



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

August 31, 2016

Mr. Bryan C. Hanson
President and Chief Nuclear Officer
Exelon Nuclear
Nine Mile Point Nuclear Station, LLC
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: NINE MILE POINT NUCLEAR STATION, UNITS 1 AND 2 - ISSUANCE OF
AMENDMENTS RE: SECONDARY CONTAINMENT PERSONNEL ACCESS
DOOR OPENINGS (CAC NOS. MF6974 AND MF6975)

Dear Mr. Hanson:

The Commission has issued the enclosed Amendment No. 223 to Renewed Facility Operating License No. DPR-63 and Amendment No. 157 to Renewed Facility Operating License No. NPF-69 for the Nine Mile Point Nuclear Station, Units 1 and 2 (NMP1 and NMP2, respectively). By application dated October 8, 2015, as supplemented by letter dated April 7, 2016 (Agencywide Documents Access and Management System Package Accession Nos. ML15281A028 and ML16098A145, respectively), Exelon Generation Company, LLC (the licensee) submitted a license amendment request proposing changes to the technical specifications (TS) for NMP1 and NMP2. Specifically, the licensee proposed to modify NMP1 TS Definition 1.2, Limiting Condition for Operation 3.4.3.a.1 and Surveillance Requirement (SR) 4.4.3.b.1 and NMP2 SR 3.6.4.1.3 to allow for brief, inadvertent simultaneous opening of secondary containment inner and outer access doors during normal entry and exit without having to enter into TS action statements.

B. Hanson

- 2 -

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

Sincerely,

A handwritten signature in black ink, appearing to read "B. Mozafari", written in a cursive style.

Brenda L. Mozafari, Sr. Project Manager
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-220 and 50-410

Enclosures:

1. Amendment No. 223 to DPR-63
2. Amendment No. 157 to NPF-69
3. Safety Evaluation

cc w/enclosures: Distribution via Listserv



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

NINE MILE POINT NUCLEAR STATION, LLC

EXELON GENERATION COMPANY, LLC

DOCKET NO. 50-220

NINE MILE POINT NUCLEAR STATION, UNIT 1

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 223
Renewed License No. DPR-63

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Exelon Generation Company, LLC (Exelon, the licensee) dated October 8, 2015, as supplemented by letter dated April 7, 2016, 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 1;
 - 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.

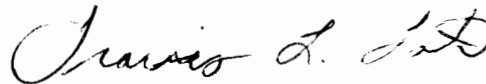
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Renewed Facility Operating License No. DPR-63 is hereby amended to read as follows:

- (2) Technical Specifications and Environmental Protection Plan

- The Technical Specifications contained in Appendices A and B, as revised through Amendment No 223, are hereby incorporated in the license. Exelon Generation, the licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance and shall be implemented within 60 days.

FOR THE NUCLEAR REGULATORY COMMISSION



Travis L. Tate, Chief
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Facility Operating License
and Technical Specifications

Date of Issuance: August 31, 2016

ATTACHMENT TO LICENSE AMENDMENT NO. 223

NINE MILE POINT NUCLEAR STATION, UNIT 1

TO RENEWED FACILITY OPERATING LICENSE NO. DPR-63

DOCKET NO. 50-220

Replace the following page of the Renewed Facility Operating License with the attached revised page. The revised page is identified by amendment number and contains marginal lines indicating the areas of change.

Remove Page
3

Insert Page
3

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

Remove Pages
5
170
171

Insert Pages
5
170
171

- (2) Exelon Generation pursuant to the Act and 10 CFR Part 70, to receive, possess and use at any time special nuclear material as reactor fuel, in accordance with the limitations for storage and amounts required for reactor operation, as described in the Final Safety Analysis Report, as supplemented and amended;
- (3) Exelon Generation 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 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 and equipment calibration or associated with radioactive apparatus or components.
- (5) Exelon Generation pursuant to the Act and 10 CFR Parts 30 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 renewed operating license shall be deemed to contain and is subject to the conditions specified in the following Commission regulations in 10 CFR Chapter I:

Part 20, Section 30.34 of Part 30; Section 40.41 of Part 40; Section 50.54 and 50.59 of Part 50; and Section 70.32 of Part 70. This renewed license 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 also 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 1850 megawatts (thermal).

(2) Technical Specifications

The Technical Specifications contained in Appendix A, which is attached hereto, as revised through Amendment No. 223 is hereby incorporated into this license. Exelon Generation shall operate the facility in accordance with the Technical Specifications.

(3) Deleted

- c. All automatic containment isolation valves are operable or are secured in the closed position.
- d. All blind flanges and manways are closed.

1.12 Reactor Building Integrity

Reactor Building Integrity means that the reactor building is closed and the following conditions are met:

- a. At least one door at each access opening is closed, except when the access opening is being used for entry and exit.
- b. The standby gas treatment system is operable.
- c. All Reactor Building ventilation system automatic isolation valves are operable or are secured in the closed position.

1.13 Core Alteration

A core alteration is the addition, removal, relocation, or other manual movement of fuel or controls in the reactor core. Control rod movement with the control rod drive hydraulic system is not considered to be a core alteration.

1.14 Rated Flux

Rated flux is the neutron flux that corresponds to a steady-state power level of 1850 thermal megawatts. The use of the term 100 percent also refers to the 1850 thermal megawatt power level.

1.15 Surveillance

Surveillance means that process whereby systems and components which are essential to plant nuclear safety during all modes of operation or which are necessary to prevent or mitigate the consequences of incidents are checked, tested, calibrated and/or inspected, as warranted, to verify performance and availability at optimum intervals.

LIMITING CONDITION FOR OPERATION

SURVEILLANCE REQUIREMENT

3.4.3 ACCESS CONTROL

Applicability:

Applies to the access control to the reactor building.

Objective:

To specify the requirements necessary to assure the integrity of the secondary containment system.

Specification:

- a. At all times when secondary containment integrity is required, the following conditions will be met:
 - 1. Only one door in each of the double-doored access ways shall be opened at one time, except when the access opening is being used for entry and exit.
 - 2. Only one door or closeup of the railroad bay shall be opened at one time.
 - 3. The core spray and containment spray pump compartments' doors shall be closed at all times except during passage in order to consider the core spray system and the containment spray system operable.

4.4.3 ACCESS CONTROL

Applicability:

Applies to the periodic checking of the condition of portions of the reactor building.

Objective:

To assure that pump compartments are properly closed at all times and to assure the integrity of the secondary containment system by verifying that reactor building access doors are closed, as required by Specifications 3.4.3.a.1 and 3.4.3.a.2.

Specification:

- a. The core and containment spray pump compartments shall be checked in accordance with the Surveillance Frequency Control Program and after each entry.

LIMITING CONDITION FOR OPERATION

- b. If these conditions cannot be met, then the actions listed below shall be taken:
1. If in the power operating condition, restore reactor building integrity within 4 hours or be in at least the hot shutdown condition within the next 12 hours and in the cold shutdown condition within the following 24 hours.

OR

If the reactor coolant system temperature is above 215°F, restore reactor building integrity within 4 hours or be in cold shutdown within the following 24 hours.

2. Suspend any of the following activities:
 - a. Handling of recently irradiated fuel in the reactor building,
 - b. Irradiated fuel cask handling operations in the reactor building,
 - c. Operations with a potential for draining the reactor vessel (OPDRVs).

SURVEILLANCE REQUIREMENT

- b. Verify in accordance with the Surveillance Frequency Control Program that:
1. At least one door in each access to the secondary containment is closed, except when the access opening is being used for entry and exit.
 2. At least one door or closeup of the railroad bay is closed.



UNITED STATES
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NINE MILE POINT NUCLEAR STATION, LLC

EXELON GENERATION COMPANY, LLC

DOCKET NO. 50-410

NINE MILE POINT NUCLEAR STATION, UNIT 2

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 157
Renewed License No. NPF-69

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Exelon Generation Company, LLC (Exelon, the licensee) dated October 8, 2015, as supplemented by letter dated April 7, 2016, 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 1;
 - 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. NPF-69 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, both of which are attached hereto, as revised through Amendment No. 157 are hereby incorporated into this license. Exelon Generation Company, LLC shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of the date of its issuance and shall be implemented within 60 days.

FOR THE NUCLEAR REGULATORY COMMISSION



Travis L. Tate, Chief
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Facility Operating License
and Technical Specifications

Date of Issuance: August 31, 2016

ATTACHMENT TO LICENSE AMENDMENT NO. 157
NINE MILE POINT NUCLEAR STATION, UNIT 2
TO RENEWED FACILITY OPERATING LICENSE NO. NPF-69
DOCKET NO. 50-410

Replace the following page of the Renewed Facility Operating License with the attached revised page. The revised page is identified by amendment number and contains marginal lines indicating the areas of change.

Remove Page
4

Insert Page
4

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

Remove Page
3.6.4.1-3

Insert Page
3.6.4.1-3

(1) Maximum Power Level

Exelon Generation is authorized to operate the facility at reactor core power levels not in excess of 3988 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, both of which are attached hereto, as revised through Amendment No. 157 are hereby incorporated into this license. Exelon Generation shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

(3) Fuel Storage and Handling (Section 9.1, SSER 4)*

- a. Fuel assemblies, when stored in their shipping containers, shall be stacked no more than three containers high.
- b. When not in the reactor vessel, no more than three fuel assemblies shall be allowed outside of their shipping containers or storage racks in the New Fuel Vault or Spent Fuel Storage Facility.
- c. The above three fuel assemblies shall maintain a minimum edge-to-edge spacing of twelve (12) inches from the shipping container array and approved storage rack locations.
- d. The New Fuel Storage Vault shall have no more than ten fresh fuel assemblies uncovered at any one time.

(4) Turbine System Maintenance Program (Section 3.5.1.3.10, SER)

The operating licensee shall submit for NRC approval by October 31, 1989, a turbine system maintenance program based on the manufacturer's calculations of missile generation probabilities. (Submitted by NMPC letter dated October 30, 1989 from C.D. Terry and approved by NRC letter dated March 15, 1990 from Robert Martin to Mr. Lawrence Burkhardt, III).

* The parenthetical notation following the title of many license conditions denotes the section of the Safety Evaluation Report (SER) and/or its supplements wherein the license condition is discussed.

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.4.1.3	Verify one secondary containment access door in each access opening is closed, except when the access opening is being used for entry and exit.	In accordance with the Surveillance Frequency Control Program
SR 3.6.4.1.4	Verify the secondary containment can be drawn down to ≥ 0.25 inch of vacuum water gauge in ≤ 66.7 seconds using one standby gas treatment (SGT) subsystem.	In accordance with the Surveillance Frequency Control Program
SR 3.6.4.1.5	Verify the secondary containment can be maintained ≥ 0.25 inch of vacuum water gauge for 1 hour using one SGT subsystem at a flow rate ≤ 2670 cfm.	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 AMENDMENTS NOS. 223 AND 157

TO RENEWED FACILITY OPERATING LICENSE NOS. DPR-63 AND NPF-69

NINE MILE POINT NUCLEAR STATION, LLC

EXELON GENERATION COMPANY, LLC

NINE MILE POINT NUCLEAR STATION, UNITS 1 AND 2

DOCKET NOS. 50-220 AND 50-410

1.0 INTRODUCTION

By application dated October 8, 2015 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML15281A028), Exelon Generation Company, LLC (Exelon or the licensee) submitted a license amendment request (LAR) proposing changes to the technical specifications (TS) for the Nine Mile Point Nuclear Station, Units 1 and 2 (NMP1 and NMP2, respectively). Specifically, the licensee is proposing to modify NMP1 TS Definition 1.12, Limiting Condition for Operation (LCO) 3.4.3.a.1 and Surveillance Requirement (SR) 4.4.3.b.1 and NMP2 SR 3.6.4.1.3 to allow for brief, inadvertent simultaneous opening of secondary containment inner and outer access doors during normal entry and exit without having to enter into TS action statements.

The supplemental letter by the licensee dated April 7, 2016 (ADAMS Accession No. ML16098A145), provided additional information that clarified the application, did not expand the scope of the application as originally published in the *Federal Register* on January 5, 2016 (81 FR 262), and did not change the U.S. Nuclear Regulatory Commission (NRC or the Commission) staff's original proposed no significant hazards consideration determination.

2.0 REGULATORY EVALUATION

Technical Specification Requirements

Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.36, "Technical specifications," establishes the regulatory requirements related to the contents of the TSs. Pursuant to 10 CFR 50.36, TSs are required to include items in the following specific categories related to station operation: (1) safety limits, limiting safety system settings, and limiting control settings; (2) LCOs; (3) SRs; (4) design features; and (5) administrative controls. In accordance with 10 CFR 50.36(c)(3), SRs are requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and Updated Final Safety Analysis Report (UFSAR)

components is maintained, that facility operation will be within safety limits, and that the limiting conditions of operation will be met. The proposed changes would revise TS 3.4.3, "Access Control," LCO 3.4.3.a.1, and SR 4.4.3.b.1 for NMP1, and TS 3.6.4.1, "Secondary Containment," SR 3.6.4.1.3 for NMP2.

General Design Criteria

As stated in 10 CFR Part 50, Appendix A, "General Design Criteria for Nuclear Power Plants" (GDC) Criterion 16, "Containment design," requires the containment design to be essentially leaktight and that the containment design conditions important to safety are not exceeded for as long as the postulated accident conditions require. NMP-1 was not licensed to Appendix A, GDC. Based on analysis performed in Section 1A of the UFSAR, the licensee's position is that the plant-specific requirements for NMP1 are sufficiently similar to 10 CFR Part 50, Appendix A, GDC. The plant design criterion 17 of NMP2 is similar to 10 CFR Part 50, Appendix A, GDC 16.

Appendix A to 10 CFR Part 50, Criterion 19, "Control room," states:

A control room shall be provided from which actions can be taken to operate the nuclear power unit safely under normal conditions and to maintain it in a safe condition under accident conditions, including loss-of-coolant accidents. Adequate radiation protection shall be provided to permit access and occupancy of the control room under accident conditions without personnel receiving radiation exposures in excess of 5 rem [0.05 Sv] whole body, or its equivalent to any part of the body, for the duration of the accident. Equipment at appropriate locations outside the control room shall be provided (1) with a design capability for prompt hot shutdown of the reactor, including necessary instrumentation and controls to maintain the unit in a safe condition during hot shutdown, and (2) with a potential capability for subsequent cold shutdown of the reactor through the use of suitable procedures.

Other Regulatory Requirements

The NRC staff identified the following regulatory requirements as being applicable to the LAR:

Section 50.67, "Accident source term," of 10 CFR, paragraph (a)(2) states that:

- (i) An individual located at any point on the boundary of the exclusion area for any 2-hour period following the onset of the postulated fission product release, would not receive a radiation dose in excess of 0.25 Sv (25 rem)² total effective dose equivalent (TEDE).
- (ii) An individual located at any point on the outer boundary of the low population zone, who is exposed to the radioactive cloud resulting from the postulated fission product release (during the entire period of its passage), would not receive a radiation dose in excess of 0.25 Sv (25 rem) total effective dose equivalent (TEDE).

- (iii) Adequate radiation protection is provided to permit access to and occupancy of the control room under accident conditions without personnel receiving radiation exposures in excess of 0.05 Sv (5 rem) total effective does equivalent (TEDE) for the duration of the accident.

Guidance Documents

The guidance documents the NRC staff considered in its review of this LAR included the following:

- Regulatory Guide (RG) 1.183, "Alternative Radiological Source Terms for Evaluating Design Basis Accidents at Nuclear Power Reactors," July 2000, provides the methodology for analyzing the radiological consequences of several design-basis accidents (DBAs) to show compliance with 10 CFR 50.67. RG 1.183 provides guidance to licensees on acceptable application of alternate source term (AST) (also known as the accident source term) submittals, including acceptable radiological analysis assumptions for use in conjunction with the accepted AST.
- NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR [Light-Water Reactor] Edition" (SRP), Section 15.0.1, "Radiological Consequence Analyses Using Alternative Source Terms," July 2000, provides guidance to the staff for the review of alternative source term amendment requests. SRP 15.0.1 states that the NRC reviewer should evaluate the proposed change against the guidance in RG 1.183.
- License Amendment No. 194, dated December 19, 2007 (ADAMS Accession No. ML073230597), and License Amendment No. 125, dated May 29, 2008 (ADAMS Accession No. ML081230439), used an AST methodology for analyzing the radiological consequences of the DBAs using RG 1.183. The NRC staff also considered relevant information in the Updated Final Safety Analysis Report (UFSAR), which describes the DBAs and evaluation of their radiological consequences for NMP1 and NMP2.

The regulatory requirements from which the NRC staff based its review include the reference values in 10 CFR 50.67, the accident specific guideline values in Regulatory Position 4.4 of RG 1.183, and Table 1 of SRP Section 15.0.1.

The reporting criteria for licensee event reports is contained in 10 CFR 50.72, "Immediate notification requirements for operating nuclear power reactors," and 10 CFR 50.73, "Licensee event report system." The reporting guidelines that the NRC staff considers acceptable for meeting the requirements of 10 CFR 50.72 and 10 CFR 50.73 are contained NUREG-1022, Revision 3, "Event Reporting Guidelines, 10 CFR 50.72 and 50.73, Final Report." Section 3.2.7 of NUREG-1022 discusses the reporting criteria in 10 CFR 50.72(b)(3)(v) and 10 CFR 50.73(a)(2)(v) relating to events or conditions that could have prevented fulfillment of a safety function. This section states, in part, that there are a limited number of single train systems that perform safety functions. For such systems, inoperability of a single train is reportable, even though the plant TSs may allow such a condition to exist for a limited time.

The Standard Technical Specifications (STS) for Boiling Water Reactor (BWR)/6 plants are contained in Volume 1, Specifications, of NUREG-1434, Revision 4.0, "Standard Technical Specifications, General Electric Plants (BWR/6)." The STSs for BWR/6 contain an exception that allows both doors in a secondary containment access opening to be open simultaneously for normal entry and exit.

3.0 TECHNICAL EVALUATION

3.1 Description of TS Changes

The proposed TS changes are contained in Attachment 2 to the licensee's letter dated April 7, 2016, as described below:

- Addition of the phrase, "except when the access opening is being used for entry and exit," to the NMP1 Reactor Building Integrity TS definition 1.12, the NMP1 LCO 3.4.3.a.1, NMP1 SR 4.4.3.b.1, and NMP2 SR 3.6.4.1.3.
- The NMP1 definition will state, "At least one door at each access opening is closed, except when the access opening is being used for entry and exit."
- The NMP1 LCO will state, "Only one door in each of the double-doored access ways shall be opened at one time, except when the access opening is being used for entry and exit."
- The NMP1 SR will state, "At least one door in each access to the secondary containment is closed, except when the access opening is being used for entry and exit."
- The NMP2 SR will state, "Verify one secondary containment access door in each access opening is closed, except when the access opening is being used for entry and exit."

3.2 Secondary Containment Safety Function

The secondary containment is a structure that completely encloses the primary containment and those components that may contain primary system fluid. The safety function of the secondary containment is to contain, dilute, and hold up fission products that may leak from primary containment following a DBA to ensure doses to the control room operator and offsite are within the regulatory limits. In conjunction with operation of the Emergency Ventilation System (EVS) for NMP1 or the Standby Gas Treatment System (SGTS) for NMP2, and closure of the secondary containment isolation valves, the secondary containment is designed to reduce the activity level of the fission products that bypass or leak from primary containment or are released from the reactor coolant pressure boundary components located in secondary containment prior to release to the environment. For the secondary containment to be considered operable, it must have adequate leak tightness to ensure that the required vacuum can be established and maintained by a single EVS for NMP1 or SGTS subsystem for NMP2 when that subsystem is in operation. The secondary containment and the EVS for NMP1, or the SGTS for NMP2 together, ensure radioactive material is contained and processed.

The proposed changes address issues related to the secondary containment boundary and access openings. The secondary containment is a single system. There is no redundant train or system that can perform the secondary containment function, should the secondary containment be inoperable.

To prevent ground level exfiltration of radioactive material while allowing the secondary containment to be designed as a conventional structure, the secondary containment requires support systems to maintain the secondary containment pressure at less than atmospheric pressure. During normal operation, non-safety-related systems are used to maintain the secondary containment at a negative pressure. Following an accident, post-accident systems and the closure of certain secondary containment boundary valves ensure the secondary containment is less than atmospheric pressure. The post-accident systems are designated as EVS for NMP1 and SGTS for NMP2. The TSs for NMP1 and NMP2 require periodic surveillance of the secondary containment vacuum and periodic testing of the SGTS capability to draw down and maintain the secondary containment vacuum during post-accident conditions. The time it takes for the EVS for NMP1 and SGTS for NMP2 to establish a negative pressure inside the secondary containment, as compared to atmospheric pressure, is referred to as the draw-down time.

The secondary containment boundary is the combination of walls, floor, roof, ducting, doors, hatches, penetrations, and equipment that physically form the secondary containment. A secondary containment access opening contains at least one inner and one outer door. All secondary containment normal access doors are normally kept closed, except when the access opening is being used for entry and exit of personnel. Some plants have interlocks to prevent or minimize occurrences of inadvertent simultaneous opening of both inner and outer doors. NMP1 and NMP 2 do not have such interlocks. The licensee stated that installation of the interlocks is not feasible, given the initial design and construction of the doors, and that interlocks installed after initial construction do not prevent simultaneous opening if the doors are opened within a half a second of each other. Therefore, occasional brief, simultaneous openings can and do occur.

The licensee stated that based on the current wording of SR 4.4.3.b.1 (NMP1) and SR 3.6.4.1 (NMP2), a simultaneous opening of both inner and outer door in an access opening would require secondary containment be declared inoperable. Since the secondary containment is a single-train system, the regulations in 10 CFR 50.72 and 10 CFR 50.73 require prompt notification and submittal of a licensee event report whenever the secondary containment is inoperable, regardless of how short a duration the inoperability. The proposed changes allow the secondary containment to be considered operable during brief, infrequent, controlled circumstances, which currently would require declaring the secondary containment inoperable.

All nuclear power plants provide and require General Employee Training for employees working at the site with unescorted access to "protected area." The training covers a variety of subjects such as access control points, radiation protection, corrective action program, radiation work permits, work orders, procedures, and other work controls. In its application dated October 8, 2015, the licensee stated that personnel are trained in Nuclear General Employee Training to not open a secondary containment personnel access door if the other door open indication light is illuminated and that administrative controls exist specifying that the user verifies an indicating light and pauses for 5 seconds prior to proceeding. The intent of these administrative controls is

to allow personnel whom may have entered the airlock at an earlier time to successfully traverse to the exit door prior to the next attempted entry or exit. Occasionally, another individual attempts access through the opposite airlock entry point, resulting in simultaneous inner and outer door openings. The frequency of inadvertent simultaneous opening events are minimized through the administrative procedures, training, door signage, and supervisory training, but cannot be completely eliminated because of the current design of the doors. In response to the NRC staff's question, the licensee's letter dated April 7, 2016, stated that the time both doors may be open simultaneously is limited to the time it takes to traverse through a door, typically less than 10 seconds.

The licensee also stressed that the intent of the proposed change is to allow for brief, inadvertent simultaneous opening of the personnel access doors during brief entry and exit without violating the TSs and that the change does not involve planned simultaneous opening of redundant secondary containment personnel access doors. In situations involving planned simultaneous opening of the doors, secondary containment will be declared inoperable, and the appropriate TS action will be followed.

3.3 Secondary Containment Draw-Down Time

In its April 7, 2016, letter, the licensee stated that the NMP1 licensing basis does not include a reactor building draw-down time requirement. The capability of the NMP1 secondary containment to maintain leakage within acceptable limits is performed by a leakage rate test once during each operating cycle as specified in SR 4.4.1. The licensing basis, as defined by LCO 4.4.1, specifies a maximum reactor building leakage of 1,600 cubic feet per minute, with SR 4.4.1 that demonstrates the system is capable of maintaining a negative pressure of at least 0.25 inches water gauge (in WG) less than atmospheric pressure with a wind speed of zero. In its application dated October 8, 2015, the licensee stated that the AST loss-of-coolant accident (LOCA) analysis considers the reactor building positive pressure period, which is defined as the period when a loss-of-offsite power causes a loss of reactor building negative pressure relative to the external atmospheric pressure. The start of the emergency diesel generator, followed by the start of the EVS, returns the reactor building to a negative pressure. The period until the reactor building returns to negative pressure relative to the atmospheric pressure is called draw-down time.

The post-LOCA primary containment leakage into the reactor building is assumed to be released directly to the environment during the draw-down period. In response to a question from the NRC staff, the licensee provided additional information by letter dated April 7, 2016. The licensee stated that per the UFSAR and the AST analyses, the reactor building pressure remains positive for approximately 26 minutes, decreases to -0.15 in WG at approximately 67 minutes, and reaches -0.25 in WG at approximately 5 hours. In its application dated October 8, 2015, the licensee stated:

Because the reactor building to atmospheric differential pressure is greater than the minimum required per NMP1 SR 4.4.1 (typically -0.33 in WG vs -0.25 in WG), substantial margin exists to ensure that the secondary containment remains operable and the functional capability of secondary containment is maintained during brief, inadvertent, simultaneous opening of inner and outer secondary containment personnel access doors.

The NRC staff agrees that functional capability of NMP1 secondary containment is maintained during brief, inadvertent, simultaneous opening of inner and outer personnel access doors typically less than approximately 10 seconds.

The capability of the NMP2 SGTS to draw-down secondary containment to ≥ 0.25 inch vacuum WG and maintain the long-term vacuum are specified in SR 3.6.4.1.4 and SR 3.6.4.1.5. In its application dated October 8, 2015, the licensee stated that one SGTS train can typically draw down secondary containment to the required vacuum in less than 33 seconds. This is considerably less than the required time of ≤ 67.5 seconds in SR 3.6.4.1.4. Therefore, the NRC staff concludes that brief, simultaneous opening of the secondary containment in the order of 10 seconds or less will have a very minor impact, if any, on the required draw-down time.

The NRC staff reviewed the control of a brief, inadvertent secondary containment breach for NMP1 and NMP2 as described above and the licensee's evaluation of any impact on the existing safety analyses. The staff finds that the licensee's approach is acceptable since it continues to ensure that the safety function of secondary containment will be maintained for both NMP1 and NMP2

3.4 Radiological Consequences Analysis

NMP1 and NMP2 were approved for AST methodology and the radiological dose consequence analyses for DBAs by License Amendment Nos. 194 and 125, respectively. The NRC staff reviewed the impact of modifying NMP1 and NMP2 TSs to allow the reactor building/secondary containment access openings to be briefly open for entry and exit on all DBAs currently analyzed in the NMP1 and NMP2 UFSAR that could have the potential for significant dose consequences. The NMP1 and NMP2 UFSAR describes the DBAs and their radiological consequence analysis results.

The NMP1 DBA LOCA analysis determined that following the start of a DBA LOCA, the reactor building pressure of -0.25 inches of water gauge is achieved at approximately 5 hours. The reactor building pressure becomes negative at approximately 26 minutes, and at approximately 67 minutes, the reactor building pressure is -0.15 inches of water gauge or less. Because NMP1 DBA LOCA analysis has sufficient conservatism, and the analysis assumes a draw-down time of 6 hours from the start of the DBA LOCA, margin exists to ensure that the reactor building (also known as secondary containment) can be reestablished during brief, simultaneous opening of inner and outer secondary containment personnel access doors. Thus, there is reasonable assurance that a failure of a safety system needed to control the release of radioactive material to the environment will not result. The brief, inadvertent, simultaneous opening of the reactor building / secondary containment personnel access doors does not impact the design bases and will not result in an increase in any on-site or off-site dose.

NMP2 typical draw-down time using one SGTS is under 60 seconds, and the DBA LOCA analysis assumes a draw-down time of 60 minutes from the start of the DBA LOCA. Margin exists to ensure that the secondary containment can be reestablished during brief, simultaneous opening of inner and outer secondary containment personnel access doors, and there is reasonable assurance that a failure of a safety system needed to control the release of radioactive material to the environment will not result. The brief, inadvertent simultaneous

opening of the reactor building / secondary containment personnel access doors does not impact the design bases and will not result in an increase in any on-site or off-site dose.

The NRC staff evaluated the impact of modifying NMP1 and NMP2 TS to allow the reactor building/secondary containment access openings to be open for entry and exit on the licensee's design-basis radiological consequence dose analyses to ensure that the modification will not result in an increase in the radiation dose consequences, and that the resulting calculated radiation doses will remain within the design criteria specified in 10 CFR 50.67 and the accident-specific design criteria outlined in RG 1.183. The NRC staff review of these DBAs determined that based on the current NMP1 and NMP2 design bases, the brief, inadvertent simultaneous opening of both an inner and outer personnel access doors during brief entry and exit conditions, and their prompt closure by normal means, is bounded by the radiological dose consequence analysis.

Based on the discussion above, the NRC staff finds that the proposed changes do not affect the NMP1 and NMP2 current radiological consequence analyses. Therefore, the NRC staff concludes that these changes are acceptable with respect to the radiological consequences of the DBAs.

The NRC staff notes that this safety evaluation approval applies to normal entry and exit through the reactor building/secondary containment access openings for the time it takes to traverse through a door and that this safety evaluation does not approve or apply to maintenance being performed on an access opening with both doors open.

3.5 Evaluation of TS Changes

The NRC staff reviewed the proposed changes to the TSs by considering whether the proposed SRs would continue to meet the requirements of 10 CFR 50.36. The regulations do not specify the format or content of the individual specifications. The proposed changes to SR 4.4.3.b.1 (NMP1) and SR 3.6.4.1 (NMP2) would add an exception to the applicability of the SRs for brief personnel entry and exit through the secondary containment access opening. The change clarifies the applicability of the requirement but does not change the method of verifying secondary containment integrity. The NRC staff determined that the proposed SRs would continue to meet the requirements in 10 CFR 50.36(c)(3), which specifies the SRs are requirements related to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, facility operation will be within safety limits, and the LCOs will be met.

The TSs for NMP1 are custom TSs. The NMP2 TSs are based on improved STS. The NRC staff reviewed the content of the corresponding TSs in NUREG-1434, Revision 4. The NRC staff found that the proposed changes for NMP1 and NMP2 are consistent with the content of the corresponding TSs in NUREG-1434.

Conforming changes were proposed to NMP1 TS Definition 1.12.a and LCO 3.4.3.a.1. The changes add an exception to the applicability of the LCO and TS Definition during normal personnel entry and exit through the secondary containment access, similar to what was proposed to SR 4.4.3.b.1 for NMP1. The changes maintain consistency between the LCO, TS Definition, and the SRs that brief, inadvertent simultaneous opening of the inner and outer doors

of secondary containment access does not cause secondary containment inoperability. The changes do not otherwise revise requirements in LCOs or make changes to the required actions if the LCO is not met.

The licensee's application dated October 8, 2015, and supplement dated April 7, 2016, provided TS Bases pages to be implemented with the associated TS changes. These pages were provided for information only and will be revised by the licensee in accordance with the TS Bases Control Program.

3.6 Technical Evaluation Conclusion

As described above, the NRC staff reviewed the technical basis provided by the licensee to assess the radiological impacts of the changes to the reactor building/secondary containment in the NMP1 and NMP2 TSs. The NRC staff finds that the licensee's proposed changes are consistent with regulatory requirements and guidance identified in Section 2.0 above. The NRC staff finds, with reasonable assurance, that the licensee's changes to the TSs will continue to comply with these criteria. Therefore, the proposed changes are acceptable with regard to the radiological consequences of the postulated DBAs. In addition, the NRC staff finds that the proposed changes are acceptable since they continue to ensure the safety function of secondary containment will be maintained.

4.0 STATE CONSULTATION

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

5.0 ENVIRONMENTAL CONSIDERATION

The amendments change a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and 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 (81 FR 262). Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

6.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) there is reasonable assurance that such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributors: K. Bucholtz, NRR
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Date: August 31, 2016

B. Hanson

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

Sincerely,

/RA/ Diane Render for

Brenda L. Mozafari, Sr. Project Manager
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-220 and 50-410

Enclosures:

1. Amendment No. 223 to DPR-63
2. Amendment No. 157 to NPF-69
3. Safety Evaluation

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