

August 27, 2008

Mr. Charles G. Pardee
Chief Nuclear Officer and Senior Vice President
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: INCREASE IN EMERGENCY DIESEL GENERATOR DAY
TANK MINIMUM FUEL VOLUME (TAC NOS. MD6599 AND MD6600)

Dear Mr. Pardee:

The Commission has issued the enclosed Amendment No. 193 to Facility Operating License No. NPF-39 and Amendment No. 154 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 August 24, 2007 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML072400401), as supplemented by letter dated June 11, 2008 (ADAMS Accession No. ML081630558).

The amendments consist of revisions to the required volume of the emergency diesel generator (EDG) day tanks, TS Limiting Conditions for Operation 3.8.1.1.b.1 and 3.8.1.2.b.1 from the current minimum of 200 gallons to 250 gallons. This increase in required day tank volume is needed as a result of a LGS re-analysis of EDG fuel storage requirements, including the effects of using ultra-low sulfur diesel fuel oil.

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. 193 to License No. NPF-39
2. Amendment No. 154 to License No. NPF-85
3. Safety Evaluation

cc w/encls: See next page

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LPL1-2 R/F

Package Accession Number: ML082120704; Amendment Accession Number: ML082120718; Tech Specs for
Amd 193: ML082120726; Tec Specs for Amd 154: ML082120730

	LPLI-2/PM	LPLI-2/LA	SBPB/BC	SBPB/BC	OGC	LPLI-2/BC
Name	PBamford	ABaxter	DHarrison	RElliott	MBaty	HChernoff
Date	7/30/08	8/4/08	8/14/08	8/19/08	8/26/08	8/27/08

Official Record Copy

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Kennett Square, PA 19348

EXELON GENERATION COMPANY, LLC

DOCKET NO. 50-352

LIMERICK GENERATING STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 193
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 August 24, 2007, supplemented by letter dated June 11, 2008, 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. 193, 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: August 27, 2008

ATTACHMENT TO LICENSE AMENDMENT NO. 193

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

Page 3

Insert

Page 3

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

Remove

3/4 8-1
3/4 8-9

Insert

3/4 8-1
3/4 8-9

EXELON GENERATION COMPANY, LLC

DOCKET NO. 50-353

LIMERICK GENERATING STATION, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 154
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 August 24, 2007, supplemented by letter dated June 11, 2008, 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

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 154, 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: August 27, 2008

ATTACHMENT TO LICENSE AMENDMENT NO. 154

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
Page 3

Insert
Page 3

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

Remove
3/4 8-1
3/4 8-9

Insert
3/4 8-1
3/4 8-9

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 193 TO FACILITY OPERATING LICENSE NO. NPF-39
AND AMENDMENT NO. 154 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 letter dated August 24, 2007 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML072400401), Exelon Generation Company, LLC (Exelon, the licensee) requested changes to the Technical Specifications (TSs) for Limerick Generating Station (LGS), Units 1 and 2. By letter dated June 11, 2008 (ADAMS Accession No. ML081630558), a revised license amendment request (LAR) was submitted, where most of the changes proposed in the original license amendment request were withdrawn. The revised LAR proposes to change the required emergency diesel generator (EDG) day tank volume from a minimum of 200 gallons to a minimum of 250 gallons. The U.S. Nuclear Regulatory Commission (NRC or Commission) staff's proposed no significant hazards consideration determination for this change was published in the *Federal Register* on June 20, 2008 (73 FR 35168) and was based on the revised LAR.

The reason for this proposed change is to account for factors contained in a new LGS design analysis that address the variation of fuel heat content with specific gravity, account for parasitic engine driven shaft loads, address generator efficiency, and also include a specific allowance for the reduction in fuel oil heat content associated with the introduction of ultra low sulphur diesel (ULSD) fuel oil.

2.0 REGULATORY EVALUATION

General Design Criterion (GDC) 17, "Electric Power Systems," of Appendix A, "General Design Criteria for Nuclear Power Plants," to Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, "Domestic Licensing of Production and Utilization Facilities," requires that an onsite electric power system and an offsite electric power system be provided to permit functioning of structures, systems, and components important to safety. In addition, GDC 17 contains requirements concerning system capacity, capability, independence, redundancy, availability, testability, and reliability. LGS complies with GDC 17 as detailed in the Updated Final Safety Analysis Report (UFSAR), Sections 3.1 and 8.3.1.2.1.4.

The onsite electrical power system includes standby power sources, distribution systems, and vital auxiliary supporting systems to supply power to safety-related equipment. LGS, Units 1 and 2, uses diesel generators as the emergency power source for the safety-related electrical buses. The importance of the EDGs is reflected in their incorporation into the plant TSS, and other regulatory programs, including Appendix B (“Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants”) to 10 CFR Part 50. Important support system parameters for the LGS EDGs, such as the fuel oil supply system, are likewise incorporated into the plant TSS in accordance with 10 CFR 50.36 (d)(2)(ii)(C) and 10 CFR 50.36 (d)(3).

The LGS UFSAR also details specific requirements for the EDG fuel oil system. UFSAR Section 1.8 discusses LGS conformance with Regulatory Guide (RG) 1.137, “Fuel Oil Systems for Standby Diesel Generators”, revision 1, October 1979, which endorses/modifies ANSI N195-1976, “Fuel Oil Systems for Standby Diesel-Generators.” LGS is only committed to paragraph C.2 of this RG, which specifies requirements for fuel oil quality. LGS is thus not directly committed to the section of ANSI N195-1976 that specifies EDG day tank volume. However, requirements for LGS fuel oil system design are specified in UFSAR Section 9.5.4.2 and require that, in the unlikely event of a fuel oil system supply failure, the associated day tank low level alarm will provide approximately 1 hour of full load operation so that the operator can take corrective action to prevent loss of the diesel. The 1 hour requirement for day tank volume specified in the LGS UFSAR is comparable to the day tank volume requirement of ANSI N195-1976. This 1 hour requirement is reflected in the LGS TSS, Sections 3.8.1.1 and 3.8.1.2, converted to a volume specification. The minimum day tank volume is needed to support operability of the associated EDG.

3.0 TECHNICAL EVALUATION

The initial conditions of design-basis accident (DBA) analyses assume engineered safety feature (ESF) systems are operable. The EDGs are designed to provide sufficient capacity, capability, redundancy and reliability to ensure availability of necessary power to ESF systems so that nuclear fuel, reactor coolant system and primary containment design limits are not exceeded. To support this mission, an adequate quantity of fuel oil needs to be maintained in the EDG day tanks so that adequate time is available to respond to a failure of the fuel transfer system to prevent loss of the diesel.

Each of the EDGs is capable of supplying one of the four load divisions on each unit. Any combination of three-out-of-four divisions is acceptable for a single failure. Each EDG is physically and electrically independent from the other and any offsite power source. Each EDG fuel oil supply consists of an 850-gallon day tank that provides a suction source for the EDG fuel pumps, which in turn supply fuel to the engine injectors. Makeup to each day tank is accomplished automatically from a 41,500 gallon fuel storage associated with the EDG. Fuel oil is transferred from the storage tank to the day tanks by diesel oil transfer pumps. The transfer pump motors receive electrical power from the same electrical division as the diesel generator it supplies. The day tank has sufficient capacity to supply the EDG for more than 3 hours of continuous operation at rated load. Should the day tank supply system fail, a low level alarm will annunciate when the fuel oil remaining in the tank will provide approximately 1 more hour of rated operation so that the operator can take corrective action to prevent loss of the EDG. The level at which the day tank is maintained by the fuel oil supply control system is above the low alarm setpoint and thus the operator would know that receipt of a low level alarm means there is a problem with the fuel oil supply system.

The current volume of fuel oil required to support an EDG operating for 1 hour at the continuous rating of 2850 kilowatts (Kw) is specified at 200 gallons in the LGS TSS. Based on a station re-analysis of factors that could impact fuel consumption, including the use of ULSD fuel, the

licensee has concluded that this TS requirement is non-conservative. The 1 hour fuel consumption rate could be as high as 220 gallons per hour at continuous rated load. After applying a margin of 10 percent, as recommended by ANSI N195-1976, the licensee concluded that 242 gallons of fuel oil is required to maintain the 1 hour basis of operation that is specified in the UFSAR and therefore proposes a new 250 gallon TS requirement. Since the oil level in the day tank is controlled above the new proposed 250 gallon requirement, and the low level alarm annunciates at a level above the new requirement, no setpoint changes, plant modifications or changes to EDG operation will be required as a result of the higher required minimum volume.

The proposed change in EDG day tank minimum volume maintains the original licensing basis requirement as specified in the LGS UFSAR, of 1 hour of continuous operation at rated load after receipt of the low level alarm. Even though the licensee is not fully committed to the oil storage requirements of ANSI N195-1976, the new EDG day tank TS volume requirement also meets the requirements of that standard since the automatic day tank fuel oil supply system maintains a higher level in the tank than is necessary to support 1 hour of operation of the engine at rated load. Thus, the proposed change meets both the plant licensing basis and the standard that the NRC finds acceptable for evaluating the compliance of diesel fuel systems with GDC 17. Additionally, the proposed change is in the more restrictive (conservative) direction as compared to the current TS minimum. Based on these considerations the NRC staff finds the proposed change 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 (73 FR 35168). 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: Peter Bamford

Date: August 27, 2008