



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

April 9, 2020

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

SUBJECT: LIMERICK GENERATING STATION, UNIT 1 – ISSUANCE OF AMENDMENT NO. 245 REGARDING TECHNICAL SPECIFICATIONS CHANGE TO ALLOW A ONE-TIME INCREASE IN MAIN STEAM ISOLATION VALVE ALLOWABLE LEAKAGE RATE (EPID L-2020-LLA-0064) (**EMERGENCY CIRCUMSTANCES**)

Dear Mr. Hanson:

The U.S. Nuclear Regulatory Commission (Commission) has issued the enclosed Amendment No. 245 to Renewed Facility Operating License No. NPF-39 for the Limerick Generating Station, Unit 1. This amendment consists of changes to the Technical Specifications in response to your application dated April 1, 2020, as supplemented by letter dated April 7, 2020.

This amendment revises Technical Specification 3/4.6.1, "Primary Containment," Limiting Condition for Operation 3.6.1.2, to allow for a one-time increase in the allowable leakage rate limit for one main steam isolation valve. The one-time increase is valid during operating cycle 19.

The license amendment is issued under emergency circumstances as provided in the provisions of paragraph 50.91(a)(5) of Title 10 of the *Code of Federal Regulations* due to the time critical nature of the amendment. In this instance, an emergency situation exists due to the Centers for Disease Control recommendations advising "social distancing" or sequestering staff to prevent the spread of COVID-19 which affects the licensee's ability to perform maintenance and repairs and, thus impacting the ability of the licensee to return the unit to power.

A copy of our safety evaluation is also enclosed. The safety evaluation describes the emergency circumstances under which the amendment was issued and the final no significant hazards determination. A Notice of Issuance addressing the final no significant hazards

determination and opportunity for a hearing associated with the emergency circumstances will be included in a future biweekly *Federal Register* notice.

Sincerely,

*/RA/*

V. Sreenivas, Project Manager  
Plant Licensing Branch I  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-352

Enclosures:

1. Amendment No. 245 to  
Renewed NPF-39
2. Safety Evaluation

cc: Listserv



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

EXELON GENERATION COMPANY, LLC

DOCKET NO. 50-352

LIMERICK GENERATING STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 245  
Renewed License No. NPF-39

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 April 1, 2020, as supplemented by letter dated April 7, 2020, 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. NPF-39 is hereby amended to read as follows:

Technical Specifications

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 245, are hereby incorporated in this renewed 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 2 days.

FOR THE NUCLEAR REGULATORY COMMISSION

*/RA/*

James G. Danna, Chief  
Plant Licensing Branch I  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Renewed Facility Operating  
License and Technical Specifications

Date of Issuance: April 9, 2020

ATTACHMENT TO LICENSE AMENDMENT NO. 245

LIMERICK GENERATING STATION, UNIT 1

RENEWED FACILITY OPERATING LICENSE NO. NPF-39

DOCKET NO. 50-352

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 a marginal line indicating the area 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 Page

3/4 6-2

3/4 6-3

Insert Page

3/4 6-2

3/4 6-3

- (2) Pursuant to the Act and 10 CFR Part 70, to receive, possess and to 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) 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, 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, and to receive and possess, but not separate, such source, byproduct, and special nuclear materials as contained in the fuel assemblies and fuel channels from the Shoreham Nuclear Power Station.

C. This renewed 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 (except as exempted from compliance in Section 2.D. below) 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 3515 megawatts thermal (100% rated power) in accordance with the conditions specified herein and in Attachment 1 to this license. The items identified in Attachment 1 to this renewed license shall be completed as specified. Attachment 1 is hereby incorporated into this renewed license.

(2) Technical Specifications

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 245, are hereby incorporated into this renewed license. Exelon Generation Company shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

CONTAINMENT SYSTEMS

PRIMARY CONTAINMENT LEAKAGE

LIMITING CONDITION FOR OPERATION

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- 3.6.1.2 Primary containment leakage rates shall be limited to:
- a. An overall integrated leakage rate (Type A Test) in accordance with the Primary Containment Leakage Rate Testing Program.
  - b. A combined leakage rate in accordance with the Primary Containment Leakage Rate Testing Program for all primary containment penetrations and all primary containment isolation valves that are subject to Type B and C tests, except for: main steam line isolation valves\*, valves which are hydrostatically tested, and those valves where an exemption to Appendix J of 10 CFR 50 has been granted.
  - c. \*Less than or equal to 100\*\* scf per hour through any one main steam isolation valve not to exceed 200 scf per hour for all four main steam lines, when tested at  $P_t$ , 22.0 psig.
  - d. A combined leakage rate of less than or equal to 1 gpm times the total number of containment isolation valves in hydrostatically tested lines which penetrate the primary containment, when tested at  $1.10 P_a$ , 48.4 psig.

APPLICABILITY: When PRIMARY CONTAINMENT INTEGRITY is required per Specification 3.6.1.1.

ACTION:

With:

- a. The measured overall integrated primary containment leakage rate (Type A Test) exceeding the leakage rate specified in the Primary Containment Leakage Rate Testing Program, or
- b. The measured combined leakage rate exceeding the leakage rate specified in the Primary Containment Leakage Rate Testing Program for all primary containment penetrations and all primary containment isolation valves that are subject to Type B and C tests, except for: main steam line isolation valves\*, valves which are hydrostatically tested, and those valves where an exemption to Appendix J of 10 CFR 50 has been granted, or
- c. The measured leakage rate exceeding 100\*\* scf per hour through any one main steam isolation valve, or exceeding 200 scf per hour for all four main steam lines, or
- d. The measured combined leakage rate for all containment isolation valves in hydrostatically tested lines which penetrate the primary containment exceeding 1 gpm times the total number of such valves,

restore:

- a. The overall integrated leakage rate(s) (Type A Test) to be in accordance with the Primary Containment Leakage Rate Testing Program, and

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\*Exemption to Appendix J of 10 CFR Part 50.

\*\*During Unit 1 Cycle 19, one main steam isolation valve may exceed 100 scf per hour provided the leakage is less than or equal to 105 scf per hour.

## CONTAINMENT SYSTEMS

### LIMITING CONDITION FOR OPERATION (Continued)

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#### ACTION: (Continued)

- b. The combined leakage rate to be in accordance with the Primary Containment Leakage Rate Testing Program for all primary containment penetrations and all primary containment isolation valves that are subject to Type B and C tests, except for: main steam line isolation valves\*, valves which are hydrostatically tested, and those valves where an exemption to Appendix J of 10 CFR 50 has been granted, and
- c. The leakage rate to  $\leq 100^{**}$  scf per hour for any main steam isolation valve that exceeds 100\*\* scf per hour, and restore the combined maximum pathway leakage to  $\leq 200$  scf per hour, and
- d. The combined leakage rate for all containment isolation valves in hydrostatically tested lines which penetrate the primary containment to less than or equal to 1 gpm times the total number of such valves,

prior to increasing the reactor coolant system temperature above 200°F.

### SURVEILLANCE REQUIREMENTS

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- 4.6.1.2 The primary containment leakage rates shall be demonstrated to be in accordance with the Primary Containment Leakage Rate Testing Program, or approved exemptions, for the following:
  - a. Type A Test
  - b. Type B and C Tests (including air locks)
  - c. Main Steam Line Isolation Valves
  - d. Hydrostatically tested Containment Isolation Valves

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\* Exemption to Appendix "J" to 10 CFR Part 50.

\*\*During Unit 1 Cycle 19, one main steam isolation valve may exceed 100 scf per hour provided the leakage is less than or equal to 105 scf per hour.





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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 245 TO RENEWED FACILITY OPERATING

LICENSE NO. NPF-39

EXELON GENERATION COMPANY, LLC

LIMERICK GENERATING STATION, UNIT 1

DOCKET NO. 50-352

1.0 INTRODUCTION

By application dated April 1, 2020 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML20092P478), as supplemented by letter dated April 7, 2020 (ADAMS Accession No. ML20098F749), Exelon Generation Company, LLC (the licensee) requested changes to the Technical Specifications (TSs) for the Limerick Generating Station (Limerick), Unit 1. The proposed changes would revise TS 3/4.6.1, "Primary Containment," Limiting Condition for Operation (LCO) 3.6.1.2, to allow for a one-time increase in the allowable leakage rate for one main steam isolation valve (MSIV) from 100 standard cubic feet per hour (scfh) to 105 scfh. The one-time increase would be valid during operating cycle 19 (Cycle 19), which is scheduled to end in April 2022. The licensee requested that this change be approved as an emergency license amendment in accordance with the regulations at Title 10 of the *Code of Federal Regulations* (10 CFR) 50.91(a)(5).

2.0 REGULATORY EVALUATION

2.1 System Description

In its letter dated April 1, 2020, Section 2.0, "Detailed Description," the licensee described the MSIVs and the need for the requested action. The licensee stated:

The four main steam lines, which penetrate the drywell, are automatically isolated by the MSIVs. There are two MSIVs on each steam line, one inside containment (i.e., inboard) and one outside containment (i.e., outboard). The MSIVs are functionally part of the primary containment boundary and leakage through these valves provides a potential leakage path for fission products to bypass secondary containment and enter the environment as a ground level release.

As a result of MSIV local leak rate testing (LLRT) during the current Limerick Unit 1 refueling outage (Li1R18), three of the outboard MSIVs each exceeded the 100 scfh limit for leakage rate through one MSIV in accordance with TS 3.6.1.2.

Two of the MSIVs are being repaired during the current outage. Postponing repair of the third MSIV would provide a dose savings, would reduce the outage duration, and would reduce required resources which would help reduce the impact of COVID-19.

## 2.2 Licensee's Proposed Changes

The existing TS 3.6.1.2 places maximum limits on MSIV leakage in LCO 3.6.1.2.c. When the limits of LCO 3.6.1.2.c are not met, as described in Action c, the licensee must restore any MSIV leakage to less than the limit and restore the combined maximum pathway leakage to  $\leq 200$  scfh prior to increasing the reactor coolant system temperature above 200 degrees Fahrenheit. In its letter dated April 1, 2020, the licensee proposed to allow leakage from one MSIV to exceed the current limit of 100 scfh during Cycle 19. The revised limit for one MSIV during Cycle 19 would be 105 scfh. The change will not apply after Cycle 19. Specifically, the licensee proposed to revise TS LCO 3.6.1.2.c and Action c by adding a new footnote \*\*, as follows (additional text shown underlined):

### TS LCO 3.6.1.2.c

- c. \*Less than or equal to 100\*\* scf per hour through any one main steam isolation valve not to exceed 200 scf per hour for all four main steam lines, when tested at  $P_t$ , 22.0 psig.

### Action c

With:

[...]

- c. The measured leakage rate exceeding 100\*\* scf per hour through any one main steam isolation valve, or exceeding 200 scf per hour for all four main steam lines, or

[...]

restore:

[...]

- c. The leakage rate to  $\leq$ 100\*\* scf per hour for any main steam isolation valve that exceeds 100\*\* scf per hour, and restore the combined maximum pathway leakage to  $\leq 200$  scf per hour, and

[...]

### New footnote \*\*

\*\*During Unit 1 Cycle 19, one main steam isolation valve may exceed 100 scf per hour provided the leakage is less than or equal to 105 scf per hour.

## 2.3 Regulatory Requirements and Guidance

The U.S. Nuclear Regulatory Commission (NRC or the Commission) staff reviewed the licensee's application to determine whether (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 the activities proposed 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 the health and safety of the public. The NRC staff considered the following regulatory requirements, guidance, and licensing and design-basis information during its review of the proposed changes.

The regulations at 10 CFR 50.36 list the requirements for TSs. Paragraph 50.36(a)(1) states, in part, that each applicant for an operating license shall include in the application proposed TSs in accordance with the requirements of 10 CFR 50.36, "Technical specifications." Paragraph 50.36(b) requires that each license authorizing reactor operation include TSs derived from the analyses and evaluation included in the safety analysis report and amendments thereto. Paragraph 50.36(c) requires that the TSs include items in the following categories related to station operation: (1) safety limits, limiting safety system settings, and limiting control settings; (2) LCOs; (3) surveillance requirements; (4) design features; and (5) administrative controls. Paragraph 50.36(c)(2) states, in part, that LCOs are the lowest functional capability or performance levels of equipment required for safe operation of the facility. Paragraph 50.36(c)(2) further states that when an LCO is not met the licensee shall shut down the reactor or follow any remedial action permitted by the TSs until the condition can be met.

Section 50.67, "Accident Source Term," of 10 CFR provides a mechanism for licensed power reactors to replace the traditional source term used in the design-basis accident (DBA) radiological consequence analyses with an acceptable alternative source term (AST). Licensees using the AST are evaluated against the dose criteria specified in 10 CFR 50.67(b)(2):

- 10 CFR 50.67(b)(2)(i) requires that an individual located at any point on the boundary of the exclusion area (EAB) for any 2-hour period following the onset of the postulated fission product release would not receive a radiation dose in excess of 25 roentgen equivalent man (rem) total effective dose equivalent (TEDE).
- 10 CFR 50.67(b)(2)(ii) requires that an individual located at any point on the outer boundary of the low population zone (LPZ) who is exposed to the radioactive cloud resulting from the postulated fission product release would not receive a radiation dose in excess of 25 rem TEDE during the entire period of its passage.
- 10 CFR 50.67(b)(2)(iii) requires that adequate radiation protection be provided to permit access to and occupancy of the control room under accident conditions without personnel receiving radiation exposures in excess of 5 rem TEDE for the duration of the accident.

In addition, Appendix A, "General Design Criteria for Nuclear Power Plants" (GDC) to 10 CFR Part 50, Criterion 19, "Control room," requires that 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 (LOCAs). 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 TEDE, or its equivalent, to any part of the body for the duration of the accident.

Section 50.49, "Environmental qualification of electric equipment important to safety for nuclear power plants," of 10 CFR identifies requirements for establishing a program for qualifying electric equipment that is important to safety as defined in 10 CFR 50.49(b). Section 50.49(e)(1) requires that the time-dependent temperature and pressure at the location of the electric equipment important to safety must be established for the most severe DBA during or following which this equipment is required to remain functional. Section 50.49(b)(2) of 10 CFR requires qualification of nonsafety-related electric equipment whose failure under postulated environmental conditions could prevent satisfactory accomplishment of safety functions specified in subparagraphs 50.49(b)(1)(A)-(C) by safety-related equipment.

Regulatory Guide (RG) 1.183, Revision 0, "Alternative Radiological Source Terms for Evaluating Design Basis Accidents at Nuclear Power Reactors," dated July 2000 ((ADAMS Accession No. ML003716792), provides guidance for meeting requirements in 10 CFR 50.67.

The NRC staff's guidance for review of AST is in Standard Review Plan (SRP) Section 15.0.1, Revision 0, "Radiological Consequence Analyses Using Alternative Source Terms," dated July 2000 (ADAMS Accession No. ML003734190).

The NRC staff's guidance for review of environmental qualification of equipment is in SRP Section 3.11, Revision 3, "Environmental Qualification of Mechanical and Electrical Equipment," of NUREG-0800 (ADAMS Accession No. ML063600397).

The NRC staff's guidance for review of TSs is in Chapter 16, "Technical Specifications," of NUREG-0800, Revision 3, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants," dated March 2010 (ADAMS Accession No. ML100351425).

### 3.0 TECHNICAL EVALUATION

The NRC staff reviewed the proposed change against the requirements discussed in Section 2.3 of this safety evaluation.

#### 3.1 Radiological Consequences from Increased MSIV Leakage

In the current radiological consequence analysis for the DBA LOCA, the MSIVs are postulated to leak at a total design leak rate, through all four main steam lines, of 200 scfh, measured at 22 pounds per square inch gauge (psig), allowing a maximum leakage of 100 scfh per line. The DBA LOCA radiological analysis is described in the Limerick Updated Final Safety Analysis Report, Section 15.6.5 (ADAMS Accession No. ML19037A163), and in NRC-issued Amendment Nos. 185 and 146 for Limerick, Units 1 and 2, respectively (ADAMS Accession No. ML062210214), using the AST methodology in accordance with 10 CFR 50.67 and GDC 19 of Appendix A to 10 CFR Part 50, and the guidance in RG 1.183, Revision 0, and SRP Section 15.0.1.

The proposed one-time change to the TSs MSIV leakage rate limit for one main steam line intended to be used for a single cycle (Cycle 19) does not propose to make permanent changes to any design input parameters and assumptions in the MSIV leakage model evaluated using the Radionuclide Transport and Removal and Dose Estimation (RADTRAD) computer code.

The current calculated post-LOCA doses (ADAMS Accession No. ML061780046) using the RADTRAD code are 4.78 rem TEDE (control room), 0.893 rem TEDE (EAB), and 1.27 rem TEDE (LPZ), with the presence of an MSIV alternate drain pathway to a seismically-qualified condenser. The control room dose (4.78 rem TEDE) is determined by the summation of the filtered primary containment leakage dose (2.517 rem TEDE), MSIV leakage dose (0.550 rem TEDE), emergency core cooling system leakage dose (0.017 rem TEDE), and gamma shine dose (1.70 rem TEDE).

Based on the above information, the NRC staff performed an independent calculation to evaluate the dose consequence from a 5 scfh leakage increase for one line considering the current MSIV leakage control room dose and maximum leakage of 100 scfh per line and found that the corresponding dose increase was determined to be within the dose criterion of 5 rem TEDE in the control room.

### Radiological Consequences Conclusion

The NRC staff reviewed the proposed TSs change as it relates to the DBA LOCA radiological analysis and determined that it meets the dose criteria in 10 CFR 50.67(b)(2) and requirements in GDC 19 in Appendix A to 10 CFR Part 50, because the nominal increase of 5 scfh for one line with no change to the postulated total design MSIV leak rate of 200 scfh was found to be within the control room dose criterion, and because there is no change to the MSIV leakage model evaluated using the RADTRAD code. Additionally, the change to the TSs as it relates to the MSIV leakage model was reviewed for consistency with the guidance in RG 1.183, Revision 0, and SRP Section 15.0.1. For these reasons, the NRC staff determined there is reasonable assurance that (1) GDC 19 to Appendix A to 10 CFR Part 50 will continue to be met, and (2) the dose criteria in 10 CFR 50.67(b)(2) will continue to be met. Therefore, the proposed revision to TS 3.6.1.2 is acceptable.

### 3.2 Environmental Qualification

The NRC staff evaluated whether equipment and components would remain bounded by the existing environmental qualification (EQ) due to the proposed change.

In the license amendment request (LAR), the licensee stated that the EQ program has been evaluated for both chemical-mechanical and radiological impacts from MSIV leakage. According to the licensee, the high energy line break scenario evaluated significantly more moisture and heat deposition on the equipment than the MSIV leakage would impose. Furthermore, the licensee stated that the zone radiation calculations already incorporate a lumped leakage rate of 200 scfh. However, the licensee did not provide an evaluation of the impact of the revised MSIV increased leakage rate on pressure that the environmentally qualified electrical equipment may be exposed to as a result of the proposed change. Therefore, the staff requested that the licensee provide additional information that showed that the pressures remain bounded by the existing EQ for electrical equipment impacted by the MSIV increased leakage rate.

In its letter dated April 7, 2020, the licensee explained that the bounding accident pressure profiles in the main steam tunnel and turbine building are associated with a high energy line break in the steam tunnel. When the increased MSIV leakage is considered, the high energy line break pressure profile in these zones continues to bound the LOCA profile. Therefore, the proposed increase in allowable MSIV leakage would contribute no additional environmental impact to equipment qualified for use in the main steam tunnel or the turbine building. Based on

its review of the LAR and the licensee's response to the staff's request for additional information, the NRC staff finds that the licensee adequately showed that the temperature, pressure, and humidity remain bounded by the existing EQ for electrical equipment as a result of the proposed change.

Also, from the review of the LAR, it was unclear to the staff whether the licensee considered the impact of the proposed change on nonsafety-related equipment whose failure under postulated environmental conditions could prevent satisfactory accomplishments of safety functions by the safety-related equipment. Therefore, the staff requested additional information on how the licensee assessed the impact of the proposed change on nonsafety-related equipment whose failure under postulated environmental conditions could prevent satisfactory accomplishments of safety functions by the safety-related equipment.

In its letter dated April 7, 2020, the licensee stated that since there is no change to EQ design-basis temperatures, pressure, humidity, or radiation values, the proposed change in MSIV leakage has no impact on nonsafety-related equipment whose failure under postulated environmental conditions could prevent satisfactory accomplishment of safety functions by the safety-related equipment. Based on the licensee's response, the staff finds that the licensee has provided reasonable assurance that the proposed change will not adversely affect the potential for nonsafety-related electrical equipment to prevent satisfactory accomplishment of safety functions.

The staff further requested that the licensee confirm whether any components are being added to the EQ equipment list to comply with 10 CFR 50.49 due to the proposed change. In its letter dated April 7, 2020, the licensee stated that there are no components that are being added to the EQ equipment list due to the proposed change in allowable MSIV leakage. Based on its review of the licensee's response, the staff finds that no new electrical equipment needs to be added to the licensee's 10 CFR 50.49 EQ program as a result of the proposed change to the MSIV leakage rate, because the proposed change will not result in an impact to equipment beyond what has previously been analyzed.

### Environmental Qualification Conclusion

Based on its review of the information in the LAR, as well as the additional information provided by the licensee, the NRC staff finds that the proposed changes will have no adverse impact on the Limerick, Unit 1, EQ program or its ability to continue to meet the requirements of 10 CFR 50.49.

### 3.3 Technical Conclusion

Given the discussion above regarding the justification for the proposed change, the NRC staff determined that TS 3.6.1.2, as amended by the proposed change, will continue to meet the requirements of 10 CFR 50.36(b) because it will continue to be based on the evaluation included in the safety analysis report and amendment thereto. Further, based on the discussion above, the NRC staff determined that TS 3.6.1.2, as amended by the proposed change, will continue to meet the requirements of 10 CFR 50.36(c)(2) because the LCO will continue to list the lowest functional capability or performance levels of equipment required for safe operation of the facility and will continue to require the licensee to shut down the reactor or follow any remedial action permitted by the TSs when the LCO is not met. Therefore, the NRC staff determined the proposed change is acceptable.

Additionally, the change to the TSs was reviewed for technical clarity and consistency with customary terminology and format in accordance with SRP Chapter 16.0. The NRC staff determined the change is acceptable given the existing terminology and format of the Limerick, Unit 1, TSs.

#### 4.0 EMERGENCY SITUATION

##### Background

The NRC's regulations in 10 CFR 50.91(a)(5) state that where the NRC finds that an emergency situation exists, in that failure to act in a timely way would result in derating or shutdown of a nuclear power plant, or in prevention of either resumption of operation or of increase in power output up to the plant's licensed power level, it may issue a license amendment involving no significant hazards consideration without prior notice and opportunity for a hearing or for public comment. In such a situation, the NRC will publish a notice of issuance under 10 CFR 2.106, providing for opportunity for a hearing and for public comment after issuance.

As discussed in the licensee's application dated April 1, 2020, the licensee requested that the proposed amendment be processed by the NRC on an emergency basis. The licensee provided the following basis to support the finding that an emergency situation exists:

The Centers for Disease Control has issued recommendations advising "social distancing" or sequestering staff to prevent the spread of the COVID-19 Virus. The nature of the MSIV repair is in conflict with the recommendations in that it requires technicians to be in constant proximity to each other in a hot environment that increases the likelihood of individuals contracting COVID-19 and potentially inducing a rapid spread. Losing resources due to a virus spread would cause a situation where the proper technical knowledge would not be available to satisfactorily complete this work (minimal 14-day isolation and likely to be more than one individual based on having to work in close proximity for the work). Additionally, a valve seat replacement would require pre- and post-heat treatment which could require out of state vendors, which may not be able to travel based on individual state restrictions on travel. This leaves the possibility of not being able to properly repair the valve once disassembled due to the likelihood of having to swap out specialty technicians with little or no notice.

As a result of the current pandemic situation, removing some conservatism from the current TS allowable limit to allow deferral of the repair until the next Unit 1 refueling outage has been determined to involve less risk than performing the repair under the current situation.

##### NRC Staff Conclusion

The NRC staff reviewed the licensee's basis for processing the proposed amendment as an emergency amendment (as discussed above). Limerick, Unit 1 is currently in a planned outage. If the amendment is not approved by the licensee's requested date of April 10, 2020, the unit would be unable to return to power operation because the measured MSIV leakage would exceed the TS allowed limit in the modes of operation needed to return to power (Modes 1, 2, and 3). Therefore, the NRC staff agrees that an emergency situation exists, consistent with the provisions in 10 CFR 50.91(a)(5). Furthermore, the NRC staff determined that: (1) the licensee used its best efforts to make a timely application, (2) the licensee could not reasonably have

avoided the situation, and (3) the licensee has not abused the provisions of 10 CFR 50.91(a)(5). Based on these findings and the determination that the amendment involves no significant hazards consideration as discussed below, the NRC staff has determined that a valid need exists for issuance of the license amendment using the emergency provisions of 10 CFR 50.91(a)(5).

## 5.0 FINAL NO SIGNIFICANT HAZARDS CONSIDERATION

The NRC's regulation in 10 CFR 50.92(c) states that the NRC may make a final determination, under the procedures in 10 CFR 50.91, that a license amendment involves no significant hazards consideration if operation of the facility, in accordance with the amendment, would not: (1) involve a significant increase in the probability or consequences of an accident previously evaluated; or (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of safety.

The licensee's evaluation of no significant hazards consideration is presented below:

1. Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No.

The increase in the leakage rate limit of one MSIV has been assessed against the radiological consequence analysis of the Loss of Coolant Accident (LOCA). Based on the results of the assessment, it has been demonstrated that, with the requested change, the dose consequences of the currently approved LOCA analysis remain bounding and are within the acceptance criteria provided by the NRC for use with the Alternative Source Term (AST) methodology in 10 CFR 50.67.

The proposed change to the MSIV leakage limit does not involve a physical change to any plant structure, system, or component. As a result, no new failure modes of the MSIVs have been introduced.

The proposed change does not affect the normal design or operation of the facility before the accident; rather, it affects leakage limit assumptions that constitute inputs to the evaluation of the consequences. The radiological consequences of the analyzed LOCA have been evaluated using the plant licensing basis for this accident. The evaluation concludes that the currently approved LOCA analysis bounds the proposed Technical Specification change. Adequate margin to the regulatory limits specified in 10 CFR 50.67 for control room and offsite doses is still available.

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

2. Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No.



The change in the MSIV leakage rate limits does not affect the design, functional performance, or normal operation of the facility. Similarly, it does not affect the design or operation of any component in the facility such that new equipment failure modes are created. This is supported by operating experience at other Exelon sites that have increased their MSIV leakage limits. As such, the proposed change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

In addition, the proposed change to TS 3.6.1.2 does not alter the protection system design, create new failure modes, or change any modes of operation. The proposed change does not involve a physical alteration of the plant; and no new or different kind of equipment will be installed. Consequently, there are no new initiators that could result in a new or different kind of accident.

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

3. Does the proposed change involve a significant reduction in a margin of safety?

Response: No.

This proposed license amendment involves changes in the MSIV leakage rate limits. The MSIV leakage rate limits are used in the analysis of the LOCA radiological consequences. The analysis has been performed using conservative methodologies. Safety margins and analytical conservatisms have been evaluated and have been found to adequately address the effects of the proposed MSIV leakage limits. The analyzed LOCA event has been carefully selected and margin has been retained to ensure that the analysis adequately bounds the postulated event scenario. The dose consequences of this limiting event are within the acceptance criteria presented in 10 CFR 50.67 for control room operator and offsite doses. The margin of safety is that provided by meeting the applicable regulatory limits.

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

Based on the above evaluation, the NRC staff concludes that the three standards of 10 CFR 50.92(c) are satisfied. Therefore, the NRC staff has made a final determination that no significant hazards consideration is involved for the proposed amendment and that the amendment should be issued as allowed by the criteria contained in 10 CFR 50.91.

## 6.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Pennsylvania State official was notified of the proposed issuance of the amendment on April 6, 2020. The State official had the following comment via email:

The Pennsylvania Department of Environmental Protection, Bureau of Radiation Protection (BRP) has reviewed Limerick Generating Station's Emergency License Amendment request dated April 1, 2020. Additional estimates of potential radiation exposure, personnel, and outage duration reductions incurred were received from Limerick for BRP's review. Based on review of the nuclear safety aspects of the request, potential radiation exposure, personnel, and outage duration reductions in light of the need to reduce vulnerability and impact of COVID-19 to plant personnel and public safety, the PA BRP finds the request acceptable.

The NRC staff considered this comment in its review of the proposed amendment.

## 7.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendment involves 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 made a finding that the amendment involves no significant hazards consideration. Accordingly, the amendment meets 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 amendment.

## 8.0 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 Contributors: R. Clement  
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Date: April 9, 2020

SUBJECT: LIMERICK GENERATING STATION, UNIT 1 – ISSUANCE OF AMENDMENT NO. 245 REGARDING TECHNICAL SPECIFICATIONS CHANGE TO ALLOW A ONE-TIME INCREASE IN MAIN STEAM ISOLATION VALVE ALLOWABLE LEAKAGE RATE (EPID L-2020-LLA-0064) (**EMERGENCY CIRCUMSTANCES**) DATED APRIL 9, 2020

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**\*by e-mail**

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