



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

December 19, 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
AMENDMENTS RE: REVISE ACTIONS FOR REACTOR COOLANT SYSTEM
LEAKAGE INSTRUMENTATION (TAC NOS. ME5993 AND ME5994)

Dear Mr. Pacilio:

The U.S. Nuclear Regulatory Commission (NRC or the Commission) has issued the enclosed Amendment No.205 to Facility Operating License No. NPF-39 and Amendment No.167 to Facility Operating License No. NPF-85 for Limerick Generating Station (LGS), Units 1 and 2, respectively. The amendments are in response to your application dated April 6, 2011.

The amendments modify the actions to be taken when the containment atmosphere gaseous radioactivity monitoring system and the primary containment pressure and temperature monitoring system are the only operable reactor coolant leakage detection monitoring systems. The modified actions require additional, more frequent monitoring of other indications of Reactor Coolant System (RCS) leakage and provide appropriate time to restore another monitoring system to operable status. This change is consistent with the U.S. Nuclear Regulatory Commission-approved safety evaluation on Technical Specification Task Force (TSTF) Traveler, TSTF 514-A, Revision 3, "Revised [Boiling Water Reactor] BWR Operability Requirements and Actions for RCS Leakage Instrumentation." The availability of this TS improvement was announced in the *Federal Register* on December 17, 2010 (75 FR 79048).

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. 205 to License No. NPF-39
2. Amendment No. 167 to License No. NPF-85
3. Safety Evaluation

cc w/enclosures: Distribution via 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. 205
License No. NPF-39

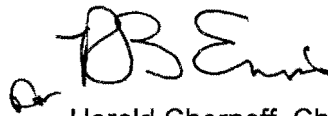
1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Exelon Generation Company, LLC (the licensee), dated April 6, 2011, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules 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

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 205, 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

A handwritten signature in black ink, appearing to read "H. Chernoff", is written over a faint circular stamp.

Harold 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: December 19, 2011

ATTACHMENT TO LICENSE AMENDMENT NO. 205

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 4-8a

3/4 4-8a

- (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. 205, are hereby incorporated into this license. Exelon Generation Company shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

REACTOR COOLANT SYSTEM

ACTIONS (Continued)

- F. With the drywell floor drain sump monitoring system inoperable AND the drywell unit coolers condensate flow rate monitoring system inoperable analyze grab samples of the primary containment atmosphere once per 12 hours, AND monitor Reactor Coolant System leakage by administrative means once per 12 hours AND restore either the drywell floor drain sump monitoring system to OPERABLE status within 7 days OR restore the drywell unit coolers condensate flow rate monitoring system to OPERABLE status within 7 days.
- G. With any other two or more leak detection systems inoperable other than ACTIONS E and F above OR with required Actions and associated Completion Time of ACTIONS A, B, C, D, E or F not met, be in HOT SHUTDOWN within 12 hours AND in COLD SHUTDOWN within the next 24 hours.

SURVEILLANCE REQUIREMENTS

4.4.3.1 The reactor coolant system leakage detection systems shall be demonstrated operable by:

- a. Perform a CHANNEL CHECK of the primary containment atmosphere gaseous radioactivity monitoring system in accordance with the Surveillance Frequency Control Program.
- b. Perform a CHANNEL FUNCTIONAL TEST of required leakage detection instrumentation in accordance with the Surveillance Frequency Control Program. This does not apply to containment pressure and temperature monitoring system.
- c. Perform a CHANNEL CALIBRATION of required leakage detection instrumentation in accordance with the Surveillance Frequency Control Program. This does not apply to containment pressure and temperature monitoring system.
- d. Monitor primary containment pressures AND primary containment temperature in accordance with the Surveillance Frequency Control Program.



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

EXELON GENERATION COMPANY, LLC

DOCKET NO. 50-353

LIMERICK GENERATING STATION, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 167
License No. NPF-85

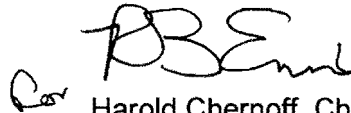
1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Exelon Generation Company, LLC (the licensee), dated April 6, 2011, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules 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 paragraphs 2.C.(1) and 2.C.(2) of Facility Operating License No. NPF-85 are hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 167, 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 issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

A handwritten signature in black ink, appearing to read "H. Chernoff", is written over a faint circular stamp.

Harold 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: December 19, 2011

ATTACHMENT TO LICENSE AMENDMENT NO. 167

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

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 4-8a

3/4 4-8a

- (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. 167, 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.

*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.

REACTOR COOLANT SYSTEM

ACTIONS (Continued)

- F. With the drywell floor drain sump monitoring system inoperable AND the drywell unit coolers condensate flow rate monitoring system inoperable analyze grab samples of the primary containment atmosphere once per 12 hours, AND monitor Reactor Coolant System leakage by administrative means once per 12 hours AND restore either the drywell floor drain sump monitoring system to OPERABLE status within 7 days OR restore the drywell unit coolers condensate flow rate monitoring system to OPERABLE status within 7 days.
- G. With any other two or more leak detection systems inoperable other than ACTIONS E and F above OR with required Actions and associated Completion Time of ACTIONS A, B, C, D, E or F not met, be in HOT SHUTDOWN within 12 hours AND in COLD SHUTDOWN within the next 24 hours.

SURVEILLANCE REQUIREMENTS

4.4.3.1 The reactor coolant system leakage detection systems shall be demonstrated operable by:

- a. Perform a CHANNEL CHECK of the primary containment atmosphere gaseous radioactivity monitoring system in accordance with the Surveillance Frequency Control Program.
- b. Perform a CHANNEL FUNCTIONAL TEST of required leakage detection instrumentation in accordance with the Surveillance Frequency Control Program. This does not apply to containment pressure and temperature monitoring system.
- c. Perform a CHANNEL CALIBRATION of required leakage detection instrumentation in accordance with the Surveillance Frequency Control Program. This does not apply to containment pressure and temperature monitoring system.
- d. Monitor primary containment pressure AND primary containment temperature in accordance with the Surveillance Frequency Control Program.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 205 TO FACILITY OPERATING LICENSE NO. NPF-39
AND AMENDMENT NO. 167 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 April 6, 2011 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML110970066), Exelon Generation Company, LLC (Exelon, the licensee) submitted a license amendment request (LAR) proposing to revise the Actions associated with Technical Specification (TS) 3.4.3.1, "Leakage Detection Systems," for Limerick Generating Station (LGS), Units 1 and 2. In the application, the licensee stated that the LAR is consistent with U.S. Nuclear Regulatory Commission (NRC)-approved Revision 3 to Technical Specification Task Force (TSTF) Standard Technical Specification (STS) Change Traveler TSTF-514, "Revise BWR [Boiling Water Reactor] Operability Requirements and Actions for RCS [Reactor Coolant System] Leakage Instrumentation" (ADAMS Accession No. ML103280389). Both of the LGS units have TSs which differ from the improved STSs that are the basis for the changes described in TSTF-514. Thus, there are some plant-specific differences in the LAR, as compared to those described in TSTF-514.

In the LAR, the licensee proposes to add a new Action F to TS 3.4.3.1 that is applicable when the primary containment atmosphere gaseous radioactivity monitoring system and the primary containment pressure and temperature monitoring system are the only operable leakage detection systems. The corresponding change described in TSTF-514 adds a new Required Action that is applicable when the primary containment atmosphere gaseous radiation monitor is the only operable RCS leakage detection monitor. In both the LAR and in TSTF-514, this new TS Condition is designed to establish Required Actions for operation during conditions where there is a reduced diversity of leakage monitoring devices operable. The availability of the TSTF-514, TS improvement, was announced in the *Federal Register* on December 17, 2010 (75 FR 79048, ADAMS Accession No. ML102300733), as part of the consolidated line item improvement process (CLIIP). Since the LGS application differs from TSTF-514, as described above, it was not processed as a CLIIP amendment.

2.0 REGULATORY EVALUATION

The NRC's regulatory requirements related to the content of the TS are contained in Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.36. Paragraph (c)(2)(i) of 10 CFR 50.36

Enclosure

states that limiting conditions for operation (LCOs) are the lowest functional capability or performance levels of equipment required for safe operation of the facility. Paragraph (c)(2)(ii) of 10 CFR 50.36 lists four criteria for determining whether particular items are required to be included in the TS LCOs. Criterion 1 applies to installed instrumentation that is used to detect, and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary (RCPB). As described in the *Federal Register* notice associated with this regulation (60 FR 36953, July 16, 1995), the scope of TS includes two general classes of technical matters: (1) those related to prevention of accidents; and (2) those related to mitigation of the consequences of accidents. Criterion 1 addresses systems and process variables that alert the operator to a situation when accident initiation is more likely, and supports the first of these two general classes of technical matters which are included in TS. As specified in Paragraph (c)(2)(i) of 10 CFR 50.36, when an LCO of a nuclear reactor is not met, the licensee shall shut down the reactor or follow any remedial action permitted by the TSs until the condition can be met.

The regulation at 10 CFR Part 50, Appendix A, General Design Criterion (GDC)-30, "Quality of Reactor Coolant Pressure Boundary," requires means for detecting and, to the extent practical, identifying the location of the source of RCS leakage. Regulatory Guide (RG) 1.45, Revision 0, "Reactor Coolant Pressure Boundary Leakage Detection Systems," May 1973, describes acceptable methods of implementing the GDC-30 requirements with regard to the selection of leakage detection systems for the RCPB.

RG 1.45, Revision 0, Regulatory Position C.2 states:

Leakage to the primary reactor containment from unidentified sources should be collected and the flow rate monitored with an accuracy of one gallon per minute (gpm) or better.

RG 1.45, Revision 0, Regulatory Position C.3 states:

At least three separate detection methods should be employed and two of these methods should be (1) sump level and flow monitoring and (2) airborne particulate radioactivity monitoring. The third method may be selected from the following: a. monitoring of condensate flow rate from air coolers, [or] b. monitoring of airborne gaseous radioactivity. Humidity, temperature, or pressure monitoring of the containment atmosphere should be considered as alarms or indirect indication of leakage to the containment.

RG 1.45, Revision 0, Regulatory Position C.5 states:

The sensitivity and response time of each leakage detection system in regulatory position 3. above employed for unidentified leakage should be adequate to detect a leakage rate, or its equivalent, of one gpm in less than one hour.

RG 1.45, Revision 0, states:

In analyzing the sensitivity of leak detection systems using airborne particulate or gaseous radioactivity, a realistic primary coolant radioactivity concentration

assumption should be used. The expected values used in the plant environmental report would be acceptable.

The appropriate sensitivity of a plant's primary containment/drywell atmosphere gaseous radioactivity monitors is dependent on the design assumptions and the plant-specific licensing basis as described in the plant's updated final safety analysis report (UFSAR).

RG 1.45, Revision 1, "Guidance on Monitoring and Responding to Reactor Coolant System Leakage," was issued in May 2008. RG 1.45, Revision 1, describes methods for implementing the GDC-30 requirements that are different from those in RG 1.45, Revision 0, and was developed and issued to support new reactor licensing. Revision 1 allows that having two TS leakage detection methods capable of detecting a one gpm leak within one hour provides adequate leakage detection capability from a safety perspective. It recommends that other potential indicators (including the gaseous radiation monitors) be maintained even though they may not have the same detection capability. These indicators, in effect, provide additional defense-in-depth.

LGS UFSAR Section 1.2.2.1, "General Design Criteria," states:

The LGS design conforms to the requirements given in 10 CFR 50, Appendix A, "General Design Criteria for Nuclear Power Plants."

Specifically, LGS UFSAR Section 3.1 provides a discussion of LGS's design conformance to GDC-30 of 10 CFR 50, Appendix A. LGS's design evaluation states:

By using conservative design practices and detailed quality control procedures, the pressure-retaining components of the RCPB are designed and fabricated to retain their integrity during normal and postulated accident conditions. Accordingly, components that comprise the RCPB are designed, fabricated, erected, and tested in accordance with recognized industry codes and standards listed in Chapter 5. Further product and process quality planning is provided as discussed in the evaluation of GDC[-]1 to ensure conformance with the applicable codes and standards and to retain appropriate documented evidence verifying compliance. Because the subject matter of this criterion deals with the aspects of the RCPB, further discussion of this subject appears in the response to GDC[-]14.

Means are provided for detecting reactor coolant leakage. The leak detection system consists of sensors and instruments to detect, annunciate, and, in some cases, isolate the RCPB from potential hazardous leaks before predetermined limits are exceeded. As described in Section 5.2.5, small leaks are detected by temperature and pressure changes, increased frequency of sump pump operation, and measurement of airborne radioactivity in the primary containment atmosphere. In addition to these means of detection, large leaks are detected by flow rates in process lines and changes in reactor water level. The allowable leakage rates are based on the predicted and experimentally determined behavior of cracks in pipes, the ability to make up coolant system leakage, the normally expected background leakage due to equipment design, and detection capability of the various sensors and instruments. The total leakage rate limit is established so that, in the absence of normal ac power concurrent with a loss of

feedwater supply, makeup capabilities are provided by the RCIC [reactor core isolation cooling] system. While the leak detection system provides protection from small leaks, the ECCS [emergency core cooling system] network provides protection for the complete range of discharges from ruptured pipes. Thus, protection is provided for the full spectrum of possible discharges. The RCPB and the leak detection system are designed to meet the requirements of GDC[-]30.

LGS UFSAR Section 1.8, "Conformance to NRC Regulatory Guides," states:

This section provides a brief description of LGS conformance with the guidelines presented in the regulatory guides and provides reference to the UFSAR sections where the LGS design and details of conformance or alternate approaches are discussed.

The conformance information below applies only to the particular guide being addressed and not necessarily to other guides that may be referenced in that guide...

Specific to RG 1.45, Revision 0, the LGS UFSAR, Section 1.8, states:

The LGS design complies with the intent of this regulatory guide. Three diverse methods of detection have been provided. The design bases, limitations, and operation of these systems are discussed in Sections 5.2.5.2.1.3 through 5.2.5.2.1.5. These provisions meet or exceed the recommendations of ANSI/ISA [American National Standards Institute/Instrumentation Society of America] S67.03. Each of the three systems provided for leak detection has readouts and alarms in the main control room in accordance with Regulatory Guide 1.45.

The NRC staff notes that LGS is not committed to implementing RG 1.45, Revision 1.

3.0 TECHNICAL EVALUATION

In adopting the changes to TS included in TSTF-514, Revision 3, the licensee proposed to revise TS 3.4.3.1, "Leakage Detection Systems" Actions. The licensee proposed adding a new Action to TS 3.4.3.1. The new Action would be designated Action F, and the current Action F would be re-labeled as Action G (see below for further discussion). New Action F applies when the primary containment atmosphere gaseous radioactivity monitoring system and the primary containment pressure and temperature monitoring systems are the only operable RCS leakage detection systems. This new Action provides compensatory measures in this case of reduced diversity of available leakage monitoring systems. The compensatory measures are appropriate because improved fuel integrity and the resulting lower primary coolant radioactivity concentration affect the response of a plant's primary containment atmosphere gaseous radioactivity monitor to a greater extent than the response of other RCS leakage detection systems. The proposed new Action F requires the licensee to analyze grab samples of the primary containment atmosphere once per 12 hours, monitor RCS leakage by administrative means once per 12 hours, and restore either the drywell unit coolers condensate flow rate monitoring system or the required drywell floor drain sump monitoring system to Operable status within 7 days. The NRC staff notes that existing LGS, Units 1 and 2, TS 3.4.3.1,

Action C, also requires a channel check of the primary containment atmosphere gaseous radioactivity monitoring system every 8 hours under these circumstances.

Administrative means of monitoring RCS leakage include trending parameters that may indicate an increase in RCS leakage. According to the application dated April 6, 2011, there are diverse alternative methods from which appropriate indicators for identifying RCS leakage may be selected based on plant conditions. The licensee stated that they will utilize the following methods, considering the current plant conditions, and historical or expected sources of unidentified leakage, as their TS administrative means: drywell cooling fan inlet/outlet temperatures, drywell equipment drain sump temperature indicator, drywell equipment drain tank hi temperature indicator, and drywell equipment drain tank flow indicator.

The NRC staff determined that the proposed Action F is less restrictive than the current requirement, because current Action F requires hot shutdown within 12 hours if both the drywell floor drain sump monitoring system and the drywell unit coolers condensate flow monitoring system are inoperable, as compared to 7 days.

In its application the licensee stated:

A review of past operating experience from 1/1/2006 to 2/9/2011 at LGS Units 1 and 2 identified that the proposed Action F would have been entered three times for a total of 6 hours and 34 minutes. Although the proposed change to the LGS TS is an increase in the amount of time the plant is allowed to operate with the drywell floor drain sump flow monitoring system and the drywell unit coolers condensate flow rate monitoring system inoperable, the proposed Action F is more conservative than TS 3.4.3.1 Action E, is consistent with the approved TSTF-514-A, Revision 3 intent, and has operating experience to suggest it will be an infrequently entered Action statement.

The NRC staff reviewed the licensee's proposal and concludes that the proposed Action F is adequate because monitoring the RCS by administrative means, coupled with primary containment atmospheric grab samples, are sufficient to alert the operating staff to an unexpected increase in unidentified leakage. The primary containment atmospheric grab samples provide a method of detecting particulate and gaseous radioactive material in the primary containment atmosphere. However, taking frequent grab samples will ensure there is no significant loss of monitoring capability during the Required Action Completion Time. The 12-hour interval is reasonable given the availability of the primary containment atmosphere gaseous radioactivity monitoring system and the primary containment pressure and temperature monitoring system. Allowing 7 days to restore another RCS leakage monitor to operable status is reasonable given: (1) operating experience shows it will be infrequently entered; (2) the remaining diverse methods employed in the Required Actions to detect an RCS leak; and (3) the low probability of a large RCS leak during this period. Proposed Action F sufficiently alerts the operating staff, provides a comparable ability to detect RCS leakage, and provides time intervals that are reasonable. Therefore, the NRC staff determined that proposed Action F provides reasonable assurance of detecting RCS leakage such that appropriate action can be taken before the integrity of the reactor coolant pressure boundary is impaired. The NRC staff also notes that it is conservative relative to the improved STSs, which form the basis for the NRC's generic TSTF-514 evaluation.

The licensee proposes minor changes to ensure continuity of the TS format. These changes re-letter current Action F to Action G. Current Action F applies when two or more leakage detection systems are inoperable, other than Action E, or when the required actions and the associated Completion Times are not satisfied. Consistent with the changes to the revised Action F, the revised Action G also includes a reference to the revised Action F, in addition to the re-lettering change. The NRC staff determines that these changes are editorial, do not impact plant safety, and are therefore acceptable.

As described in the licensee's letter dated April 6, 2011, the application included "information only" changes showing the planned revisions to the Bases for TS 3.4.3.1 in conjunction with the proposed TS changes. TS Bases changes are made under the control of the licensee's TS Bases control program as specified in TS 6.8.4.h. Hence, the NRC staff makes no judgment in this application review as to the adequacy or acceptability of the TS Bases changes submitted.

Based on the above evaluation, the NRC staff concludes that the proposed amendment is 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 9, 2011 (76 FR 48911). 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.

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: K. Bucholtz
 P. Bamford

Date: December 19, 2011

December 19, 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
AMENDMENTS RE: REVISE ACTIONS FOR REACTOR COOLANT SYSTEM
LEAKAGE INSTRUMENTATION (TAC NOS. ME5993 AND ME5994)

Dear Mr. Pacilio:

The U.S. Nuclear Regulatory Commission (NRC or the Commission) has issued the enclosed Amendment No. 205 to Facility Operating License No. NPF-39 and Amendment No. 167 to Facility Operating License No. NPF-85 for Limerick Generating Station (LGS), Units 1 and 2, respectively. The amendments are in response to your application dated April 6, 2011.

The amendments modify the actions to be taken when the containment atmosphere gaseous radioactivity monitoring system and the primary containment pressure and temperature monitoring system are the only operable reactor coolant leakage detection monitoring systems. The modified actions require additional, more frequent monitoring of other indications of Reactor Coolant System (RCS) leakage and provide appropriate time to restore another monitoring system to operable status. This change is consistent with the U.S. Nuclear Regulatory Commission-approved safety evaluation on Technical Specification Task Force (TSTF) Traveler, TSTF 514-A, Revision 3, "Revised [Boiling Water Reactor] BWR Operability Requirements and Actions for RCS Leakage Instrumentation." The availability of this TS improvement was announced in the *Federal Register* on December 17, 2010 (75 FR 79048).

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:

1. Amendment No.205 to License No. NPF-39
2. Amendment No. 167 to License No. NPF-85
3. Safety Evaluation

cc w/enclosures: Distribution via Listserv

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Amendment: ML113210213

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NAME	PBamford	ABaxter	RElliott	GCasto	MSmith (NLO w/ comments)	HChernoff (REnnis for)
DATE	11/17/2011	11/28/2011	12/02/2011	12/07/2011	12/16/2011	12/19/2011

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