



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

May 11, 2011

Mr. Michael J. Pacilio  
President and Chief Nuclear Officer  
Exelon Nuclear  
4300 Winfield Road  
Warrenville, IL 60555

SUBJECT: LIMERICK GENERATING STATION, UNITS 1 AND 2 - ISSUANCE OF  
AMENDMENT RE: HIGH PRESSURE COOLANT INJECTION EQUIPMENT  
ROOM DELTA-TEMPERATURE HIGH ISOLATION TRIP SETPOINT AND  
ALLOWABLE VALUE CHANGES (TAC NOS. ME4171 AND ME4172)

Dear Mr. Pacilio:

The Commission has issued the enclosed Amendment No. 202 to Facility Operating License No. NPF-39 and Amendment No. 164 to Facility Operating License No. NPF-85, for Limerick Generating Station (LGS), Units 1 and 2. These amendments consist of changes to the Technical Specifications (TSs) in response to your application dated June 30, 2010 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML101810434), supplemented by letter dated December 15, 2010 (ADAMS Accession No. ML103500190).

The amendments consist of changes to the TSs of each unit regarding the High Pressure Coolant Injection (HPCI) Equipment Room Delta-Temperature High Trip Setpoint and Allowable Value listed in Table 3.3.2-2, Isolation Actuation Instrumentation Setpoints, Item 4e. The changes were proposed as a result of a revised licensee analysis which indicated that the setpoints needed to be lowered to provide an isolation signal for the HPCI steam supply lines, appropriate for all postulated conditions, in the event of a 25 gallon-per-minute HPCI steam line leak.

A copy of the 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 cursive script that reads "Peter Bamford".

Peter Bamford, Project Manager  
Plant Licensing Branch I-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket Nos. 50-352 and 50-353

Enclosures:

1. Amendment No. 202 to License No. NPF-39
2. Amendment No. 164 to License No. NPF-85
3. Safety Evaluation

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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. 202  
License No. NPF-39

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Exelon Generation Company, LLC (the licensee), dated June 30, 2010, supplemented by letter dated December 15, 2010, 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-39 is hereby amended to read as follows:

(2) Technical Specifications and Environmental Plan

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No.202, 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 60 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Harold K. Chernoff, Chief  
Plant Licensing Branch I-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical  
Specifications and Facility Operating License

Date of Issuance: May 11, 2011

ATTACHMENT TO LICENSE AMENDMENT NO. 202

FACILITY OPERATING LICENSE NO. NPF-39

DOCKET NO. 50-352

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

Remove

Insert

Page 3

Page 3

Replace the following page of the Appendix A Technical Specifications with the attached revised page. The revised page is identified by amendment number and contains marginal lines indicating the areas of change.

Remove

Insert

3/4 3-19

3/4 3-19

- (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 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 license shall be completed as specified. Attachment 1 is hereby incorporated into this 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. 202, are hereby incorporated into this license. Exelon Generation Company shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

TABLE 3.3.2-2 (Continued)

ISOLATION ACTUATION INSTRUMENTATION SETPOINTS

<u>TRIP FUNCTION</u>	<u>TRIP SETPOINT</u>	<u>ALLOWABLE VALUE</u>
<u>3. REACTOR WATER CLEANUP SYSTEM ISOLATION</u>		
a. RWCS $\Delta$ Flow - High	$\leq 54.9$ gpm	$\leq 65.2$ gpm
b. RWCS Area Temperature - High	$\leq 155^{\circ}\text{F}$ or $\leq 132^{\circ}\text{F}^{**}$	$\leq 160^{\circ}\text{F}$ or $\leq 137^{\circ}\text{F}^{**}$
c. RWCS Area Ventilation $\Delta$ Temperature - High	$\leq 52^{\circ}\text{F}$ or $\leq 32^{\circ}\text{F}^{**}$	$\leq 60^{\circ}\text{F}$ or $\leq 40^{\circ}\text{F}^{**}$
d. SLCS Initiation	N.A.	N.A.
e. Reactor Vessel Water Level - Low, Low, - Level 2	$\geq -38$ inches *	$\geq -45$ inches
f. Manual Initiation	N.A.	N.A.
<u>4. HIGH PRESSURE COOLANT INJECTION SYSTEM ISOLATION</u>		
a. HPCI Steam Line $\Delta$ Pressure - High	$\leq 974$ " H <sub>2</sub> O	$\leq 984$ " H <sub>2</sub> O
b. HPCI Steam Supply Pressure - Low	$\geq 100$ psig	$\geq 90$ psig
c. HPCI Turbine Exhaust Diaphragm Pressure - High	$\leq 10$ psig	$\leq 20$ psig
d. HPCI Equipment Room Temperature - High	225°F	$\geq 218^{\circ}\text{F}$ , $\leq 247^{\circ}\text{F}$
e. HPCI Equipment Room $\Delta$ Temperature - High	$\leq 104^{\circ}\text{F}$	$\leq 108.5^{\circ}\text{F}$
f. HPCI Pipe Routing Area Temperature - High	175°F	$\geq 165^{\circ}\text{F}$ , $\leq 200^{\circ}\text{F}$
g. Manual Initiation	N.A.	N.A.
h. HPCI Steam Line $\Delta$ Pressure - Timer	$3 \leq \tau \leq 12.5$ seconds	$2.5 \leq \tau \leq 13$ seconds



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

EXELON GENERATION COMPANY, LLC

DOCKET NO. 50-353

LIMERICK GENERATING STATION, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 164  
License No. NPF-85

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Exelon Generation Company, LLC (the licensee), dated June 30, 2010, supplemented by letter dated December 15, 2010, 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-85 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.164, 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 60 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Harold K. Chernoff, Chief  
Plant Licensing Branch I-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical  
Specifications and Facility Operating License

Date of Issuance: May 11, 2011



ATTACHMENT TO LICENSE AMENDMENT NO. 164

FACILITY OPERATING LICENSE NO. NPF-85

DOCKET NO. 50-353

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

Remove  
Page 3

Insert  
Page 3

Replace the following page of the Appendix A Technical Specifications with the attached revised page. The revised page is identified by amendment number and contains marginal lines indicating the areas of change.

Remove

3/4 3-19

Insert

3/4 3-19

- (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 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 of 3515 megawatts thermal (100 percent rated power) in accordance with the conditions specified herein.

(2) Technical Specifications

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 164, 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) Fire Protection (Section 9.5, SSER-2, -4)\*

Exelon Generation Company 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 NRC Safety Evaluation Report dated August 1983 through Supplement 9, dated August 1989, and Safety Evaluation dated November 20, 1995, 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.

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

TABLE 3.3.2-2 (Continued)

ISOLATION ACTUATION INSTRUMENTATION SETPOINTS

<u>TRIP FUNCTION</u>	<u>TRIP SETPOINT</u>	<u>ALLOWABLE VALUE</u>
<u>3. REACTOR WATER CLEANUP SYSTEM ISOLATION</u>		
a. RWCS $\Delta$ Flow - High	$\leq 54.9$ gpm	$\leq 65.2$ gpm
b. RWCS Area Temperature - High	$\leq 155^{\circ}\text{F}$ or $\leq 132^{\circ}\text{F}^{**}$	$\leq 160^{\circ}\text{F}$ or $\leq 137^{\circ}\text{F}^{**}$
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d. SLCS Initiation	N.A.	N.A.
e. Reactor Vessel Water Level - Low, Low, - Level 2	$\geq -38$ inches *	$\geq -45$ inches
f. Manual Initiation	N.A.	N.A.
<u>4. HIGH PRESSURE COOLANT INJECTION SYSTEM ISOLATION</u>		
a. HPCI Steam Line $\Delta$ Pressure - High	$\leq 974$ " H <sub>2</sub> O	$\leq 984$ " H <sub>2</sub> O
b. HPCI Steam Supply Pressure - Low	$\geq 100$ psig	$\geq 90$ psig
c. HPCI Turbine Exhaust Diaphragm Pressure - High	$\leq 10$ psig	$\leq 20$ psig
d. HPCI Equipment Room Temperature - High	225°F	$\geq 218^{\circ}\text{F}$ , $\leq 247^{\circ}\text{F}$
e. HPCI Equipment Room $\Delta$ Temperature - High	$\leq 104^{\circ}\text{F}$	$\leq 108.5^{\circ}\text{F}$
f. HPCI Pipe Routing Area Temperature - High	175°F	$\geq 165^{\circ}\text{F}$ , $\leq 200^{\circ}\text{F}$
g. Manual Initiation	N.A.	N.A.
h. HPCI Steam Line $\Delta$ Pressure - Timer	$3 \leq \tau \leq 12.5$ seconds	$2.5 \leq \tau \leq 13$ seconds



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 202 TO FACILITY OPERATING LICENSE NO. NPF-39  
AND AMENDMENT NO. 164 TO FACILITY OPERATING LICENSE NO. NPF-85  
EXELON GENERATION COMPANY, LLC  
LIMERICK GENERATING STATION, UNITS 1 AND 2  
DOCKET NOS. 50-352 AND 50-353

1.0 INTRODUCTION

By application dated June 30, 2010 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML101810434), supplemented by letter dated December 15, 2010 (ADAMS Accession No. ML103500190), Exelon Generation Company, LLC (Exelon, the licensee) requested changes to the Technical Specifications (TSs) for Limerick Generating Station (LGS), Units 1 and 2. The supplement dated December 15, 2010, provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the Nuclear Regulatory Commission (NRC) staff's original proposed no significant hazards consideration determination as published in the *Federal Register* on August 24, 2010 (75 FR 52041).

The amendments consist of changes to the TSs of each unit regarding the High Pressure Coolant Injection (HPCI) Equipment Room Delta-Temperature (DT) High Trip Setpoint and Allowable Value (AV) listed in Table 3.3.2-2, Isolation Actuation Instrumentation Setpoints, Item 4e. The changes were proposed as a result of a revised licensee analysis which indicated that the setpoints needed to be lowered to provide an isolation signal for the HPCI steam supply lines, appropriate for all postulated conditions, in the event of a 25 gallon-per-minute (GPM) HPCI steam line leak.

2.0 REGULATORY EVALUATION

The regulatory requirements and guidance which the NRC staff considered in its review of the applications are as follows:

Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50 establishes the fundamental regulatory requirements with respect to the domestic licensing of nuclear production and utilization facilities. Specifically, Appendix A, "General Design Criteria (GDC) for Nuclear Power Plants," to 10 CFR Part 50 provides, in part, the necessary design fabrication, construction, testing, and performance requirements for structures, systems, and components important to safety. As described in the facility Updated Final Safety Analysis Report (UFSAR), Section 3.4, LGS conforms to the GDC listed below:

Enclosure

GDC-13, "Instrumentation and Control", requires, in part, that instrumentation be provided to monitor variables and systems, and that controls are provided to maintain these variables and systems within prescribed operating ranges.

GDC-20, "Protection system functions," requires the protection system be designed: (1) to initiate automatically the operation of appropriate systems including the reactivity control systems, to assure that specified acceptable fuel design limits are not exceeded as a result of anticipated operational occurrences; and (2) to sense accident conditions and to initiate the operation of systems and components important to safety.

Regulatory Guide (RG) 1.105, "Setpoints for Safety-Related Instrumentation," describes a method acceptable to the NRC staff for complying with the NRC regulations for ensuring that setpoints for safety-related instrumentation are initially within and remain within the TS limits. The licensee's application dated June 30, 2010, states that the LGS design complies with the intent of RG 1.105, Revision 3. In addition, the LGS UFSAR, Section 1.8, states that LGS conforms to RG 1.105, Revision 1, dated November 1976.

Regulatory Issue Summary (RIS) 2006-17, "NRC Staff Position on the Requirements of 10 CFR 50.36 Regarding Limiting Safety System Settings During Periodic Testing and Calibration of Instrument Channels," dated August 24, 2006, presents an approach found acceptable to the NRC staff for addressing issues that could occur during testing and calibration of Limiting Safety System Settings (LSSS), and which may have an adverse effect on equipment operability. While this license amendment request (LAR) did not involve an LSSS, nor is conformance with RIS 2006-17 an NRC requirement, the RIS was used by the NRC staff to inform and guide the LAR assessment.

### 3.0 TECHNICAL EVALUATION

#### 3.1 Background

By letter dated January 20, 1995, (ADAMS Accession No. ML011560074), the NRC staff approved a change for LGS, Units 1 and 2, to the HPCI Equipment Room DT High Trip Setpoint and AV listed in Table 3.3.2-2, Isolation Actuation Instrumentation Setpoints, Item 4e. These amendments raised the TS trip setpoints and AVs in accordance with computations performed by the licensee. At the time, the revised values were expected to isolate the HPCI steam supply lines on HPCI Equipment Room DT that corresponds to a 25 GPM steam leak. Raising the setpoints was intended to reduce the possibility of a premature isolation of the HPCI steam supply during postulated post-loss-of-coolant accident (LOCA) conditions. However, a recent LGS review and revision of the calculation showed that the original engineering evaluation did not properly account for room ventilation factors and that the current setpoints were non-conservative. Based on this review, LGS initiated a site corrective action report and submitted a report to the NRC pursuant to 10 CFR 50.73 (ADAMS Accession No. ML092990404). The licensee also lowered the field setpoints to a conservative value, and subsequently submitted this LAR to correct the non-conservative TS.

The current LAR proposes the lowering of the HPCI Equipment Room DT High Trip Setpoint and AV to account for the more accurate analysis of the possible range of DTs which may occur in the specified environmental conditions. From the perspective of the TSs, this change is in the conservative direction.

### 3.2 Proposed Technical Specification Changes

The trip setpoint for LGS, Units 1 and 2, TS 3.3.2-2 item 4e, is proposed to change from the old value of 126 degrees Fahrenheit (°F) to the new value of 104°F. The AV is proposed to change from the old value of 130.5°F to the new value of 108.5°F.

### 3.3 Setpoint Changes

A summary of LGS Loop Uncertainty (LU) calculation TE-055-1N028B was provided in Attachment 1 of the LAR. The NRC staff requested a copy of the full calculation through a request for additional information (RAI). In the RAI, the NRC staff also requested that the licensee relate the description of the "Leave Alone Zone" (LAZ) tolerances in terms similar to those in RIS 2006-17. In its response dated December 15, 2010, the licensee stated that the LAZ is used in the same manner as the RIS 2006-17 equivalent of the "as-left" tolerance. The licensee also stated that the acceptable limit of the "as-found" tolerance is the LAZ, and hence is the same as the "as-left" tolerance. Further, the licensee stated in the LAR, Attachment 1, "[t]he LAZ for this instrument calibration is +0/-1.0 degree F based on a review of the quarterly and two-year surveillance tests."

The NRC staff reviewed TE-055-1N028B and found that the tight tolerance defined as the LAZ is supported by the high accuracy characteristic of the installed instrumentation and the calibration and test instrumentation used for the channel. Further, the low drift characteristic supports the licensee's decision to not use a wider tolerance band similar to the "as-found" tolerance defined in RIS 2006-17.

The bases for the LU calculation identified in Attachment 1 of the LAR includes the use of General Electric (GE)-Hitachi instrument setpoint methodology, as described in NEDC-31336P-A, Class 3, "General Electric Instrument Setpoint Methodology," dated September 1996 (ADAMS Accession No. ML072950103 (proprietary)). This methodology was approved by the NRC staff, with conditions, by letter dated November 6, 1995 (ADAMS Legacy Accession No. 9511140068 (proprietary)).

Based on the above evaluation, the NRC staff finds that the proposed AV of 108.5°F and trip setpoint of 104°F are acceptable because there is a high confidence that total loop uncertainty provides a bounding estimate of the total of all loop uncertainty errors. Further, the AV has been determined using the guidance of the GE-Hitachi setpoint methodology previously approved by the staff. NEDC-31336P-A includes the NRC staff's safety evaluation in the approved version of the document and hence the NRC's conditions for the application of the methodology are included in NEDC-31336P-A directly. The proposed changes are further supported by the low incidence of excessive drift as evidenced in the surveillance data supplied by the licensee. The NRC staff concludes that these factors will ensure that the HPCI Equipment Room DT High Trip Setpoint is initially within, and remains within, the required limits, as specified in RG 1.105, Revision 1.

### 3.4 Instrument Channel Operability

The NRC staff reviewed the licensee's description of actions regarding instrument channel operability checks and determined that clarification was needed regarding what administrative actions are to be taken if the "as-found" value were to be found at a value greater than the "as-found" tolerance, but less than the AV following an attempt to reset and retest. The NRC staff

requested that the licensee clarify its programmatic actions via an RAI. In response, dated December 15, 2010, the licensee clarified that following an attempt to reset and retest the setpoint, instrument channels that fail are automatically entered into the corrective action program (CAP) while items that pass the retest are recorded as "fail/pass" and then reviewed for repeat failures and potential inclusion in the CAP. The NRC staff concludes that the licensee's proposed administrative controls, documentation, and performance evaluation for the parameters described in this LAR meet the intent of the instrument channel operability guidance contained in RIS 2006-17. Further, the NRC staff concludes that, for the parameters described in the LAR, the instrument channel operability checks described meet the quality assurance requirements of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action."

### 3.5 Analytical Limit

The licensee used the CFLUD computer program to perform the room temperature calculations supporting this LAR. This is the same program that was used in the 1995 amendment previously approved by the NRC staff. The analysis supporting the current LAR utilized a more-specific modeling of the ventilation systems, but used the same computational methodology as was used in the 1995 amendment. The CFLUD computer code is validated and verified under the Bechtel software quality assurance program and is maintained under the licensee's software quality assurance program. Based on the previous amendment review and the software quality assurance controls described, the use of the CFLUD code is acceptable to the NRC staff for this application. With a lowered setpoint, isolation in the event of an HPCI steam line leak will occur sooner, resulting in a lower discharge of reactor coolant, and a lower dose consequence for that postulated condition. The results of the computations provided in the LAR are reasonable, given the modeling assumptions provided, and will result in more conservative setpoints and AVs. In the application, the licensee states that the revised setpoints still provide margin such that a premature isolation under post-LOCA environmental conditions will not occur. Since the DT has been specifically modeled in the calculation, this provides adequate assurance that the lowering of the setpoint will not have the unintended consequence of a premature isolation. Based on these considerations, the NRC staff has reasonable assurance that the new analytical limits provide a proper and conservative basis for the new TS setpoint and AV.

### 3.6 Conclusion

Based on its review of the licensee's submittal and the licensee's responses to the NRC staff's RAI, the NRC staff has determined that the licensee has made provisions for ensuring that the HPCI Equipment Room High DT will detect and actuate isolation for a 25 GPM steam leak over the anticipated range of conditions. Therefore, the NRC staff has reasonable assurance that the requirement of GDC-13, regarding the need for instrumentation to be provided for maintaining variables and systems within prescribed operating ranges, has been met. In addition, on the same basis, the NRC staff has reasonable assurance that GDC-20 has been met. Because the licensee followed an NRC-approved GE-Hitachi setpoint methodology, supported the "as-found" tolerance with historical surveillance data, and has provided reasonable assurance that conditions adverse to quality will be appropriately addressed, the NRC staff concludes that the LGS UFSAR requirement to meet RG 1.105, Revision 1, ensuring that instrument setpoints in systems important to safety initially are within, and remain within, the specified limits, will be met. Therefore, the NRC staff finds that the licensee's proposed changes are acceptable.

#### 4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Pennsylvania State official was notified of the proposed issuance of the amendment. 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. 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 published in the *Federal Register* on August 24, 2010 (75 FR 52041). 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) 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: S. Wyman  
P. Bamford

Date: May 11, 2011



May 11, 2011

Mr. Michael J. Pacilio  
President and Chief Nuclear Officer  
Exelon Nuclear  
4300 Winfield Road  
Warrenville, IL 60555

SUBJECT: LIMERICK GENERATING STATION, UNITS 1 AND 2 - ISSUANCE OF  
AMENDMENT RE: HIGH PRESSURE COOLANT INJECTION EQUIPMENT  
ROOM DELTA-TEMPERATURE HIGH ISOLATION TRIP SETPOINT AND  
ALLOWABLE VALUE CHANGES (TAC NOS. ME4171 AND ME4172)

Dear Mr. Pacilio:

The Commission has issued the enclosed Amendment No. 202 to Facility Operating License No. NPF-39 and Amendment No. 164 to Facility Operating License No. NPF-85, for Limerick Generating Station (LGS), Units 1 and 2. These amendments consist of changes to the Technical Specifications (TSs) in response to your application dated June 30, 2010 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML101810434), supplemented by letter dated December 15, 2010 (ADAMS Accession No. ML103500190).

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

Sincerely,  
/RA/  
Peter Bamford, Project Manager  
Plant Licensing Branch I-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket Nos. 50-352 and 50-353

Enclosures:

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ADAMS Accession NO.: ML111101429

\*via memo

\*\*via email

	LPLI-2/PM	LPLI-2/LA **	EICB/BC	O&G NLO	LPLI-2/BC
Name	PBamford	ABaxter	GWilson*	MWright	HChernoff
Date	4/21/2011	4/27/2011	03/04/2011	5/3/11	5/11/2011

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