Frequency Control Program |
| SR 3.5.3.4 -----NOTE----- Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. ----- Verify, with reactor pressure ≤ 165 psig, the RCIC pump can develop a flow rate ≥ 600 gpm against a system head corresponding to reactor pressure. | In accordance with the Surveillance Frequency Control Program |

(continued)

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|--------------|---|---|
| SR 3.6.2.3.1 | Verify each RHR suppression pool cooling subsystem manual and power operated valve in the flow path that is not locked, sealed, or otherwise secured in position, is in the correct position or can be aligned to the correct position. | In accordance with the Surveillance Frequency Control Program |
| SR 3.6.2.3.2 | Verify each required RHR pump develops a flow rate ≥ 7200 gpm through the associated heat exchanger while operating in the suppression pool cooling mode. | In accordance with the Inservice Testing Program |
| SR 3.6.2.3.3 | Verify RHR suppression pool cooling subsystem locations susceptible to gas accumulation are sufficiently filled with water. | In accordance with the Surveillance Frequency Control Program |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|--------------|---|---|
| SR 3.6.2.4.1 | Verify each RHR suppression pool spray subsystem manual and power operated valve in the flow path that is not locked, sealed, or otherwise secured in position, is in the correct position or can be aligned to the correct position. | In accordance with the Surveillance Frequency Control Program |
| SR 3.6.2.4.2 | Verify each required RHR pump develops a flow rate ≥ 450 gpm through the spray sparger while operating in the suppression pool spray mode. | In accordance with the Inservice Testing Program |
| SR 3.6.2.4.3 | Verify RHR suppression pool spray subsystem locations susceptible to gas accumulation are sufficiently filled with water. | In accordance with the Surveillance Frequency Control Program |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|--------------|--|---|
| SR 3.9.8.1 | Verify one RHR shutdown cooling subsystem is operating. | In accordance with the Surveillance Frequency Control Program |
| SR 3.9.8.2 | Verify required RHR shutdown cooling subsystem locations susceptible to gas accumulation are sufficiently filled with water. | In accordance with the Surveillance Frequency Control Program |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|--------------|---|---|
| SR 3.9.9.1 | Verify one RHR shutdown cooling subsystem is operating. | In accordance with the Surveillance Frequency Control Program |
| SR 3.9.9.2 | Verify RHR shutdown cooling subsystem locations susceptible to gas accumulation are sufficiently filled with water. | In accordance with the Surveillance Frequency Control Program |



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

EXELON GENERATION COMPANY, LLC

AND

MIDAMERICAN ENERGY COMPANY

DOCKET NO. 50-254

QUAD CITIES NUCLEAR POWER STATION, UNIT 1

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 257
Renewed License No. DPR-29

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 July 14, 2014, 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 3.B. of Renewed Facility Operating License No. DPR-29 is hereby amended to read as follows:

B. Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 257, are hereby incorporated into the renewed operating license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance and shall be implemented within 120 days.

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 Renewed Facility Operating License

Date of Issuance: June 19, 2015



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

EXELON GENERATION COMPANY, LLC

AND

MIDAMERICAN ENERGY COMPANY

DOCKET NO. 50-265

QUAD CITIES NUCLEAR POWER STATION, UNIT 2

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 252
Renewed License No. DPR-30

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 July 14, 2014, 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 3.B. of Renewed Facility Operating License No. DPR-30 is hereby amended to read as follows:

B. Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 252, are hereby incorporated into the renewed operating license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance and shall be implemented within 120 days.

FOR THE NUCLEAR REGULATORY COMMISSION

A handwritten signature in black ink, appearing to read "Travis L. Tate", with a long horizontal flourish extending to the right.

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 Renewed Facility Operating License

Date of Issuance: June 19, 2015

ATTACHMENT TO LICENSE AMENDMENT NOS. 257 AND 252

RENEWED FACILITY OPERATING LICENSE NOS. DPR-29 AND DPR-30

DOCKET NOS. 50-254 AND 50-265

Replace the following pages of the Facility Operating Licenses with the attached pages. The revised pages are identified by number and contain marginal lines indicating the areas of change.

Remove

License DPR-29

Page 4

License DPR-30

Page 4

TSs

3.4.7-3

3.5.1-4

3.5.2-3

3.5.3-2

3.6.2.3-2

3.6.2.4-2

3.9.8-3

3.9.9-3

Insert

License DPR-29

Page 4

License DPR-30

Page 4

TSs

3.4.7-3

3.4.8-3

3.5.1-4

3.5.2-3

3.5.3-2

3.6.2.3-2

3.6.2.4-2

3.9.8-3

3.9.9-3

B. Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 257, are hereby incorporated into this renewed operating license. The licensee shall operate the facility in accordance with the Technical Specifications.

C. The licensee shall maintain the commitments made in response to the March 14, 1983, NUREG-0737 Order, subject to the following provision:

The licensee may make changes to commitments made in response to the March 14, 1983, NUREG-0737 Order without prior approval of the Commission as long as the change would be permitted without NRC approval, pursuant to the requirements of 10 CFR 50.59. Consistent with this regulation, if the change results in an Unreviewed Safety Question, a license amendment shall be submitted to the NRC staff for review and approval prior to implementation of the change.

D. Equalizer Valve Restriction

Three of the four valves in the equalizer piping between the recirculation loops shall be closed at all times during reactor operation with one bypass valve open to allow for thermal expansion of water.

E. The licensee shall fully implement and maintain in effect all provisions of the Commission-approved physical security, training and qualification, and safeguards contingency plans including amendments made pursuant to provisions of the Miscellaneous Amendments and Search Requirements revisions to 10 CFR 73.55 (51 FR 27817 and 27822), and the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The combined sets of plans¹, which contain Safeguards Information protected under 10 CFR 73.21, is entitled: "Quad Cities Nuclear Power Station Security Plan, Training and Qualification Plan, and Safeguards Contingency Plan, Revision 2," submitted by letter dated May 17, 2006.

Exelon Generation Company shall fully implement and maintain in effect all provisions of the Commission-approved cyber security plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The Exelon Generation Company CSP was approved by License Amendment No. 249.

F. The licensee shall implement and maintain in effect all provisions of the approved fire protection program as described in the Updated Final Safety Analysis Report for the facility and as approved in the Safety Evaluation Reports dated July 27, 1979, with supplements dated November 5, 1980, and

¹ The Training and Qualification Plan and Safeguards Contingency Plan are Appendices to the Security Plan.

B. Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 252, are hereby incorporated into this renewed operating license. The licensee shall operate the facility in accordance with the Technical Specifications.

C. The license shall maintain the commitments made in response to the March 14, 1983, NUREG-0737 Order, subject to the following provision:

The licensee may make changes to commitments made in response to the March 14, 1983, NUREG-0737 Order without prior approval of the Commission as long as the change would be permitted without NRC approval, pursuant to the requirements of 10 CFR 50.59. Consistent with this regulation, if the change results in an Unreviewed Safety Question, a license amendment shall be submitted to the NRC staff for review and approval prior to implementation of the change.

D. Equalizer Valve Restriction

Three of the four valves in the equalizer piping between the recirculation loops shall be closed at all times during reactor operation with one bypass valve open to allow for thermal expansion of water.

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Exelon Generation Company shall fully implement and maintain in effect all provisions of the Commission-approved cyber security plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The Exelon Generation Company CSP was approved by License Amendment No. 244.

F. The licensee shall implement and maintain in effect all provisions of the approved fire protection program as described in the Updated Final Safety Analysis Report for the facility and as approved in the Safety Evaluation Reports dated July 27, 1979 with supplements dated

¹ The Training and Qualification Plan and Safeguards Contingency Plan are Appendices to the Security Plan.

RHR Shutdown Cooling System—Hot Shutdown
3.4.7

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|--|
| <p>SR 3.4.7.1 -----NOTE----- Not required to be met until 2 hours after reactor steam dome pressure is less than the RHR cut-in permissive pressure. -----</p> <p>Verify each RHR shutdown cooling subsystem manual and power operated valve in the flow path, that is not locked, sealed or otherwise secured in position, is in the correct position or can be aligned to the correct position.</p> | <p>In accordance with the Surveillance Frequency Control Program</p> |
| <p>SR 3.4.7.2 -----NOTE----- Not required to be performed until 12 hours after reactor steam dome pressure is less than the RHR cut-in permissive pressure. -----</p> <p>Verify RHR shutdown cooling subsystem locations susceptible to gas accumulation are sufficiently filled with water.</p> | <p>In accordance with the Surveillance Frequency Control Program</p> |

RHR Shutdown Cooling System—Cold Shutdown
3.4.8

SURVEILLANCE REQUIREMENTS (continued)

| SURVEILLANCE | | FREQUENCY |
|--------------|---|---|
| SR 3.4.8.2 | Verify RHR shutdown cooling subsystem locations susceptible to gas accumulation are sufficiently filled with water. | In accordance with the Surveillance Frequency Control Program |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|--------------|---|---|
| SR 3.5.1.1 | Verify, for each ECCS injection/spray subsystem, locations susceptible to gas accumulation are sufficiently filled with water. | In accordance with the Surveillance Frequency Control Program |
| SR 3.5.1.2 | <p>-----NOTES-----</p> <ol style="list-style-type: none"> 1. Low pressure coolant injection (LPCI) subsystems may be considered OPERABLE during alignment and operation for decay heat removal with reactor steam dome pressure less than the Residual Heat Removal (RHR) cut-in permissive pressure in MODE 3, if capable of being manually realigned and not otherwise inoperable. 2. Not required to be met for system vent flow paths opened under administrative control. <p>-----</p> <p>Verify each ECCS injection/spray subsystem 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.</p> | In accordance with the Surveillance Frequency Control Program |
| SR 3.5.1.3 | Verify correct breaker alignment to the LPCI swing bus. | In accordance with the Surveillance Frequency Control Program |
| SR 3.5.1.4 | Verify each recirculation pump discharge valve cycles through one complete cycle of full travel or is de-energized in the closed position. | In accordance with the Inservice Testing Program |

(continued)

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|--------------|---|--|
| SR 3.5.2.1 | <p>Verify, for each required ECCS injection/spray subsystem, the:</p> <p>a. Suppression pool water level is ≥ 8.5 ft; or</p> <p>b. -----NOTE----- Only one required ECCS injection/spray subsystem may take credit for this option during OPDRVs. -----</p> <p>Contaminated condensate storage tank(s) water volume is $\geq 140,000$ available gallons.</p> | In accordance with the Surveillance Frequency Control Program |
| SR 3.5.2.2 | <p>Verify, for each required ECCS injection/spray subsystem, locations susceptible to gas accumulation are sufficiently filled with water.</p> | In accordance with the Surveillance Frequency Control Program |
| SR 3.5.2.3 | <p>-----NOTES-----</p> <p>1. One LPCI subsystem may be considered OPERABLE during alignment and operation for decay heat removal if capable of being manually realigned and not otherwise inoperable.</p> <p>2. Not required to be met for system vent flow paths opened under administrative control. -----</p> <p>Verify each required ECCS injection/spray subsystem 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.</p> | <p>In accordance with the Surveillance Frequency Control Program</p> |

(continued)

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|--------------|---|---|
| SR 3.5.3.1 | Verify the RCIC System locations susceptible to gas accumulation are sufficiently filled with water. | In accordance with the Surveillance Frequency Control Program |
| SR 3.5.3.2 | <p>-----NOTE----- Not required to be met for system vent flow paths opened under administrative control. -----</p> <p>Verify each RCIC System 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.</p> | In accordance with the Surveillance Frequency Control Program |
| SR 3.5.3.3 | <p>-----NOTE----- Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. -----</p> <p>Verify, with reactor pressure ≤ 1005 psig and ≥ 920 psig, the RCIC pump can develop a flow rate ≥ 400 gpm against a system head corresponding to reactor pressure.</p> | In accordance with the Surveillance Frequency Control Program |
| SR 3.5.3.4 | <p>-----NOTE----- Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. -----</p> <p>Verify, with reactor pressure ≤ 180 psig, the RCIC pump can develop a flow rate ≥ 400 gpm against a system head corresponding to reactor pressure.</p> | In accordance with the Surveillance Frequency Control Program |

(continued)

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|--------------|---|---|
| SR 3.6.2.3.1 | Verify each RHR suppression pool cooling subsystem manual and power operated valve in the flow path that is not locked, sealed, or otherwise secured in position, is in the correct position or can be aligned to the correct position. | In accordance with the Surveillance Frequency Control Program |
| SR 3.6.2.3.2 | Verify each required RHR pump develops a flow rate ≥ 5000 gpm through the associated heat exchanger while operating in the suppression pool cooling mode. | In accordance with the Inservice Testing Program |
| SR 3.6.2.3.3 | Verify RHR suppression pool cooling subsystem locations susceptible to gas accumulation are sufficiently filled with water. | In accordance with the Surveillance Frequency Control Program |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|--------------|---|---|
| SR 3.6.2.4.1 | Verify each RHR suppression pool spray subsystem manual and power operated valve in the flow path that is not locked, sealed, or otherwise secured in position, is in the correct position or can be aligned to the correct position. | In accordance with the Surveillance Frequency Control Program |
| SR 3.6.2.4.2 | Verify each suppression pool spray nozzle is unobstructed. | In accordance with the Surveillance Frequency Control Program |
| SR 3.6.2.4.3 | Verify RHR suppression pool spray subsystem locations susceptible to gas accumulation are sufficiently filled with water. | In accordance with the Surveillance Frequency Control Program |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|--------------|---|---|
| SR 3.9.8.1 | Monitor reactor coolant temperature. | In accordance with the Surveillance Frequency Control Program |
| SR 3.9.8.2 | Verify each required RHR shutdown cooling subsystem manual and power operated valve in the flow path, that is not locked, sealed, or otherwise secured in position, is in the correct position or can be aligned to the correct position. | In accordance with the Surveillance Frequency Control Program |
| SR 3.9.8.3 | Verify required RHR shutdown cooling subsystem locations susceptible to gas accumulation are sufficiently filled with water. | In accordance with the Surveillance Frequency Control Program |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|--------------|---|---|
| SR 3.9.9.1 | Monitor reactor coolant temperature. | In accordance with the Surveillance Frequency Control Program |
| SR 3.9.9.2 | Verify each required RHR shutdown cooling subsystem manual and power operated valve in the flow path, that is not locked, sealed, or otherwise secured in position, is in the correct position or can be aligned to the correct position. | In accordance with the Surveillance Frequency Control Program |
| SR 3.9.9.3 | Verify RHR shutdown cooling subsystem locations susceptible to gas accumulation are sufficiently filled with water. | 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. 183 TO FACILITY OPERATING LICENSE NO. NPF-72,
AMENDMENT NO. 183 TO FACILITY OPERATING LICENSE NO. NPF-77,
AMENDMENT NO. 189 TO FACILITY OPERATING LICENSE NO. NPF-37,
AMENDMENT NO. 189 TO FACILITY OPERATING LICENSE NO. NPF-66,
AMENDMENT NO. 204 TO FACILITY OPERATING LICENSE NO. NPF-62,
AMENDMENT NO. 244 TO RENEWED FACILITY OPERATING LICENSE NO. DPR-19,
AMENDMENT NO. 237 TO RENEWED FACILITY OPERATING LICENSE NO. DPR-25,
AMENDMENT NO. 214 TO FACILITY OPERATING LICENSE NO. NPF-11,
AMENDMENT NO. 200 TO FACILITY OPERATING LICENSE NO. NPF-18,
AMENDMENT NO. 257 TO RENEWED FACILITY OPERATING LICENSE NO. DPR-29,
AMENDMENT NO. 252 TO RENEWED FACILITY OPERATING LICENSE NO. DPR-30,
EXELON GENERATION COMPANY, LLC,
BRAIDWOOD STATION, UNITS 1 AND 2
BYRON STATION, UNIT NOS. 1 AND 2
CLINTON POWER STATION, UNIT 1
DRESDEN NUCLEAR POWER STATION, UNITS 2 AND 3
LASALLE COUNTY STATION, UNITS 1 AND 2
QUAD CITIES NUCLEAR POWER STATION, UNITS 1 AND 2
DOCKET NOS. 50-237, 50-249, 50-254, 50-265, 50-373, 50-374,
50-454, 50-455, 50-456, 50-457, AND 50-461,

1.0 INTRODUCTION

By application dated July 14, 2014 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML14194A172), Exelon Generation Company (the licensee) requested changes to the technical specifications (TSs) for Braidwood Station (Braidwood), Units 1 and 2, Byron Station (Byron), Unit 1 and 2, Clinton Power Station (Clinton), Unit 1, Dresden Nuclear Power Station (DNPS), Units 2 and 3, LaSalle County Station (LaSalle), Unit 1 and 2, and Quad Cities Nuclear Power Station (QCNPS), Units 1 and 2. Specifically, the licensee requested to adopt U.S. Nuclear Regulatory Commission (NRC or Commission)-approved Technical Specifications Task Force (TSTF) Standard Technical Specifications (STS) Change Traveler TSTF-523, Revision 2, "Generic Letter 2008-01, Managing Gas Accumulation (ADAMS Accession No. ML13053A075), dated February 21, 2013. The availability of this TS improvement was announced in the *Federal Register* on January 15, 2014 (79 FR 2700) as part of the consolidated line item improvement process (CLIP).

The proposed change for Braidwood and Bryon would revise surveillance requirements (SRs) related to gas accumulation for the emergency core cooling system (ECCS). The proposed change would add new SRs related to gas accumulation for the residual heat removal (RHR) and containment spray (CS) systems. TS Bases changes associated with these SRs would also be made.

The proposed change for Clinton would revise SRs related to gas accumulation for the ECCS and reactor core isolation cooling (RCIC) system. The proposed change would also add new SRs related to gas accumulation for the RHR shutdown cooling and suppression pool cooling, and CS systems. TS Bases changes associated with these SRs would also be made.

The proposed change for DNPS, LaSalle, and QCNPS would revise SRs related to gas accumulation for the ECCS and RCIC system. The proposed change would also add new SRs related to gas accumulation for the RHR shutdown cooling, suppression pool cooling, and suppression pool spray systems. TS Bases changes associated with these SRs would also be made.

The licensee stated that it has reviewed the information contained in the model safety evaluation dated December 23, 2013 (ADAMS Accession No. ML13255A169), and that the license amendment request (LAR) is consistent with NRC-approved TSTF-523.

2.0 REGULATORY AND TECHNICAL EVALUATIONS

Attachments A through F contain the regulatory and technical evaluations for the 11 reactor operating licenses covered by these amendments.

3.0 STATE CONSULTATION

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

4.0 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 Title 10 of the *Code of Federal Regulations* (10 CFR), Part 20, and involve changes to 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 (79 FR 64219, October 28, 2014). 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.

5.0 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 amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: C. Tilton

Date of issuance: June 19, 2015

Attachments:

- A. Braidwood, Units 1 and 2, Regulatory and Technical Evaluation
- B. Byron, Unit Nos. 1 and 2, Regulatory and Technical Evaluation
- C. Clinton Power Station, Unit 1, Regulatory and Technical Evaluation
- D. DNPS, Units 2 and 3, Regulatory and Technical Evaluation
- E. LaSalle County Station, Units 1 and 2, Regulatory and Technical Evaluation
- F. QCNPS, Units 1 and 2, Regulatory and Technical Evaluation

REGULATORY AND TECHNICAL EVALUATIONS BRAIDWOOD STATION, UNITS 1 AND 2

1.0 REGULATORY EVALUATION

1.1 Background

Gas accumulation in reactor systems can result in water hammer, pump cavitation, and pumping of non-condensable gas into the reactor vessel. These effects may result in the subject system being unable to perform its specified safety function. The U.S. Nuclear Regulatory Commission (NRC) issued Generic Letter (GL) 2008-01, "Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal (DHR), and Containment Spray Systems (CS)," in January 2008, to address the issue of gas accumulation in ECCS [emergency core cooling system], DHR, and CS systems (Agencywide Documents Access and Management System (ADAMS) Accession No. ML072910759). The industry and the NRC staff agreed that a change to the Standard Technical Specification (STS) and plant-specific technical specification (TS) would be necessary to address some issues discussed in GL 2008-01. Technical Specification Task Force (TSTF)-523 contains changes to the TS surveillance requirements (SRs) and TS Bases to address some of the concerns in GL 2008-01. The licensee proposed amending the Braidwood Station, Units 1 and 2, TS using a plant-specific adoption of the TSTF-523 changes.

1.2 Technical Specification Changes

Changes were proposed for SRs 3.5.2.2, 3.5.2.3, 3.6.6.1, as well as the addition of new SRs 3.4.6.4, 3.4.7.4, 3.4.8.3, 3.6.6.9, 3.9.5.2, and 3.9.6.3 to TS 3.4.6, "Reactor Coolant System (RCS) Loops -MODE 4," TS 3.4.7, "RCS Loops - MODE 5, Loops Filled," TS 3.4.8, "RCS Loops - MODE 5, Loops Not Filled," TS 3.5.2, "ECCS [emergency core cooling system] – Operating," TS 3.6.6, "Containment Spray and Cooling Systems," TS 3.9.5, "RHR [residual heat removal] and Coolant Circulation – High Water Level," and TS 3.9.6, "RHR and Coolant Circulation – Low Water Level," respectively.

1.3 Regulatory Review

The regulations in Appendix A to Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50 provide design requirements. Appendix B to 10 CFR Part 50, the TSs, and the licensee quality assurance programs provide operating requirements. The regulatory requirements of 10 CFR Part 50, Appendix A, that are applicable to gas management in the subject systems include: General Design Criteria (GDCs) 1, 34, 35, 36, 37, 38, 39 and 40. GDC 1 requires that the subject systems be designed, fabricated, erected, and tested to qualify standards. GDC 34 requires an RHR system designed to maintain specified acceptable fuel design limits and to meet design conditions that are not exceeded if a single-failure occurs and specified electrical

power systems fail. GDCs 35, 36, and 37 require an ECCS design that meets performance, inspection, and testing requirements. Additionally, the regulations in 10 CFR 50.46 provide specified ECCS performance criteria. GDCs 38, 39, and 40 require a containment heat removal system design that meets performance, inspection, and testing requirements.

Quality assurance criteria provided in 10 CFR, Part 50, Appendix B, that apply to gas management in the subject systems include: Criteria III, V, XI, XVI, and XVII. Criteria III and V require measures to ensure that applicable regulatory requirements and the design basis, as defined in 10 CFR 50.2, "Definitions," and as specified in the license application, are correctly translated into controlled specifications, drawings, procedures, and instructions. Criterion XI requires a test program to ensure that the subject systems will perform satisfactorily in service and requires that test results shall be documented and evaluated to ensure that test requirements have been satisfied. Criterion XVI requires measures to ensure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances, are promptly identified and corrected, and that significant conditions adverse to quality are documented and reported to management. Criterion XVII requires maintenance of records of activities affecting quality.

The NRC's regulatory requirements related to the content of the TSs are contained in 10 CFR 50.36(c). The regulations at 10 CFR 50.36 require that the TSs include items in the following categories: (1) safety limits, limiting safety systems settings, and limiting control settings; (2) Limiting Conditions for Operation (LCO); (3) SRs; (4) design features; and (5) administrative controls. 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. Typically, TS Section 5 requires that licensees establish, implement, and maintain written procedures covering the applicable procedures recommended in Appendix A to Regulatory Guide (RG) 1.33, "Quality Assurance Program Requirements (Operation)." Appendix A to RG 1.33 identifies instructions for filling and venting the ECCS and DHR system, as well as for draining and refilling heat exchangers. Standard TSs and most licensee TSs include SRs to verify that at least some of the subject systems piping is filled with water.

The NRC's guidance for the format and content of licensee TSs can be found in NUREG-1431, "Standard Technical Specifications - Westinghouse Plants."

Regulatory guidance for the NRC staff's review of containment heat removal systems, ECCS, and RHR systems is provided in the following revisions and sections of NUREG-0800, "Standard Review Plan [SRP] for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR Edition."

- Revision 5 of SRP, Section 6.2.2, "Containment Heat Removal Systems," dated March 2007 (ADAMS Accession No. ML070160661), provides the procedures concerning the review of containment heat removal under post-accident conditions to help ensure compliance with GDCs 38, 39, and 40.

- Revision 3 of SRP, Section 6.3, "Emergency Core Cooling System," dated March 2007 (ADAMS Accession No. ML070550068), provides the procedures concerning the review of ECCS to help ensure compliance with GDCs 35, 36, and 37.
- Revision 5 of SRP, Section 5.4.7, "Residual Heat Removal (RHR) System," dated May 2010 (ADAMS Accession No. ML100680577), provides the procedures concerning the review of RHR system as it is used to cool the RCS during and following shutdown to help ensure compliance with GDC 34.

2.0 TECHNICAL EVALUATION

The proposed change adopted the TS format and content, to the extent practicable, contained in the changes made to NUREG-1431, "Standard Technical Specifications Westinghouse Plants" by TSTF-523. As discussed below, the NRC staff compared the proposed changes to the existing SRs, as well as the regulatory requirements of 10 CFR 50.36(c). The licensee proposed the following TS changes:

- (1) Add SR 3.4.6.4, which states, "Verify required RHR loop locations susceptible to gas accumulation are sufficiently filled with water," with a note that states "Not required to be performed until 12 hours after entering MODE 4" and a frequency in accordance with the Surveillance Frequency Control Program.
- (2) Add SR 3.4.7.4, which states, "Verify required RHR loop locations susceptible to gas accumulation are sufficiently filled with water," with a frequency in accordance with the Surveillance Frequency Control Program.
- (3) Add SR 3.4.8.3, which states "Verify RHR loop locations susceptible to gas accumulation are sufficiently filled with water," with a frequency in accordance with the Surveillance Frequency Control Program.
- (4) Add a note to SR 3.5.2.2, which states, "Not required to be met for system vent flow paths opened under administrative control."
- (5) Revise the language for SR 3.5.2.3 from "Verify ECCS piping is full of water" to "Verify ECCS locations susceptible to gas accumulation are sufficiently filled with water."
- (6) Add a note to SR 3.6.6.1, which states, "Not required to be met for system vent flow paths opened under administrative control."
- (7) Add SR 3.6.6.9, which states, "Verify containment spray locations susceptible to gas accumulation are sufficiently filled with water," with a frequency in accordance with the Surveillance Frequency Control Program.

- (8) Add SR 3.9.5.2, which states, "Verify required RHR loop locations susceptible to gas accumulation are sufficiently filled with water," with a frequency in accordance with the Surveillance Frequency Control Program.
- (9) Add SR 3.9.6.3, which states, "Verify RHR loop locations susceptible to gas accumulation are sufficiently filled with water," with a frequency in accordance with the Surveillance Frequency Control Program.

The NRC staff developed new language for the SRs using licensee responses to GL 2008-01 and the NRC discussion contained in Task Interface Agreement (TIA) 2008-03, "Emergency Core Cooling System Voiding Relative To Compliance With Surveillance Requirements (SRs) 3.5.1.1, 3.5.2.3, and 3.5.3.1" (ADAMS Accession No. ML082560209). Many of the GL 2008-01 responses stated that licensees identified system locations susceptible to gas accumulation. In the TIA, the NRC stated that the intent of the TS SRs, which state "full of water," may be met if the licensee can establish, through an Operability Determination, that there is a reasonable expectation that the system in question will perform its specified safety function. Therefore the phrase, "sufficiently filled with water" was recommended for the proposed TS changes. In the TSs, "sufficiently filled with water," is understood to mean "sufficiently filled with water to support Operability." The regulation at 10 CFR 50.36(c)(3) states that one of the purposes of the SR is to verify that the LCO is met. Therefore, the new SR language, "[By] Verify[ing] the [system name] locations susceptible to gas accumulation are sufficiently filled with water," is acceptable since this language will allow the licensee to make a conclusion as to whether or not a system is operable.

The language for the notes that state that the SR does not have to be performed until 12 hours after entering MODE 4 is acceptable because the note provides a limited time to perform the Surveillance after entering the Applicability of the LCO; however, under the STS usage rules (STS Section 1.4), the requirement to manage gas accumulation is not affected. Licensees must have confidence that the SR can be met or the LCO must be declared not met.

The language for the notes that allow the SRs to not be met for system vent flow paths opened under administrative control is necessary to allow the licensee to credit administratively controlled manual action to close the system vent flow path in order to maintain system Operability during system venting and performance of the proposed gas accumulation SR. Therefore, these notes are acceptable.

The NRC staff found that the proposed SRs meet the regulatory requirements of 10 CFR 50.36 because they provide assurance that the necessary quality of systems and components will be maintained and that the LCO will be met. Therefore, the NRC staff finds the proposed amendment acceptable.

REGULATORY AND TECHNICAL EVALUATIONS BYRON STATION, UNITS 1 AND 2

1.0 REGULATORY EVALUATION

1.1 Background

Gas accumulation in reactor systems can result in water hammer, pump cavitation, and pumping of non-condensable gas into the reactor vessel. These effects may result in the subject system being unable to perform its specified safety function. The U.S. Nuclear Regulatory Commission (NRC) issued Generic Letter (GL) 2008-01, "Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal (DHR), and Containment Spray Systems(CS)," in January 2008 to address the issue of gas accumulation in ECCS [emergency core cooling system], DHR, and CS systems (Agencywide Documents Access and Management System (ADAMS) Accession No. ML072910759). The industry and NRC staff agreed that a change to the Standard Technical Specification (STS) and plant-specific technical specification (TS) would be necessary to address some issues discussed in GL 2008-01. Technical Specification Task Force (TSTF)-523 contains changes to the TS surveillance requirements (SRs) and TS Bases to address some of the concerns in GL 2008-01. The licensee proposed amending the Byron Station, Unit Nos. 1 and 2, TS using a plant-specific adoption of the TSTF-523 changes.

1.2 Technical Specification Changes

Changes were proposed for SRs 3.5.2.2, 3.5.2.3, 3.6.6.1, as well as the addition of new SRs 3.4.6.4, 3.4.7.4, 3.4.8.3, 3.6.6.9, 3.9.5.2, and 3.9.6.3 to TS 3.4.6, "Reactor Coolant System (RCS) Loops -MODE 4," TS 3.4.7, "RCS Loops - MODE 5, Loops Filled," TS 3.4.8, "RCS Loops - MODE 5, Loops Not Filled," TS 3.5.2, "ECCS – Operating," TS 3.6.6, "Containment Spray and Cooling Systems," TS 3.9.5, "RHR [residual heat removal] and Coolant Circulation – High Water Level," and TS 3.9.6, "RHR and Coolant Circulation – Low Water Level," respectively.

1.3 Regulatory Review

The regulations in Appendix A to Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50 provide design requirements. Appendix B to 10 CFR Part 50, the TSs, and the licensee quality assurance programs provide operating requirements. The regulatory requirements of 10 CFR Part 50, Appendix A, that are applicable to gas management in the subject systems include: General Design Criteria (GDC,) 1, 34, 35, 36, 37, 38, 39 and 40. GDC 1 requires that the subject systems be designed, fabricated, erected, and tested to quality standards. GDC 34 requires an RHR system designed to maintain specified acceptable fuel design limits and to meet design conditions that are not exceeded if a single-failure occurs and specified

electrical power systems fail. GDCs 35, 36, and 37 require an ECCS design that meets performance, inspection, and testing requirements. Additionally, the regulations in 10 CFR 50.46 provide specified ECCS performance criteria. GDCs 38, 39, and 40 require a containment heat removal system design that meets performance, inspection, and testing requirements.

Quality assurance criteria provided in 10 CFR Part 50, Appendix B, that apply to gas management in the subject systems include: Criteria III, V, XI, XVI, and XVII. Criteria III and V require measures to ensure that applicable regulatory requirements and the design basis, as defined in 10 CFR 50.2, "Definitions," and as specified in the license application, are correctly translated into controlled specifications, drawings, procedures, and instructions. Criterion XI requires a test program to ensure that the subject systems will perform satisfactorily in service and requires that test results shall be documented and evaluated to ensure that test requirements have been satisfied. Criterion XVI requires measures to ensure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances, are promptly identified and corrected, and that significant conditions adverse to quality are documented and reported to management. Criterion XVII requires maintenance of records of activities affecting quality.

The NRC's regulatory requirements related to the content of the TSs are contained in 10 CFR 50.36(c). The regulations at 10 CFR 50.36 require that the TSs include items in the following categories: (1) safety limits, limiting safety systems settings, and limiting control settings; (2) Limiting Conditions for Operation (LCO); (3) SRs; (4) design features; and (5) administrative controls. 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. Typically, TS Section 5 requires that licensees establish, implement, and maintain written procedures covering the applicable procedures recommended in Appendix A to Regulatory Guide (RG) 1.33, "Quality Assurance Program Requirements (Operation)." Appendix A to RG 1.33 identifies instructions for filling and venting the ECCS and DHR system, as well as for draining and refilling heat exchangers. STSs and most licensee TSs include SRs to verify that at least some of the subject systems piping is filled with water.

The NRC's guidance for the format and content of licensee TSs can be found in NUREG-1431, "Standard Technical Specifications - Westinghouse Plants."

Regulatory guidance for the NRC staff's review of containment heat removal systems, ECCS, and RHR systems is provided in the following revisions and sections of NUREG-0800, "Standard Review Plan [SRP] for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR Edition" during the review.

- Revision 5 of SRP, Section 6.2.2, "Containment Heat Removal Systems," dated March 2007 (ADAMS Accession No. ML070160661), provides the procedures concerning the review of containment heat removal under post-accident conditions to help ensure compliance with GDCs 38, 39, and 40.

- Revision 3 of SRP, Section 6.3, "Emergency Core Cooling System," dated March 2007 (ADAMS Accession No. ML070550068), provides the procedures concerning the review of ECCS to help ensure compliance with GDCs 35, 36, and 37.
- Revision 5 of SRP, Section 5.4.7, "Residual Heat Removal (RHR) System," dated May 2010 (ADAMS Accession No. ML100680577), provides the procedures concerning the review of RHR system as it is used to cool the reactor coolant system (RCS) during and following shutdown to help ensure compliance with GDC 34.

2.0 TECHNICAL EVALUATION

The proposed change adopted the TS format and content, to the extent practicable, contained in the changes made to NUREG-1431, "Standard Technical Specifications Westinghouse Plants" by TSTF-523. As discussed below, the NRC staff compared the proposed changes to the existing SRs, as well as the regulatory requirements of 10 CFR 50.36(c). The licensee proposed the following TS changes:

- (1) Add SR 3.4.6.4, which states, "Verify required RHR loop locations susceptible to gas accumulation are sufficiently filled with water" with a note that states "Not required to be performed until 12 hours after entering MODE 4," and a frequency in accordance with the Surveillance Frequency Control Program.
- (2) Add SR 3.4.7.4, which states, "Verify required RHR loop locations susceptible to gas accumulation are sufficiently filled with water," with a frequency in accordance with the Surveillance Frequency Control Program.
- (3) Add SR 3.4.8.3, which states "Verify RHR loop locations susceptible to gas accumulation are sufficiently filled with water," with a frequency in accordance with the Surveillance Frequency Control Program.
- (4) Add a note to SR 3.5.2.2, which states, "Not required to be met for system vent flow paths opened under administrative control."
- (5) Revise the language for SR 3.5.2.3 from "Verify ECCS piping is full of water" to "Verify ECCS locations susceptible to gas accumulation are sufficiently filled with water."
- (6) Add a note to SR 3.6.6.1, which states, "Not required to be met for system vent flow paths opened under administrative control."
- (7) Add SR 3.6.6.9, which states, "Verify containment spray locations susceptible to gas accumulation are sufficiently filled with water," with a frequency in accordance with the Surveillance Frequency Control Program.
- (8) Add SR 3.9.5.2, which states, "Verify required RHR loop locations susceptible to gas accumulation are sufficiently filled with water," with a frequency in accordance with the Surveillance Frequency Control Program.

- (9) Add SR 3.9.6.3, which states, "Verify RHR loop locations susceptible to gas accumulation are sufficiently filled with water," with a frequency in accordance with the Surveillance Frequency Control Program.

The NRC staff developed new language for the SRs using licensee responses to GL 2008-01 and the NRC discussion contained in Task Interface Agreement (TIA) 2008-03, "Emergency Core Cooling System Voiding Relative To Compliance With Surveillance Requirements (SRs) 3.5.1.1, 3.5.2.3, and 3.5.3.1" (ADAMS Accession No. ML082560209). Many of the GL 2008-01 responses stated that licensees identified system locations susceptible to gas accumulation. In the TIA, the NRC stated that the intent of the TS SRs, which state "full of water," may be met if the licensee can establish, through an Operability Determination, that there is a reasonable expectation that the system in question will perform its specified safety function. Therefore the phrase, "sufficiently filled with water" was recommended for the proposed TS changes. In the TSs, "sufficiently filled with water" is understood to mean "sufficiently filled with water to support Operability." The regulation at 10 CFR 50.36(c)(3) states that one of the purposes of the SR is to verify that the LCO is met. Therefore, the new SR language, "[By] Verify[ing] the [system name] locations susceptible to gas accumulation are sufficiently filled with water," is acceptable since this language will allow the licensee to make a conclusion as to whether or not a system is operable.

The language for the notes that state that the SR does not have to be performed until 12 hours after entering MODE 4 is acceptable because the note provides a limited time to perform the Surveillance after entering the Applicability of the LCO; however, under the STS usage rules (STS Section 1.4), the requirement to manage gas accumulation is not affected. Licensees must have confidence that the SR can be met or the LCO must be declared not met.

The language for the notes that allow the SRs to not be met for system vent flow paths opened under administrative control is necessary to allow the licensee to credit administratively controlled manual action to close the system vent flow path in order to maintain system Operability during system venting and performance of the proposed gas accumulation SR. Therefore, these notes are acceptable.

The NRC staff found that the proposed SRs meet the regulatory requirements of 10 CFR 50.36 because they provide assurance that the necessary quality of systems and components will be maintained and that the LCO will be met. Therefore, the NRC staff finds the proposed amendment acceptable.

REGULATORY AND TECHNICAL EVALUATIONS CLINTON POWER STATION, UNIT 1

1.0 REGULATORY EVALUATION

1.1 Background

Gas accumulation in reactor systems can result in water hammer, pump cavitation, and pumping of non-condensable gas into the reactor vessel. These effects may result in the subject system being unable to perform its specified safety function. The U.S. Nuclear Regulatory Commission (NRC) issued Generic Letter (GL) 2008-01, "Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal (DHR), and Containment Spray Systems (CS)," in January 2008 to address the issue of gas accumulation in emergency core cooling system (ECCS), DHR, and CS systems (Agencywide Documents Access and Management System (ADAMS) Accession No. ML072910759). The industry and NRC staff agreed that a change to the Standard Technical Specification (STS) and plant-specific technical specification (TS) would be necessary to address some issues discussed in GL 2008-01. Technical Specification Task Force (TSTF)-523 contains changes to the TS surveillance requirements (SRs) and TS Bases to address some of the concerns in GL 2008-01. The licensee proposed amending the Clinton Power Station, Unit 1, TS using a plant-specific adoption of the TSTF-523 changes.

1.2 Technical Specification Changes

Changes were proposed for SRs 3.5.1.1, 3.5.1.2, 3.5.2.3, 3.5.2.4, 3.5.3.1, 3.5.3.2, and 3.6.1.7.1 as well as the addition of new SRs 3.4.9.2, 3.4.10.2, 3.6.1.7.5, 3.6.2.3.3, 3.9.8.2, and 3.9.9.2 to TS 3.4.9, "RHR [residual heat removal] Shutdown Cooling System – Hot Shutdown," TS 3.4.10, "RHR Shutdown Cooling System – Cold Shutdown," TS 3.5.1, "ECCS - Operating," TS 3.5.2, "ECCS – Shutdown," TS 3.5.3, "RCIC System," TS 3.6.1.7, "RHR Containment Spray System," TS 3.6.2.3, "RHR Suppression Pool Cooling," TS 3.9.8, "RHR - High Water Level," and TS 3.9.9, "RHR – Low Water Level," respectively.

1.3 Regulatory Review

The regulations in Appendix A to Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50 provide design requirements. Appendix B to 10 CFR Part 50, the TSs, and the licensee quality assurance programs provide operating requirements. The regulatory requirements of 10 CFR Part 50, Appendix A, that are applicable to gas management in the subject systems include: General Design Criteria (GDCs) 1, 34, 35, 36, 37, 38, 39 and 40. GDC 1 requires that the subject systems be designed, fabricated, erected, and tested to quality standards. GDC 34 requires an RHR system designed to maintain specified acceptable fuel design limits and to meet design conditions that are not exceeded if a single failure occurs and specified

electrical power systems fail. GDCs 35, 36, and 37 require an ECCS design that meets performance, inspection, and testing requirements. Additionally, the regulations in 10 CFR 50.46 provide specified ECCS performance criteria. GDCs 38, 39, and 40 require a containment heat removal system design that meets performance, inspection, and testing requirements.

Quality assurance criteria provided in 10 CFR Part 50, Appendix B, that apply to gas management in the subject systems include: Criteria III, V, XI, XVI, and XVII. Criteria III and V require measures to ensure that applicable regulatory requirements and the design basis, as defined in 10 CFR 50.2, "Definitions," and as specified in the license application, are correctly translated into controlled specifications, drawings, procedures, and instructions. Criterion XI requires a test program to ensure that the subject systems will perform satisfactorily in service and requires that test results shall be documented and evaluated to ensure that test requirements have been satisfied. Criterion XVI requires measures to ensure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances, are promptly identified and corrected, and that significant conditions adverse to quality are documented and reported to management. Criterion XVII requires maintenance of records of activities affecting quality.

The NRC's regulatory requirements related to the content of the TSs are contained in 10 CFR 50.36(c). The regulations at 10 CFR 50.36 require that the TSs include items in the following categories: (1) safety limits, limiting safety systems settings, and limiting control settings; (2) Limiting Conditions for Operation (LCO); (3) SRs; (4) design features; and (5) administrative controls. 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. Typically, TS Section 5 requires that licensees establish, implement, and maintain written procedures covering the applicable procedures recommended in Appendix A to Regulatory Guide (RG) 1.33, "Quality Assurance Program Requirements (Operation)." Appendix A to RG 1.33 identifies instructions for filling and venting the ECCS and DHR system, as well as for draining and refilling heat exchangers. Standard TSs and most licensee TSs include SRs to verify that at least some of the subject systems piping is filled with water.

The NRC's guidance for the format and content of the licensees' TSs can be found in NUREG-1434, "Standard Technical Specifications General Electric Plants, Boiling-Water Reactor (BWR)/6."

Regulatory guidance for the NRC staff's review of containment heat removal systems, ECCS, and RHR systems is provided in the following revisions and sections of NUREG-0800, "Standard Review Plan [SRP] for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR Edition" during the review.

- Revision 5 of SRP, Section 6.2.2, "Containment Heat Removal Systems," dated March 2007 (ADAMS Accession No. ML070160661), provides the procedures concerning the review of containment heat removal under post-accident conditions to help ensure compliance with GDCs 38, 39, and 40.

- Revision 3 of SRP, Section 6.3, "Emergency Core Cooling System," dated March 2007 (ADAMS Accession No. ML070550068), provides the procedures concerning the review of ECCS to help ensure compliance with GDCs 35, 36, and 37.
- Revision 5 of SRP, Section 5.4.7, "Residual Heat Removal (RHR) System," dated May 2010 (ADAMS Accession No. ML100680577), provides the procedures concerning the review of RHR system as it is used to cool the reactor coolant system (RCS) during and following shutdown to help ensure compliance with GDC 34.

2.0 TECHNICAL EVALUATION

The proposed change adopted the TS format and content, to the extent practicable, contained in the changes made to NUREG-1434, "Standard Technical Specifications General Electric Plants, BWR/6," by TSTF-523. As discussed below, the NRC staff compared the proposed changes to the existing SRs, as well as the regulatory requirements of 10 CFR 50.36(c). The licensee proposed the following TS changes:

- (1) Add SR 3.4.9.2, which states, "Verify RHR shutdown cooling subsystem locations susceptible to gas accumulation are sufficiently filled with water," with a note that states "Not required to be performed until 12 hours after reactor steam dome pressure is less than the RHR cut in permissive pressure" and a frequency of in accordance with the Surveillance Frequency Control Program.
- (2) Add SR 3.4.10.2, which states, "Verify RHR shutdown cooling subsystem locations susceptible to gas accumulation are sufficiently filled with water," with a frequency in accordance with the Surveillance Frequency Control Program.
- (3) Revise the language for SR 3.5.1.1 from "Verify, for each ECCS injection/spray subsystem, the piping is filled with water from the pump discharge valve to the injection valve" to "Verify, for each ECCS injection/spray subsystem, locations susceptible to gas accumulation are sufficiently filled with water."
- (4) Add a note to SR 3.5.1.2, which states, "Not required to be met for system vent flow paths opened under administrative control."
- (5) Revise the language for SR 3.5.2.3 from "Verify, for each required ECCS injection/spray subsystem, the piping is filled with water from the pump discharge valve to the injection valve" to "Verify, for each required ECCS injection/spray subsystem, locations susceptible to gas accumulation are sufficiently filled with water."
- (6) Add a note to SR 3.5.2.4, which states, "Not required to be met for system vent flow paths opened under administrative control."
- (7) Revise the language for SR 3.5.3.1 from "Verify the RCIC [reactor core isolation cooling] system piping is filled with water from the pump discharge valve to the injection valve" to "Verify the RCIC system locations susceptible to gas accumulation are sufficiently filled with water."

- (8) Add a note to SR 3.5.3.2, which states, "Not required to be met for system vent flow paths opened under administrative control."
- (9) Add a note to SR 3.6.1.7.1, which states, "Not required to be met for system vent flow paths opened under administrative control."
- (10) Add SR 3.6.1.7.5, which states, "Verify RHR Containment Spray subsystem locations susceptible to gas accumulation are sufficiently filled with water," with a frequency in accordance with the Surveillance Frequency Control Program.
- (11) Add SR 3.6.2.3.3, which states, "Verify RHR suppression pool cooling subsystem locations susceptible to gas accumulation are sufficiently filled with water," with a frequency in accordance with the Surveillance Frequency Control Program.
- (12) Add SR 3.9.8.2, which states, "Verify required RHR shutdown cooling subsystem locations susceptible to gas accumulation are sufficiently filled with water," with a frequency in accordance with the Surveillance Frequency Control Program.
- (13) Add SR 3.9.9.2, which states, "Verify RHR shutdown cooling subsystem locations susceptible to gas accumulation are sufficiently filled with water," with a frequency in accordance with the Surveillance Frequency Control Program.

The NRC staff developed new language for the SRs using licensee responses to GL 2008-01 and the NRC discussion contained in Task Interface Agreement (TIA) 2008-03, "Emergency Core Cooling System Voiding Relative To Compliance With Surveillance Requirements (SRs) 3.5.1.1, 3.5.2.3, and 3.5.3.1" (ADAMS Accession No. ML082560209). Many of the GL 2008-01 responses stated that licensees identified system locations susceptible to gas accumulation. In the TIA, the NRC stated that the intent of the TS SRs, which state "full of water," may be met if the licensee can establish, through an Operability determination, that there is a reasonable expectation that the system in question will perform its specified safety function. Therefore the phrase, "sufficiently filled with water" was recommended for the proposed TS changes. In the TSs, "sufficiently filled with water" is understood to mean "sufficiently filled with water to support Operability." The regulation at 10 CFR 50.36(c)(3) states that one of the purposes of the SR is to verify that the LCO is met. Therefore, the new SR language, "[By] Verify[ing] the [system name] locations susceptible to gas accumulation are sufficiently filled with water," is acceptable since this language will allow the licensee to make a conclusion as to whether or not a system is operable.

The language for the notes that state that the SR does not have to be performed until 12 hours after reactor steam dome pressure is less than the RHR cut in permissive pressure is acceptable because the note provides a limited time to perform the Surveillance after entering the Applicability of the LCO; however, under the STS usage rules (STS Section 1.4), the requirement to manage gas accumulation is not affected. Licensees must have confidence that the SR can be met or the LCO must be declared not met.

The language for the notes that allow the SRs to not be met for system vent flow paths opened under administrative control is necessary to allow the licensee to credit administratively controlled manual action to close the system vent flow path in order to maintain system Operability during system venting and performance of the proposed gas accumulation SR. Therefore, these notes are acceptable.

The NRC staff found that the proposed SRs meet the regulatory requirements of 10 CFR 50.36 because they provide assurance that the necessary quality of systems and components will be maintained and that the LCO will be met. Therefore, the NRC staff finds the proposed amendment acceptable.

REGULATORY AND TECHNICAL EVALUATIONS DRESDEN NUCLEAR POWER STATION, UNITS 2 AND 3

1.0 REGULATORY EVALUATION

1.1 Background

Gas accumulation in reactor systems can result in water hammer, pump cavitation, and pumping of non-condensable gas into the reactor vessel. These effects may result in the subject system being unable to perform its specified safety function. The U.S. Nuclear Regulatory Commission (NRC) issued Generic Letter (GL) 2008-01, "Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal (DHR), and Containment Spray Systems (CS)," in January 2008 to address the issue of gas accumulation in ECCS [emergency core cooling system], DHR, and CS systems (ADAMS Accession No. ML072910759). The industry and NRC staff agreed that a change to the Standard Technical Specification (STS) and plant-specific technical specification (TS) would be necessary to address some issues discussed in GL 2008-01. Technical Specification Task Force (TSTF)-523 contains changes to the TS SRs (surveillance requirements) and TS Bases to address some of the concerns in GL 2008-01. The licensee proposed amending the Dresden Nuclear Power Station, Units 1 and 2, TS using a plant-specific adoption of the TSTF-523 changes.

1.2 Technical Specification Changes

Changes were proposed for SRs 3.5.1.1, 3.5.1.2, 3.5.2.2, and 3.5.2.3, as well as the addition of new SRs 3.4.7.2, 3.4.8.2, 3.6.2.3.3, 3.6.2.4.3, 3.9.8.2, and 3.9.9.2 to TS 3.4.7, "SDC [shutdown cooling] System – Hot Shutdown," TS 3.4.8, "SDC System – Cold Shutdown," TS 3.5.1, "ECCS – Operating," TS 3.5.2, "ECCS – Shutdown," TS 3.6.2.3, "Suppression Pool Cooling," TS 3.6.2.4, "Suppression Pool Spray," TS 3.9.8, "SDC – High Water Level," and TS 3.9.9, "SDC – Low Water Level," respectively.

1.3 Regulatory Review

The regulations in Appendix B to Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, the TSs, and the licensee quality assurance programs provide operating requirements. For Dresden Nuclear Power Station, plant-specific principal design criteria provide design requirements and are described in Chapter 3 of the Updated Final Safety Analysis Report (UFSAR). The plant-specific principal design criteria applicable to gas management in the subject systems include: General Design Criteria (GDCs) 1, 34, 35, 36, 37, 38, 39 and 40. Criterion 1 requires that the subject systems be designed, fabricated, erected, and tested to quality standards. GDC 34 requires a residual heat removal (RHR) system to function under emergency cooling conditions with sufficient redundancy, independent power sources and high

reliability. GDCs 35, 36, and 37 require an ECCS design that meets performance, inspection, and testing requirements. Additionally, the regulations in 10 CFR 50.46 provide specified ECCS performance criteria. Criteria 38, 39, and 40 require a containment heat removal system design that meets performance, inspection, and testing requirements.

Quality assurance criteria provided in 10 CFR Part 50, Appendix B, that apply to gas management in the subject systems include: Criteria III, V, XI, XVI, and XVII. Criteria III and V require measures to ensure that applicable regulatory requirements and the design basis, as defined in 10 CFR 50.2, "Definitions," and as specified in the license application, are correctly translated into controlled specifications, drawings, procedures, and instructions. Criterion XI requires a test program to ensure that the subject systems will perform satisfactorily in service and requires that test results shall be documented and evaluated to ensure that test requirements have been satisfied. Criterion XVI requires measures to ensure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances, are promptly identified and corrected, and that significant conditions adverse to quality are documented and reported to management. Criterion XVII requires maintenance of records of activities affecting quality.

The NRC's regulatory requirements related to the content of the TSs are contained in 10 CFR 50.36(c). The regulations at 10 CFR 50.36 require that the TSs include items in the following categories: (1) safety limits, limiting safety systems settings, and limiting control settings; (2) Limiting Conditions for Operation (LCO); (3) SRs; (4) design features; and (5) administrative controls. 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. Typically, TS Section 5 requires that licensees establish, implement, and maintain written procedures covering the applicable procedures recommended in Appendix A to Regulatory Guide (RG) 1.33, "Quality Assurance Program Requirements (Operation)." Appendix A to RG 1.33 identifies instructions for filling and venting the ECCS and DHR system, as well as for draining and refilling heat exchangers. Standard TSs and most licensee TSs include SRs to verify that at least some of the subject systems piping is filled with water.

The NRC's guidance for the format and content of licensee TSs can be found in NUREG-1433, "Standard Technical Specifications General Electric Plants Boiling Water Reactor (BWR)/4."

2.0 TECHNICAL EVALUATION

The proposed change adopted the TS format and content, to the extent practicable, contained in the changes made to NUREG-1433, "Standard Technical Specifications General Electric Plants BWR/4" by TSTF-523. As discussed below, the NRC staff compared the proposed changes to the existing SRs, as well as the regulatory requirements of 10 CFR 50.36(c). The licensee proposed the following TS changes:

- (1) Add SR 3.4.7.2, which states, "Verify SDC subsystem locations susceptible to gas accumulation are sufficiently filled with water," together with a note that states "Not required to be performed until 12 hours after reactor vessel coolant temperature is less than the SDC cut in permissive temperature" and a frequency of in accordance with the Surveillance Frequency Control Program.
- (2) Add SR 3.4.8.2, which states, "Verify SDC subsystem locations susceptible to gas accumulation are sufficiently filled with water," with a frequency in accordance with the Surveillance Frequency Control Program.
- (3) Revise the language for SR 3.5.1.1 from "Verify, for each ECCS injection/spray subsystem, the piping is filled with water from the pump discharge valve to the injection valve," to "Verify, for each ECCS injection/spray subsystem, locations susceptible to gas accumulation are sufficiently filled with water."
- (4) Add a note to SR 3.5.1.2, which states, "Not required to be met for system vent flow paths opened under administrative control."
- (5) Revise the language for SR 3.5.2.2 from "Verify, for each required ECCS injection/spray subsystem, the piping is filled with water from the pump discharge valve to the injection valve," to "Verify, for each required ECCS injection/spray subsystem, locations susceptible to gas accumulation are sufficiently filled with water."
- (6) Add a note to SR 3.5.2.3, which states, "Not required to be met for system vent flow paths opened under administrative control."
- (7) Add SR 3.6.2.3.3, which states, "Verify suppression pool cooling subsystem locations susceptible to gas accumulation are sufficiently filled with water," with a frequency in accordance with the Surveillance Frequency Control Program.
- (8) Add SR 3.6.2.4.3, which states, "Verify suppression pool spray subsystem locations susceptible to gas accumulation are sufficiently filled with water," with a frequency in accordance with the Surveillance Frequency Control Program.
- (9) Add SR 3.9.8.2, which states, "Verify required SDC subsystem locations susceptible to gas accumulation are sufficiently filled with water," with a frequency in accordance with the Surveillance Frequency Control Program.

- (10) Add SR 3.9.9.2, which states, "Verify SDC subsystem locations susceptible to gas accumulation are sufficiently filled with water," with a frequency in accordance with the Surveillance Frequency Control Program.

The NRC staff developed new language for the SRs using licensee responses to GL 2008-01 and the NRC discussion contained in Task Interface Agreement (TIA) 2008-03, "Emergency Core Cooling System Voiding Relative To Compliance With Surveillance Requirements (SRs) 3.5.1.1, 3.5.2.3, and 3.5.3.1" (ADAMS Accession No. ML082560209). Many of the GL 2008-01 responses stated that licensees identified system locations susceptible to gas accumulation. In the TIA, the NRC stated that the intent of the TS SRs, which state "full of water," may be met if the licensee can establish, through an Operability Determination, that there is a reasonable expectation that the system in question will perform its specified safety function. Therefore the phrase, "sufficiently filled with water" was recommended for the proposed TS changes. In the TSs, "sufficiently filled with water" is understood to mean "sufficiently filled with water to support Operability." The regulation at 10 CFR 50.36(c)(3) states that one of the purposes of the SR is to verify that the LCO is met. Therefore, the new SR language, "[By] Verify[ing] the [system name] locations susceptible to gas accumulation are sufficiently filled with water," is acceptable since this language will allow the licensee to make a conclusion as to whether or not a system is operable.

The language for the note that state that the SR does not have to be performed until 12 hours after reactor vessel coolant temperature is less than the SDC cut in permissive temperature is acceptable because the note provides a limited time to perform the Surveillance after entering the Applicability of the LCO; however, under the STS usage rules (STS Section 1.4), the requirement to manage gas accumulation is not affected. Licensees must have confidence that the SR can be met or the LCO must be declared not met.

The language for the notes that allow the SRs to not be met for system vent flow paths opened under administrative control is necessary to allow the licensee to credit administratively controlled manual action to close the system vent flow path in order to maintain system Operability during system venting and performance of the proposed gas accumulation SR. Therefore, these notes are acceptable.

The NRC staff found that the proposed SRs meet the regulatory requirements of 10 CFR 50.36 because they provide assurance that the necessary quality of systems and components will be maintained and that the LCO will be met. Therefore, the NRC staff finds the proposed amendment acceptable.

REGULATORY AND TECHNICAL EVALUATIONS LASALLE COUNTY STATION, UNITS 1 AND 2

1.0 REGULATORY EVALUATION

1.1 Background

Gas accumulation in reactor systems can result in water hammer, pump cavitation, and pumping of non-condensable gas into the reactor vessel. These effects may result in the subject system being unable to perform its specified safety function. The U.S. Nuclear Regulatory Commission (NRC) issued Generic Letter (GL) 2008-01, "Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal (DHR), and Containment Spray Systems (CS)," in January 2008 to address the issue of gas accumulation in ECCS (emergency core cooling system), DHR, and CS systems (ADAMS Accession No. ML072910759). The industry and NRC staff agreed that a change to the Standard Technical Specification (STS) and plant-specific technical specification (TS) would be necessary to address some issues discussed in GL 2008-01. Technical Specification Task force (TSTF)-523 contains changes to the TS surveillance requirements (SRs) and TS Bases to address some of the concerns in GL 2008-01. The licensee proposed amending the LaSalle County Station, Units 1 and 2, TS using a plant-specific adoption of the TSTF-523 changes.

1.2 Technical Specification Changes

Changes were proposed for SRs 3.5.1.1, 3.5.1.2, 3.5.2.3, 3.5.2.4, 3.5.3.1, and 3.5.3.2, as well as the addition of new SRs 3.4.9.2, 3.4.10.2, 3.6.2.3.3, 3.6.2.4.3, 3.9.8.2, and 3.9.9.2 to TS 3.4.9, "RHR [residual heat removal] Shutdown Cooling System – Hot Shutdown," TS 3.4.10, "RHR Shutdown Cooling System – Cold Shutdown," TS 3.5.1, "ECCS – Operating," TS 3.5.2, "ECCS – Shutdown," TS 3.5.3, "RCIC [reactor core isolation] System," TS 3.6.2.3, "RHR Suppression Pool Cooling," TS 3.6.2.4, "RHR Suppression Pool Spray," TS 3.9.8, "RHR – High Water Level," and TS 3.9.9, "RHR – Low Water Level," respectively.

1.3 Regulatory Review

The regulations in Appendix A to Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50 provide design requirements. Appendix B to 10 CFR Part 50, the TSs, and the licensee quality assurance programs provide operating requirements. The regulatory requirements of 10 CFR Part 50, Appendix A, that are applicable to gas management in the subject systems include: General Design Criteria (GDCs) 1, 34, 35, 36, 37, 38, 39 and 40. GDC 1 requires that the subject systems be designed, fabricated, erected, and tested to quality standards. GDC 34 requires an RHR system designed to maintain specified acceptable fuel design limits and to

meet design conditions that are not exceeded if a single-failure occurs and specified electrical power systems fail. GDCs 35, 36, and 37 require an ECCS design that meets performance, inspection, and testing requirements. Additionally, the regulations in 10 CFR 50.46 provide specified ECCS performance criteria. GDCs 38, 39, and 40 require a containment heat removal system design that meets performance, inspection, and testing.

Quality assurance criteria provided in 10 CFR Part 50, Appendix B, that apply to gas management in the subject systems include: Criteria III, V, XI, XVI, and XVII. Criteria III and V require measures to ensure that applicable regulatory requirements and the design basis, as defined in 10 CFR 50.2, "Definitions," and as specified in the license application, are correctly translated into controlled specifications, drawings, procedures, and instructions. Criterion XI requires a test program to ensure that the subject systems will perform satisfactorily in service and requires that test results shall be documented and evaluated to ensure that test requirements have been satisfied. Criterion XVI requires measures to ensure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances, are promptly identified and corrected, and that significant conditions adverse to quality are documented and reported to management. Criterion XVII requires maintenance of records of activities affecting quality.

The NRC's regulatory requirements related to the content of the TSs are contained in 10 CFR 50.36(c). The regulations at 10 CFR 50.36 require that the TSs include items in the following categories: (1) safety limits, limiting safety systems settings, and limiting control settings; (2) Limiting Conditions for Operation (LCO); (3) SRs; (4) design features; and (5) administrative controls. 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. Typically, TS Section 5 requires that licensees establish, implement, and maintain written procedures covering the applicable procedures recommended in Appendix A to Regulatory Guide (RG) 1.33, "Quality Assurance Program Requirements (Operation)." Appendix A to RG 1.33 identifies instructions for filling and venting the ECCS and DHR system, as well as for draining and refilling heat exchangers. STSs and most licensee TSs include SRs to verify that at least some of the subject systems piping is filled with water.

The NRC's guidance for the format and content of licensee's TSs can be found in NUREG-1433, "Standard Technical Specifications General Electric Plants Boiling Water Reactor (BWR)/4," and NUREG-1434, "Standard Technical Specifications General Electric Plants, BWR/6."

Regulatory guidance for the NRC staff's review of containment heat removal systems, ECCS, and RHR systems is provided in the following revisions and sections of NUREG-0800, "Standard Review Plan [SRP] for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR Edition" during the review.

- Revision 5 of SRP, Section 6.2.2, "Containment Heat Removal Systems," dated March 2007 (ADAMS Accession No. ML070160661), provides the procedures concerning the review of

- containment heat removal under post-accident conditions to help ensure compliance with GDCs 38, 39, and 40.
- Revision 3 of SRP, Section 6.3, "Emergency Core Cooling System," dated March 2007 (ADAMS Accession No. ML070550068), provides the procedures concerning the review of ECCS to help ensure compliance with GDCs 35, 36, and 37.
- Revision 5 of SRP, Section 5.4.7, "Residual Heat Removal (RHR) System," dated May 2010 (ADAMS Accession No. ML100680577), provides the procedures concerning the review of RHR system as it is used to cool the reactor coolant system (RCS) during and following shutdown to help ensure compliance with GDC 34.

2.0 TECHNICAL EVALUATION

The proposed change adopted the TS format and content, to the extent practicable, contained in the changes made NUREG-1433, "Standard Technical Specifications General Electric Plants BWR/4" and NUREG-1434, "Standard Technical Specifications General Electric Plants, BWR/6" by TSTF-523. As discussed below, the NRC staff compared the proposed changes to the existing SRs, as well as the regulatory requirements of 10 CFR 50.36(c). The licensee proposed the following TS changes:

- (1) Add SR 3.4.9.2, which states, "Verify RHR shutdown cooling subsystem locations susceptible to gas accumulation are sufficiently filled with water," together with a note that states "Not required to be performed until 12 hours after reactor steam dome pressure is less than the RHR cut in permissive pressure" and a frequency of in accordance with the Surveillance Frequency Control Program.
- (2) Add SR 3.4.10.2, which states, "Verify RHR shutdown cooling subsystem locations susceptible to gas accumulation are sufficiently filled with water," with a frequency in accordance with the Surveillance Frequency Control Program.
- (3) Revise the language for SR 3.5.1.1 from "Verify, for each ECCS injection/spray subsystem, the piping is filled with water from the pump discharge valve to the injection valve," to "Verify, for each ECCS injection/spray subsystem, locations susceptible to gas accumulation are sufficiently filled with water."
- (4) Add a note to SR 3.5.1.2, which states, "Not required to be met for system vent flow paths opened under administrative control."
- (5) Revise the language for SR 3.5.2.3 from "Verify, for each required ECCS injection/spray subsystem, the piping is filled with water from the pump discharge valve to the injection valve," to "Verify, for each required ECCS injection/spray subsystem, locations susceptible to gas accumulation are sufficiently filled with water."

- (6) Add a note to SR 3.5.2.4, which states, "Not required to be met for system vent flow paths opened under administrative control."
- (7) Revise the language for SR 3.5.3.1 from, "Verify the RCIC System piping is filled with water from the pump discharge valve to the injection valve," to "Verify the RCIC system locations susceptible to gas accumulation are sufficiently filled with water."
- (8) Add a note to SR 3.5.3.2, which states, "Not required to be met for system vent flow paths opened under administrative control."
- (9) Add SR 3.6.2.3.3, which states, "Verify RHR suppression pool cooling subsystem locations susceptible to gas accumulation are sufficiently filled with water," with a frequency in accordance with the Surveillance Frequency Control Program.
- (10) Add SR 3.6.2.4.3, which states, "Verify RHR suppression pool spray subsystem locations susceptible to gas accumulation are sufficiently filled with water," with a frequency in accordance with the Surveillance Frequency Control Program.
- (11) Add SR 3.9.8.2, which states, "Verify required RHR shutdown cooling subsystem locations susceptible to gas accumulation are sufficiently filled with water," with a frequency in accordance with the Surveillance Frequency Control Program.
- (12) Add SR 3.9.9.2, which states, "Verify RHR shutdown cooling subsystem locations susceptible to gas accumulation are sufficiently filled with water," with a frequency in accordance with the Surveillance Frequency Control Program.

The NRC staff developed new language for the SRs using licensee responses to GL 2008-01 and the NRC discussion contained in Task Interface Agreement (TIA) 2008-03, "Emergency Core Cooling System Voiding Relative To Compliance With Surveillance Requirements (SRs) 3.5.1.1, 3.5.2.3, and 3.5.3.1" (ADAMS Accession No. ML082560209). Many of the GL 2008-01 responses stated that licensees identified system locations susceptible to gas accumulation. In the TIA, the NRC stated that the intent of the TS SRs, which state "full of water," may be met if the licensee can establish, through an Operability Determination, that there is a reasonable expectation that the system in question will perform its specified safety function. Therefore the phrase, "sufficiently filled with water" was recommended for the proposed TS changes. In the TSs, "sufficiently filled with water" is understood to mean "sufficiently filled with water to support Operability." The regulation at 10 CFR 50.36(c)(3) states that one of the purposes of the SR is

to verify that the LCO is met. Therefore, the new SR language, "[By] Verify[ing] the [system name] locations susceptible to gas accumulation are sufficiently filled with water," is acceptable since this language will allow the licensee to make a conclusion as to whether or not a system is operable.

The language for the notes that state that the SR does not have to be performed until 12 hours after reactor steam dome pressure is less than the RHR cut in permissive pressure is acceptable because the note provides a limited time to perform the Surveillance after entering the Applicability of the LCO; however, under the STS usage rules (STS Section 1.4), the requirement to manage gas accumulation is not affected. Licensees must have confidence that the SR can be met or the LCO must be declared not met.

The language for the notes that allow the SRs to not be met for system vent flow paths opened under administrative control is necessary to allow the licensee to credit administratively controlled manual action to close the system vent flow path in order to maintain system Operability during system venting and performance of the proposed gas accumulation SR. Therefore, these notes are acceptable.

The NRC staff found that the proposed SRs meet the regulatory requirements of 10 CFR 50.36 because they provide assurance that the necessary quality of systems and components will be maintained and that the LCO will be met. Therefore, the NRC staff finds the proposed amendment acceptable.

REGULATORY AND TECHNICAL EVALUATIONS QUAD CITIES NUCLEAR POWER STATION, UNITS 1 AND 2

1.0 REGULATORY EVALUATION

1.1 Background

Gas accumulation in reactor systems can result in water hammer, pump cavitation, and pumping of non-condensable gas into the reactor vessel. These effects may result in the subject system being unable to perform its specified safety function. The U.S. Nuclear Regulatory Commission (NRC) issued Generic Letter (GL) 2008-01, "Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal (DHR), and Containment Spray Systems (CS)," in January 2008 to address the issue of gas accumulation in ECCS (emergency core cooling system), DHR, and CS systems (Agencywide Documents Access and Management System (ADAMS) Accession No. ML072910759). The industry and NRC staff agreed that a change to the Standard Technical Specification (STS) and plant-specific technical specification (TS) would be necessary to address some issues discussed in GL 2008-01. Technical Specification Task Force (TSTF)-523 contains changes to the TS SRs (surveillance requirements) and TS Bases to address some of the concerns in GL 2008-01. The licensee proposed amending the Quad Cities Nuclear Power Station, Units 1 and 2, TS using a plant-specific adoption of the TSTF-523 changes.

1.2 Technical Specification Changes

Changes were proposed for SRs 3.5.1.1, 3.5.1.2, 3.5.2.2, 3.5.2.3, 3.5.3.1, and 3.5.3.2, as well as the addition of new SRs 3.4.7.2, 3.4.8.2, 3.6.2.3.3, 3.6.2.4.3, 3.9.8.3, and 3.9.9.3 to TS 3.4.7, "RHR [residual heat removal] Shutdown Cooling System – Hot Shutdown," TS 3.4.8, "RHR Shutdown Cooling System – Cold Shutdown," TS 3.5.1, "ECCS – Operating," TS 3.5.2, "ECCS – Shutdown," TS 3.5.3, "RCIC System," TS 3.6.2.3, "RHR Suppression Pool Cooling," TS 3.6.2.4, "RHR Suppression Pool Spray," TS 3.9.8, "RHR – High Water Level," and TS 3.9.9, "RHR – Low Water Level," respectively.

1.3 Regulatory Review

The regulations in Appendix B to Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, the TSs, and the licensee quality assurance programs provide operating requirements. For Quad Cities Nuclear Power Station, plant-specific principal design criteria provide design requirements and are described in Chapter 3 of the Updated Final Safety Analysis Report (UFSAR). The plant-specific principal design criteria applicable to gas management in the subject systems include: General Design Criteria (GDCs) 1, 44, 45, 46, 47, 48, 52, 58, 59, 60 and 61. Criterion 1 requires that the subject systems be designed, fabricated, erected, and tested to quality standards. GDCs 44, 45, 46, 47 and 48 require an ECCS design that meets

capability, inspection, and testing requirements. Additionally, the regulations in 10 CFR 50.46 provide specified ECCS performance criteria. GDCs 52, 58, 59, 60, and 61 require a containment heat removal system design that meets performance, inspection, and testing requirements.

Quality assurance criteria provided in 10 CFR Part 50, Appendix B, that apply to gas management in the subject systems include: Criteria III, V, XI, XVI, and XVII. Criteria III and V require measures to ensure that applicable regulatory requirements and the design basis, as defined in 10 CFR 50.2, "Definitions," and as specified in the license application, are correctly translated into controlled specifications, drawings, procedures, and instructions. Criterion XI requires a test program to ensure that the subject systems will perform satisfactorily in service and requires that test results shall be documented and evaluated to ensure that test requirements have been satisfied. Criterion XVI requires measures to ensure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances, are promptly identified and corrected, and that significant conditions adverse to quality are documented and reported to management. Criterion XVII requires maintenance of records of activities affecting quality.

The NRC's regulatory requirements related to the content of the TSs are contained in 10 CFR 50.36(c). The regulations at 10 CFR 50.36 require that the TSs include items in the following categories: (1) safety limits, limiting safety systems settings, and limiting control settings; (2) Limiting Conditions for Operation (LCO); (3) SRs; (4) design features; and (5) administrative controls. 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. Typically, TS Section 5 requires that licensees establish, implement, and maintain written procedures covering the applicable procedures recommended in Appendix A to Regulatory Guide (RG) 1.33, "Quality Assurance Program Requirements (Operation)." Appendix A to RG 1.33 identifies instructions for filling and venting the ECCS and DHR system, as well as for draining and refilling heat exchangers. STSs and most licensee TSs include SRs to verify that at least some of the subject systems piping is filled with water.

The NRC's guidance for the format and content of licensee TSs can be found in NUREG-1433, "Standard Technical Specifications General Electric Plants BWR/4."

2.0 TECHNICAL EVALUATION

The proposed change adopted the TS format and content, to the extent practicable, contained in the changes made to NUREG-1433, "Standard Technical Specifications General Electric Plants BWR/4" by TSTF-523. As discussed below, the NRC staff compared the proposed changes to the existing SRs, as well as the regulatory requirements of 10 CFR 50.36(c). The licensee proposed the following TS changes:

- (1) Add SR 3.4.7.2, which states, "Verify RHR shutdown cooling subsystem locations susceptible to gas accumulation are sufficiently filled with water," together with a note that states "Not required to be performed until 12 hours after reactor steam dome pressure is less than the RHR cut in

permissive pressure,” and a frequency of in accordance with the Surveillance Frequency Control Program.

- (2) Add SR 3.4.8.2, which states, “Verify RHR shutdown cooling subsystem locations susceptible to gas accumulation are sufficiently filled with water,” with a frequency in accordance with the Surveillance Frequency Control Program.
- (3) Revise the language for SR 3.5.1.1 from “Verify, for each ECCS injection/spray subsystem, the piping is filled with water from the pump discharge valve to the injection valve,” to “Verify, for each ECCS injection/spray subsystem, locations susceptible to gas accumulation are sufficiently filled with water.”
- (4) Add a note to SR 3.5.1.2, which states, “Not required to be met for system vent flow paths opened under administrative control.”
- (5) Revise the language for SR 3.5.2.2 from “Verify, for each required ECCS injection/spray subsystem, the piping is filled with water from the pump discharge valve to the injection valve,” to “Verify, for each required ECCS injection/spray subsystem, locations susceptible to gas accumulation are sufficiently filled with water.”
- (6) Add a note to SR 3.5.2.3, which states, “Not required to be met for system vent flow paths opened under administrative control.”
- (7) Revise the language for SR 3.5.3.1 from, “Verify the RCIC System piping is filled with water from the pump discharge valve to the injection valve,” to “Verify the RCIC system locations susceptible to gas accumulation are sufficiently filled with water.”
- (8) Add a note to SR 3.5.3.2, which states, “Not required to be met for system vent flow paths opened under administrative control.”
- (9) Add SR 3.6.2.3.3, which states, “Verify RHR suppression pool cooling subsystem locations susceptible to gas accumulation are sufficiently filled with water,” with a frequency in accordance with the Surveillance Frequency Control Program.
- (10) Add SR 3.6.2.4.3, which states, “Verify RHR suppression pool spray subsystem locations susceptible to gas accumulation are sufficiently filled with water,” with a frequency in accordance with the Surveillance Frequency Control Program.

- (11) Add SR 3.9.8.3, which states, "Verify required RHR shutdown cooling subsystem locations susceptible to gas accumulation are sufficiently filled with water," with a frequency in accordance with the Surveillance Frequency Control Program.
- (12) Add SR 3.9.9.3, which states, "Verify RHR shutdown cooling subsystem locations susceptible to gas accumulation are sufficiently filled with water," with a frequency in accordance with the Surveillance Frequency Control Program.

The NRC staff developed new language for the SRs using licensee responses to GL 2008-01 and the NRC discussion contained in Task Interface Agreement (TIA) 2008-03, "Emergency Core Cooling System Voiding Relative To Compliance With Surveillance Requirements (SRs) 3.5.1.1, 3.5.2.3, and 3.5.3.1" (ADAMS Accession No. ML082560209). Many of the GL 2008-01 responses stated that licensees identified system locations susceptible to gas accumulation. In the TIA, the NRC stated that the intent of the TS SRs, which state "full of water," may be met if the licensee can establish, through an Operability Determination, that there is a reasonable expectation that the system in question will perform its specified safety function. Therefore the phrase, "sufficiently filled with water" was recommended for the proposed TS changes. In the TSs, "sufficiently filled with water" is understood to mean "sufficiently filled with water to support Operability." The regulation at 10 CFR 50.36(c)(3) states that one of the purposes of the SR is to verify that the LCO is met. Therefore, the new SR language, "[By] Verify[ing] the [system name] locations susceptible to gas accumulation are sufficiently filled with water," is acceptable since this language will allow the licensee to make a conclusion as to whether or not a system is operable.

The language for the note that state that the SR does not have to be performed until 12 hours after reactor steam dome pressure is less than the RHR cut in permissive is acceptable because the note provides a limited time to perform the Surveillance after entering the Applicability of the LCO; however, under the STS usage rules (STS Section 1.4), the requirement to manage gas accumulation is not affected. Licensees must have confidence that the SR can be met or the LCO must be declared not met.

The language for the notes that allow the SRs to not be met for system vent flow paths opened under administrative control is necessary to allow the licensee to credit administratively controlled manual action to close the system vent flow path in order to maintain system operability during system venting and performance of the proposed gas accumulation SR. Therefore, these notes are acceptable.

The NRC staff found that the proposed SRs meet the regulatory requirements of 10 CFR 50.36 because they provide assurance that the necessary quality of systems and components will be maintained and that the LCO will be met. Therefore, the NRC staff finds the proposed amendment acceptable.

B. Hanson

- 2 -

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

Sincerely,

/RA/

Blake Purnell, Project Manager
Plant Licensing III-2 and
Planning and Analysis Branch
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-237, 50-249, 50-254, 50-265,
50-373, 50-374, 50-454, 50-455,
50-456, 50-457, and 50-461

Enclosures:

1. Amendment No. 183 to NPF-72
2. Amendment No. 183 to NPF-77
3. Amendment No. 189 to NPF-37
4. Amendment No. 189 to NPF-66
5. Amendment No. 204 to NPF-62
6. Amendment No. 244 to DPR-19
7. Amendment No. 237 to DPR-25
8. Amendment No. 214 to NPF-11
9. Amendment No. 200 to NPF-18
10. Amendment No. 257 to DPR-29
11. Amendment No. 252 to DPR-30
12. Safety Evaluation

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