November 6, 2007

Mr. Christopher M. Crane
President & Chief Nuclear Officer
Exelon Generating Company, LLC
200 Exelon Way, KSA 3-E
Kennett Square, PA 19348

SUBJECT: LIMERICK GENERATING STATION, UNITS 1 AND 2 - ISSUANCE OF AMENDMENT RE: CHANGES TO TECHNICAL SPECIFICATION EMERGENCY DIESEL GENERATOR TESTING REQUIREMENTS (TAC NOS. MD3710 AND MD3711)

Dear Mr. Crane:

The Commission has issued the enclosed Amendment No. 189 to Facility Operating License No. NPF-39 and Amendment No. 150 to Facility Operating License No. NPF-85, for Limerick Generating Station, Units 1 and 2. These amendments consist of changes to the Technical Specifications (TSs) in response to your application dated November 27, 2006 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML063310230), as supplemented by letter dated August 24, 2007 (ADAMS Accession No. ML072400412).

These amendments revise multiple TSs relating to testing of the Emergency Diesel Generators (EDGs). The changes eliminate various accelerated testing requirements, eliminate the EDG test schedule table based on failure rates, relax acceptance criteria associated with the “fast start” and load rejection tests and eliminate the EDG failure report.

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 1-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-352 and 50-353

Enclosures:
1. Amendment No. 189 to License No. NPF-39
2. Amendment No. 150 to License No. NPF-85
3. Safety Evaluation

cc w/encls: See next page

November 6, 2007

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200 Exelon Way, KSA 3-E
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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

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cc w/encls: See next page

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Package Accession Number: ML072760070; Amendment Accession Number: ML072760080; Tech Specs for Amd189: ML073110500; Tec Specs for Amd150: ML073110709 * by memo

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DATE	10/3/07	10/10/07	10/12 /07	09/13/2007	10/17/07	11/6/07

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EXELON GENERATION COMPANY, LLC

DOCKET NO. 50-352

LIMERICK GENERATING STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 189
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 November 27, 2006, as supplemented by letter dated August 24, 2007, 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. 189 , 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

/ra/

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: November 6, 2007

ATTACHMENT TO LICENSE AMENDMENT NO. 189

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 areas of change.

Remove	Insert
Page 3	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	Insert
xiv	xiv
3/4 8-1	3/4 8-1
3/4 8-1a	3/4 8-1a
3/4 8-2a	3/4 8-2a
3/4 8-3	3/4 8-3
3/4 8-4	3/4 8-4
3/4 8-7a	3/4 8-7a
3/4 8-8	3/4 8-8

EXELON GENERATION COMPANY, LLC

DOCKET NO. 50-353

LIMERICK GENERATING STATION, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 150
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 November 27, 2006, as supplemented by letter dated August 24, 2007, 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. 150, 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

/ra/

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: November 6, 2007

ATTACHMENT TO LICENSE AMENDMENT NO. 150

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 areas of change.

Remove	Insert
Page 3	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	Insert
xiv	xiv
3/4 8-1	3/4 8-1
3/4 8-1a	3/4 8-1a
3/4 8-2a	3/4 8-2a
3/4 8-3	3/4 8-3
3/4 8-4	3/4 8-4
3/4 8-7a	3/4 8-7a
3/4 8-8	3/4 8-8

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 189 TO FACILITY OPERATING LICENSE NO. NPF-39

AND AMENDMENT NO. 150 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 November 27, 2006, (Agencywide Documents Access and Management System (ADAMS) Accession No. ML063310230), as supplemented by letter dated August 24, 2007 (ADAMS Accession No. ML072400412), Exelon Generation Company, LLC (Exelon, the licensee) requested changes to the Technical Specifications (TSs) for the Limerick Generating Station (LGS), Units 1 and 2. The supplement provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the staff's original proposed no significant hazards consideration determination as published in the *Federal Register* on July 31, 2007 (72 FR 41784).

This amendment revises multiple TSs relating to testing of the Emergency Diesel Generators (EDGs). Specifically, the proposed changes would (1) eliminate accelerated EDG testing in the event of a loss of one or both offsite power sources, (2) eliminate accelerated EDG testing caused by an inoperable support system, an independently testable component, or preplanned preventative maintenance or testing, (3) eliminate accelerated EDG testing in the event of an inoperable EDG provided an evaluation determines the absence of a potential common-mode failure situation, (4) eliminate repetitive 7-day accelerated EDG testing, (5) eliminate mandatory accelerated EDG testing when the inoperable EDG is returned to service prior to completing the testing, (6) eliminate the EDG test schedule table based on failure rates, (7) relax the testing criteria for the "fast start" EDG test, (8) relax the acceptance criteria for the EDG load rejection test, and (9) eliminate the EDG failure report.

2.0 REGULATORY EVALUATION

The following U.S. Nuclear Regulatory Commission (NRC) requirements and guidance documents are applicable to the staff's review of the licensee's amendment request:

1. Title 10 of the *Code of Federal Regulations* (10 CFR), Appendix A of Part 50, General Design Criterion (GDC) 17, "Electric power systems," and the LGS Updated Final Safety Analysis Report (UFSAR), section 3.1, state, in part, that "An onsite electric power system and an offsite electric power system shall be provided to permit functioning of

structures, systems, and components important to safety … The onsite electric power supplies, including the batteries, and the onsite electric distribution system, shall have sufficient independence, redundancy, and testability to perform their safety functions assuming a single failure. Electric power from the transmission network to the onsite electric distribution system shall be supplied by two physically independent circuits (not necessarily on separate rights of way) designed and located so as to minimize to the extent practical the likelihood of their simultaneous failure under operating and postulated accident and environmental conditions … Provisions shall be included to minimize the probability of losing electric power from any of the remaining supplies as a result of, or coincident with, the loss of power generated by the nuclear power unit, the loss of power from the transmission network, or the loss of power from the onsite electric power supplies."

2. GDC 18, "Inspection and testing of electric power systems," and the LGS UFSAR, section 3.1, state, in part, that "Electric power systems important to safety shall be designed to permit appropriate periodic inspection and testing of important areas and features …"

3. Paragraph 50.36(d)(2)(ii) of 10 CFR, "Technical specifications," requires that "[a] technical specification limiting condition for operation of a nuclear reactor must be established for each item meeting one or more of the [criteria set forth in 10 CFR 50.36(d)(2)(ii)(A)-(D)]."

4. Paragraph 50.36(d)(3) of 10 CFR, "Technical specifications," requires that TS include surveillance requirements (SRs), which "are requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the limiting conditions for operation will be met."

5. Section 50.65 of 10 CFR, "Requirements for monitoring the effectiveness of maintenance at nuclear power plants," requires that preventive maintenance activities must not reduce the overall availability of the systems, structures, and components.

6. Regulatory Guide (RG) 1.9, "Selection, Design, Qualification, and Testing of Emergency Diesel Generators Units Used As Class 1E Onsite Electric Power Systems at Nuclear Power Plants," provides guidance with respect to design and testing of safety-related EDGs. Section 1.8 of the LGS Updated Final Safety Analysis Report (UFSAR) specifies conformance with revision 0 of this RG.

7. NUREG-1366, "Improvements to Technical Specifications Surveillance Requirements," provides recommendations based on a comprehensive NRC staff examination of SRs.

8. Generic Letter (GL) 93-05, "Line-Item Technical Specifications Improvement to Reduce Surveillance Requirements for Testing During Power Operation," provides guidance for preparing a license amendment request to change the TS to reduce testing during power operation.

9. GL 94-01, "Removal of Accelerated Testing and Special Reporting Requirements for Emergency Diesel Generators," advised nuclear power plant licensees that they may

request a license amendment to remove accelerated testing and special reporting requirements for EDGs from plant TS.

3.0 TECHNICAL EVALUATION

3.1 Description of the LGS Alternating Current (AC) Electrical Power System

At LGS, Units 1 and 2, the two independent offsite electrical power sources are designed to provide reliable power for the auxiliary loads and the engineered safeguard loads so that any single failure can affect only one power supply and cannot propagate to the other source. An alternate independent, but currently not connected, 13 Kilovolt (kV) offsite power source, available as a potential power source, can be connected to supply the engineered safeguard loads of both LGS units in the event of the loss of one of the connected offsite power sources.

The two offsite power systems provide the preferred AC electric power to all Class 1E loads. In the event of total loss-of-offsite power sources, eight onsite independent EDGs (four EDGs per unit) provide the standby power for all engineered safeguard loads.

3.2 Evaluation of Proposed Changes

The NRC issued NUREG-1366 in order to report the findings of a comprehensive examination of TS SRs that require testing during power operation. This study provided recommendations to remove certain testing requirements that may be counter-productive in terms of equipment availability and degradation. The NRC issued GL 93-05 to provide guidance and to assist licensees in preparing and implementing the mentioned recommendations as line-item TS improvements. Section 10.1 of NUREG-1366 and GL 93-05 includes the following recommended improvements to the TS for the EDGs.

1. When an EDG itself is inoperable (not including a support system or independently testable component), the other EDG(s) should be tested only once (not every 8 hours) and within 8 hours, unless the absence of any potential common mode failure can be demonstrated.

2. EDGs should be loaded in accordance with the vendor recommendations for all test purposes other than the refueling outage loss-of-offsite power tests.

3. The hot-start test following the 24-hour EDG test should be a simple EDG start test. If the hot-start test is not performed within 5 minutes following the 24-hour EDG test, it should not be necessary to repeat the 24-hour EDG test. The only requirement should be that the hot-start test is performed within 5 minutes of operating the diesel generator at its continuous rating for 2 hours or until operating temperatures have stabilized.

4. Delete the requirements for alternate testing of EDGs and other unrelated systems not associated with an inoperable train or subsystem (other than an inoperable EDG).

While the majority of testing during power operation is important, the NRC found that, in some cases, reducing the amount of testing at power required by the TS could improve safety,

decrease equipment degradation, and eliminate unnecessary burden on personnel resources. The recommendations provided by NUREG-1366 were also incorporated into the Standard TS (NUREG-1433).

By letter dated November 27, 2006, the licensee proposed a license amendment to the TS for LGS, Units 1 and 2. The proposed changes would revise Limiting Condition for Operation (LCO) 3.8.1.1, "AC Sources - Operating," and associated SRs 4.8.1.1.2 and 4.8.1.1.3. The staff reviewed and evaluated each of the proposed changes to the LGS TS as follows:

3.2.1 LCO 3.8.1 Change (1): Eliminate accelerated EDG testing for loss of offsite power sources

Evaluation of LCO 3.8.1 Change (1):

The proposed change would eliminate the requirement to perform EDG start tests within 24 hours for one inoperable offsite power source (LCO 3.8.1.1, Action f), and within 8 hours for two inoperable offsite power sources (LCO 3.8.1.1, Action g). Inoperability of one or both offsite power sources is not indicative of an increased probability that the EDGs will fail the demonstration of operability. The licensee stated that the proposed change also acknowledges that the periodic testing required by SR 4.8.1.1.2.a, to demonstrate EDG operability, has been adequate to provide a high degree of assurance that the LGS EDGs are operable. Furthermore, the licensee stated that the proposed change would contribute to a reduction in unnecessary challenges and potential degradation to the EDGs.

The staff finds that the proposed change is consistent with the guidance of GL 93-05, and NUREG-1366, meets the requirements of 10 CFR 50.36 and GDCs 17 and 18 as specified in the LGS UFSAR, and is therefore, acceptable.

3.3.2 LCO 3.8.1 Change (2): Eliminate EDG testing for an inoperable support system, an independently testable component, or preplanned preventative maintenance or testing, associated with an inoperable EDG

Evaluation of LCO 3.8.1 Change (2):

The proposed change would delete the requirement to test the remaining EDGs when the cause of the inoperable EDG(s) is due to an inoperable support system, an independently testable component, or preplanned preventive maintenance or testing. The intent of testing the remaining EDGs is to demonstrate whether a common-mode failure condition exists for the EDGs and provide an increased level of assurance that the redundant EDGs are not concurrently inoperable. An inoperable support system or preplanned maintenance or testing, are situations that are not indicative of an EDG common-mode failure condition. An independently testable component involves the removal of an EDG support system from service that has the capability of being tested for operability independent of its associated EDG, and likewise is not indicative of an EDG common-mode failure condition. None of these exceptions are indicative that the other EDGs are inoperable, and the periodic testing required by SR 4.8.1.1.2.a remains adequate to ensure EDG operability. Furthermore, the licensee stated that the proposed change would contribute to a reduction in unnecessary challenges and potential degradation to the EDGs.

The staff finds that the proposed change is consistent with the guidance of GL 93-05, meets the requirements of 10 CFR 50.36 and GDCs 17 and 18 as specified in the LGS UFSAR, and is therefore, acceptable.

3.2.3 LCO 3.8.1 Change (3): Eliminate accelerated EDG testing for an inoperable EDG not caused by a common-mode failure

Evaluation of LCO 3.8.1 Change (3):

LCO 3.8.1.1, Actions a, b, d, and h, involving inoperable EDG(s), currently requires testing of the other EDGs within 24 or 8 hours without consideration of the nature of the failure. The proposed change would preclude accelerated testing provided an evaluation is performed that determines that a potential common-mode failure does not exist for the EDGs. The intent of testing is to determine if the failure of an EDG is indicative of a generic problem (common-mode failure) that may impact operability of the other EDGs, and to provide an increased level of assurance that the redundant EDGs are not concurrently inoperable. The periodic testing required by SR 4.8.1.1.2.a remains adequate to ensure EDG operability. For the generic problem issue, the change permits an option to perform a common-mode failure evaluation in lieu of an operability test of the other EDGs. Testing of the EDGs can be avoided provided the evaluation determines that a potential common-mode failure does not exist. To be credited, the common-mode failure evaluation must be completed within the associated LCO action completion time. Furthermore, the licensee stated that the change would contribute to a reduction in unnecessary challenges and potential degradation to EDGs.

The staff finds that the proposed change is consistent with the guidance of GL 93-05, meets the requirements of 10 CFR 50.36 and GDCs 17 and 18 as specified in the LGS UFSAR, and is therefore, acceptable.

3.3.4 LCO 3.8.1 Change (4): Eliminate repetitive 7-day accelerated testing for one inoperable EDG

Evaluation of LCO 3.8.1 Change (4):

LCO 3.8.1.1, Action a, currently requires a start test for the other EDGs within 24 hours, and every 7 days thereafter, when an inoperable EDG exists. The proposed change would remove the requirement to repeat the test every 7 days. The intent of the 24-hour test is to determine if there is a generic problem that may impact the operability of the other EDGs, and to provide an increased level of assurance that the redundant EDGs are not concurrently inoperable. A successful test of the other EDGs within 24 hours confirms the absence of a generic problem and that the other EDGs are operable. The continued operability of the other EDGs is assured by the performance of periodic testing required by SR 4.8.1.1.2.a. In the event an EDG(s) fails during the 24-hour test required by LCO 3.8.1.1, Action a, the action statements for multiple EDG failures will prescribe the required actions. Furthermore, the licensee stated that the change would eliminate unnecessary testing and contribute to a reduction in unnecessary challenges and potential degradation to EDGs.

The staff finds that the proposed change is consistent with the guidance of NUREG-1366 and GL 93-05, meets the requirements of 10 CFR 50.36 and GDCs 17 and 18 as specified in the LGS UFSAR, and is therefore, acceptable.

3.2.5 LCO 3.8.1 Change (5): Eliminate mandatory accelerated EDG testing if the inoperable EDG is returned to service prior to completing the test

Evaluation of LCO 3.8.1 Change (5):

The footnote on the bottom of TS pages 8-1 and 8-1a requires the testing triggered by an inoperable EDG to be completed regardless of when the inoperable EDG is restored to operability for failures that are potentially generic to the remaining EDGs. The proposed change would delete this footnote from pages 8-1 and 8-1a. One intent of this requirement is to determine that no common-mode failure exists. The licensee stated that extent of condition evaluations, including consideration of the potential for a common-mode failure, are required by LGS plant procedures in accordance with the plant corrective action program for all significant safety-related deficiencies. The licensee further stated that this program requires prompt completion of the evaluation and actions to preclude its recurrence, regardless of whether the initial corrective action is completed. The licensee contends that the corrective action program adequately assures that the necessary evaluations are completed in a timely manner, and may or may not entail additional EDG testing. The licensee plans to revise the LGS TS Bases to reflect the performance of this program.

The other intent of this requirement is to provide an increased level of assurance that redundant EDGs are not concurrently inoperable. However, this concern is eliminated once the inoperable EDG is restored to operable status, since no EDG is currently inoperable and the inoperability of one EDG is not automatically indicative of a similar condition in another EDG unless a generic failure is suspected. The periodic testing required by SR 4.8.1.1.2.a remains adequate to ensure EDG operability. Additionally, the licensee stated that the proposed change would eliminate unnecessary testing and contribute to a reduction in unnecessary challenges and potential degradation to EDGs.

The staff finds that the proposed change is consistent with the guidance of NUREG-1366 and GL 93-05, meets the requirements of 10 CFR 50.36 and GDCs 17 and 18 as specified in the LGS UFSAR, and is therefore, acceptable.

3.2.6 LCO 3.8.1 Change (6): Eliminate the EDG test schedule based on failure rates

Evaluation of LCO 3.8.1 Change (6):

By letter dated September 28, 2006, the NRC issued Amendment Nos. 186 and 147 for LGS, Units 1 and 2, respectively. These amendments relocated fixed periodic surveillance frequencies from the TS to the Surveillance Frequency Control Program (SFCP), which are controlled in accordance with LGS TS Section 6.8.4.j.

SR 4.8.1.1.2.a requires periodic EDG testing, including an EDG start and load test, at a frequency specified in TS Table 4.8.1.1.2-1. TS Table 4.8.1.1.2-1, "Diesel Generator Test Schedule," requires this EDG testing to be performed in accordance with the SFCP. SFCP Table 4.8.1.1.2-1 specifies a frequency of either 31 days or 7 days, depending on the number of EDG failures within the last 20 valid demands.

The licensee proposed removing TS Table 4.8.1.1.2-1 and revising SR 4.8.1.1.2.a, from a surveillance frequency perspective, to require EDG testing in accordance with the SFCP

consistent with Amendment Nos. 186 and 147. The licensee stated that the SFCP will specify that EDG testing relative to SR 4.8.1.1.2.a be performed on a frequency of 31 days, which is consistent with GL 94-01. Any future changes to the surveillance frequency in the SFCP will be controlled in accordance with the requirements of LGS TS Section 6.8.4.j.

The licensee stated that the methodology used for evaluating changes to surveillance frequencies within the SFCP, as required by LGS TS Section 6.8.4.j, recognizes that EDG failure rates and testing frequencies are assessed in accordance with the maintenance rule, 10 CFR 50.65, and the guidance of RG 1.160. Under the maintenance rule, increased EDG failure rates could trigger accelerated testing, i.e., a more frequent testing schedule than currently specified in SFCP Table 4.8.1.1.2-1. The elements of the maintenance rule program include the performance of a detailed cause analysis of individual EDG failures, effective corrective actions taken in response to individual EDG failures, and implementation of EDG preventive maintenance consistent with the maintenance rule. Additionally, the licensee stated that the proposed change would eliminate unnecessary testing and contribute to a reduction in unnecessary challenges and potential degradation to EDGs

GL 94-01 recommends removing the accelerated EDG testing requirements of TS Table 4.8.1.1.2-1, provided the licensee implements the requirements of the maintenance rule, 10 CFR 50.65. The licensee stated that LGS has implemented an EDG reliability program in accordance with the maintenance rule. Accordingly, the staff finds that the proposed change is consistent with the guidance of GL 94-01, meets the requirements of 10 CFR 50.36 and GDCs 17 and 18 as specified in the LGS UFSAR, and is therefore, acceptable.

3.2.7 LCO 3.8.1 Change (7): Relax the testing criteria for the fast start EDG test

Evaluation of LCO 3.8.1 Change (7):

SR 4.8.1.1.2.h currently requires a fast start test of the EDG, followed by synchronization to the emergency bus with the EDG fully loaded within 200 seconds. The proposed change would permit loading in accordance with manufacturer's recommendations in lieu of a 200-second loading constraint. The licensee stated that the proposed change would reduce the potential for engine wear. The licensee further stated that placing a time limitation on the operator to accomplish this loading would result in an increased potential for error and subsequent unavailability of the EDG. Furthermore, the licensee stated that the test, as currently required, contributes to adverse EDG reliability by requiring EDG loading at a rate faster than that recommended by the engine manufacturer. Thus, the licensee stated that the proposed changes would contribute to a reduction in unnecessary degradation to the EDGs

The staff finds that the proposed change is consistent with the guidance of NUREG-1366 and GL 93-05 and that starting, loading, subsequent full load operation, and automatic start and load tests required by other LGS TS surveillances are adequate to confirm EDG capability without the 200-second loading requirement. Based on this information, the staff concludes that the proposed change to LCO 3.8.1 meets the requirements of 10 CFR 50.36 and GDCs 17 and 18 as specified in the LGS UFSAR, and is therefore, acceptable.

3.2.8 LCO 3.8.1 Change (8): Relax the acceptance criteria for the EDG load rejection test

Evaluation of LCO 3.8.1 Change (8):

SR 4.8.1.1.2.e currently requires a test of the EDG's capability to reject a load of greater than or equal to that of its single largest post-accident load, and specifies the voltage and frequency limits. Specifically, SR 4.8.1.1.2.e currently requires verification that upon rejection of the residual heat removal (RHR) pump motor load, the voltage is maintained at 4285 ± 420 volts and frequency at 60 ± 1.2 hertz (Hz) and after steady-state conditions are reached, voltage is maintained at 4280 ± 120 V. The proposed change would relax the frequency limit during the 1.8 second interval immediately following load rejection. The licensee stated that the existing limit is overly constrictive, increasing the potential for unplanned maintenance and post maintenance testing. Furthermore, the licensee contended that the increased potential for maintenance may result in an unnecessary plant shutdown. With a larger frequency margin, degradation can be adequately identified and the appropriate maintenance scheduled during a planned outage. The licensee also stated that the proposed limits were consistent with those specified in RG 1.9, Revision 2.

By letter dated July 27, 2007, the NRC staff requested additional information from the licensee. In the request for additional information (RAI), the staff asked the licensee if it was their intent to fully commit to RG 1.9, Revision 2. If not, the staff requested the licensee to provide a detailed technical justification for relaxing the acceptance criteria currently contained in LGS TS for the EDG load rejection test.

The license responded to the staff's RAI in a letter dated August 24, 2007. In its response, the licensee stated that it was not their intent to fully commit to RG 1.9, Revision 2. The following is the staff's review of the licensee's detailed technical justification for relaxing the acceptance criteria currently contained in LGS TS for the EDG load rejection test.

The EDG and its connected loads constitute a stored energy system that cannot respond instantaneously to an input or perturbation (e.g., shedding of the RHR pump). The RHR pump is significant in that it constitutes the largest single post-accident load on the EDG. The licensee stated that due to the relatively small magnitude of the inertial loading of the RHR pump compared to the EDG, the voltage and frequency transient response often satisfies the existing TS acceptance criteria of maintaining voltage between 4285 ± 420 V and frequency between 60 ± 1.2 Hz throughout the transient. However, the licensee noted that, on occasion, the frequency exceeds the existing +1.2 Hz criteria by a small amount. When the existing criteria are not satisfied, the licensee must make minor adjustments to the EDG governor system. The licensee contends that momentarily exceeding the +1.2 Hz limit by a small amount has no effect on the overall ability of the EDG to perform its safety function; however, adjustments must be completed in order to meet the existing TS criteria. Depending on the actual adjustments made to the governor, the licensee must enter into a post-maintenance testing evolution that consists of multiple starts on the EDG accompanied by rapid sequential loading. The licensee contends that this testing evolution is adverse to the long-term reliability of the EDG as it is imposing excessive testing and unnecessary stressors on the system.

As mentioned above, the licensee proposed changing the EDG single largest load rejection test acceptance criteria to introduce a settling time of 1.8 seconds during which the EDG frequency would be allowed to exceed the 1.2 Hz limit. The voltage criteria would remain unchanged.

The maximum permitted frequency overshoot during the proposed 1.8-second period would be 66.5 Hz. The proposed frequency retains a 25 percent margin to the lowest potential overspeed trip setpoint of the EDG. The LGS EDGs operate at nominally 900 revolutions per minute (rpm) and the minimum EDG overspeed trip setpoint is 1030 rpm. The 66.5 Hz frequency limit correlates to 997.5 rpm engine speed, which the licensee contends is below the engine speed limit provided by the EDG manufacturer. The licensee further noted that each generator has been proof-tested to 125 percent of the nominal 900 rpm operating speed (1125 rpm) for one minute during factory testing. Based on this information, the staff finds that the 66.5 Hz maximum frequency overshoot limit for the proposed settling time of 1.8 seconds ensures that no damage will occur to either the engine or the generator.

LGS performs this test with the EDG carrying its associated 4 kV bus in the isochronous mode. Therefore, the safety loads that are on the bus will be exposed to the transient. The licensee reviewed the safety loads that would be on the bus during the transient and determined that the proposed change would have no adverse impact on those loads. Furthermore, the licensee's operating experience has shown that performance of this test introduces no adverse perturbations into the plant that could challenge safety systems or plant operations.

The staff finds that the proposed change provides assurance that EDG frequency will be sufficient following a rejection of the largest single load. Additionally, the staff finds that the proposed change is consistent with the theme of a reduction in excessive EDG testing that is advocated in GL 93-05 and NUREG-1366, conforms to the current LGS licensing basis as stated in Section 8.1.6.1.2 of the LGS UFSAR, is consistent with the improved Standard Technical Specifications as documented in Revision 3.1 of NUREG-1433, and meets the requirements of 10 CFR 50.36 and GDCs 17 and 18 as specified in the LGS UFSAR. Based on this information, the staff concludes that the proposed change to LCO 3.8.1 is acceptable.

3.2.9 LCO 3.8.1 Change (9): Eliminate the EDG failure report

Evaluation of LCO 3.8.1 Change (9):

SR 4.8.1.1.3 currently requires that a special report be sent to the NRC within 30 days of all EDG failures. The proposed change would delete this reporting requirement. The change conforms with the recommendations of GL 94-01 which permits removal of this reporting requirement provided licensees continue to comply with the reporting requirements of 10 CFR 50.72 and 50.73 to report EDG failures as applicable.

The staff finds that the proposed reporting change is consistent with the guidance of GL 94-01 and will not impact the safe operation of the plant since the report is submitted after the EDG failure has occurred. Based on this information, the staff concludes that the proposed change to LCO 3.8.1 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 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 previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding (72 FR 41784). 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 Contributor: M. McConnell

Date: November 6, 2007