

January 2, 2003

Mr. John L. Skolds, President
and Chief Nuclear Officer
Exelon Nuclear
Exelon Generation Company, LLC
200 Exelon Way, KSA 3-E
Kennett Square, PA 19348

SUBJECT: LIMERICK GENERATING STATION, UNITS 1 AND 2 - ISSUANCE OF
AMENDMENT RE: PRESSURE/TEMPERATURE CURVES (TAC NOS.
MB5507 and MB5508)

Dear Mr. Skolds:

The Commission has issued the enclosed Amendment No. 163 to Facility Operating License No. NPF-39 and Amendment No. 125 to Facility Operating License No. NPF-85 for the Limerick Generating Station, Units 1 and 2. These amendments consist of changes to the Technical Specifications (TSs) in response to your application dated June 26, 2002, as supplemented September 12, 2002.

These amendments would extend the use of pressure-temperature limits in TS Figure 3.4.6.1-1 for both units to 32 effective full power years.

A copy of our safety evaluation is also enclosed. Notice of Issuance will be included in the Commission's biweekly *Federal Register* notice.

Sincerely,

/RA/

Scott P. Wall, Project Manager, Section 2
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-352 and 50-353

Enclosures: 1. Amendment No. 163 to
License No. NPF-39
2. Amendment No. 125 to
License No. NPF-85
3. Safety Evaluation

cc w/encls: See next page

Limerick Generating Station, Units 1 & 2

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These amendments would extend the use of pressure-temperature limits in TS Figure 3.4.6.1-1 for both units to 32 effective full power years.

A copy of our safety evaluation is also enclosed. Notice of Issuance will be included in the Commission's biweekly *Federal Register* notice.

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Scott P. Wall, Project Manager, Section 2
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Docket Nos. 50-352 and 50-353

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- 2. Amendment No. 125 to License No. NPF-85
- 3. Safety Evaluation

cc w/encls: See next page

DISTRIBUTION:

PUBLIC	PDI-2 R/F	JClifford	SWall	RPulsifer
RDennig	BSmith, OGC	ACRS	GHill (4)	LLois
BPlatchek, RI	MO'Brien	SCoffin	FAkstulewicz	MMitchell

DOCUMENT NAME: C:\ORPCheckout\FileNET\ML030030022.wpd

Accession Number: ML

* see previous concurrence

OFFICE	PDI-2/PM	PDI-2/PM	PDI-2/LA	SXRB*	EMCB*	OGC*	PDI-2/SC
NAME	RPulsifer	SWall	MO'Brien	FAkstulewicz	SCoffin	BSmith	JClifford
DATE	12/19/02	12/20/02	12/27/02	12/10/02	11/29/02	12/13/02	12/27/02

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EXELON GENERATION COMPANY, LLC

DOCKET NO. 50-352

LIMERICK GENERATING STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 163
License No. NPF-39

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Exelon Generation Company, LLC (the licensee) dated June 26, 2002, as supplemented September 12, 2002, 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:

Technical Specifications

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 163, are hereby incorporated in the 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 30 days.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

James W. Clifford, Chief, Section 2
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the
Technical Specifications

Date of Issuance: January 2, 2003

ATTACHMENT TO LICENSE AMENDMENT NO. 163

FACILITY OPERATING LICENSE NO. NPF-39

DOCKET NO. 50-352

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

Remove
3/4 4-20

Insert
3/4 4-20

EXELON GENERATION COMPANY, LLC

DOCKET NO. 50-353

LIMERICK GENERATING STATION, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 125
License No. NPF-85

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Exelon Generation Company, LLC (the licensee) dated June 26, 2002, as supplemented September 12, 2002, 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:

Technical Specifications

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 125, are hereby incorporated in the license. Exelon Generation Company shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. The license amendment is effective as of its date of issuance and shall be implemented within 30 days.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

James W. Clifford, Chief, Section 2
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the
Technical Specifications

Date of Issuance: January 2, 2003

ATTACHMENT TO LICENSE AMENDMENT NO. 125

FACILITY OPERATING LICENSE NO. NPF-85

DOCKET NO. 50-353

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

Remove
3/4 4-20

Insert
3/4 4-20

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NOS. 163 AND 125 TO FACILITY OPERATING
LICENSE NOS. NPF-39 AND NPF-85
EXELON GENERATION COMPANY, LLC
LIMERICK GENERATING STATION, UNITS 1 AND 2
DOCKET NOS. 50-352 AND 50-353

1.0 INTRODUCTION

By application dated June 26, 2002 (Reference 1), as supplemented September 12, 2002 (Reference 2), Exelon Generation Company, LLC (the licensee), requested changes to the Technical Specifications (TSs) for Limerick Generating Station (Limerick), Units 1 and 2. The supplement dated September 12, 2002, 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 August 6, 2002 (67 FR 50953).

The proposed changes would extend the use of the pressure-temperature (P-T) limits in TS Figure 3.4.6.1-1 to 32 effective full power years (EFPY).

2.0 BACKGROUND

The Nuclear Regulatory Commission (NRC) staff has previously reviewed the P-T limit curves contained in Limerick Unit 1 TS Figure 3.4.6.1-1 and Limerick Unit 2 TS Figure 3.4.6.1-1. The staff's prior reviews concluded that the Limerick Unit 1 and Unit 2 P-T limit curves were acceptable for 32 EFPY of operation under the assumption that the neutron fluence ($E > 1.0$ MeV) at the 1/4 thickness (1/4T) depth (i.e., the throughwall location one-quarter of the way from the inside surface to the outside surface of the reactor pressure vessel (RPV)) for the units' limiting RPV materials would be 1.3×10^{18} n/cm² (neutrons/centimeter) at 32 EFPY. However, during the staff's subsequent reviews, the adequacy of the methodology used by the licensee to determine the RPV neutron fluences was questioned and, as a result, the period of validity of the existing P-T limit curves was restricted to the end of operating cycle 10 for Limerick Unit 1 and the end of operating cycle 7 for Limerick Unit 2. It was understood that the licensee would perform updated RPV fluence calculations utilizing an NRC staff approved methodology which is consistent with the guidance in Regulatory Guide (RG) 1.190, "Calculational and Dosimetry Methods for Determining Pressure Vessel Neutron Fluence," (Reference 4) prior to the time when the restricted P-T limit curves would become invalid. Any necessary changes to the P-T limit curves would be made in order to support continued operation of the units based on the results of the licensee's updated neutron fluence calculations.

3.0 REGULATORY EVALUATION

The regulatory requirements for fluence calculations are in General Design Criteria (GDC) 30 and 31 (Reference 3). The staff issued RG 1.190 in March 2001, which provided state-of-the-art calculations and measurement procedures that are acceptable to the NRC staff for determining pressure vessel fluence. The staff has approved vessel fluence calculation methodologies which satisfy the requirements of GDC 30 and 31 and are done with approved methodologies or with methods which are shown to adhere to the guidance in RG 1.190.

4.0 TECHNICAL EVALUATION

4.1 Fluence Calculational Methodology and Fluence Values

In the June 26, 2002, license amendment request, the licensee submitted the results of their updated RPV neutron fluence calculations. The pressure vessel fluences were recalculated using the staff-approved method described in NEDC-32983P-A (Reference 5). The staff's review found that the method has been applied correctly. The calculated values are acceptable because they were calculated using an approved method which was applied correctly.

The original peak pressure vessel inside surface fluence was calculated to be 1.7×10^{18} n/cm². This was subsequently increased by 10% (for future power uprates) and was assumed to apply from the reactor startup rather than from the actual power uprate. In addition, the present uprate is only 5%. The 10% increase and its application from the beginning of power operation give the 32 EFPY value of the vessel fluence a significant margin of conservatism. The final fluence value for 32 EFPY used for the calculation of the P-T curves was 1.9×10^{18} n/cm² or 1.3×10^{18} n/cm² at the 1/4T vessel thickness. The recalculated fluence value at 1/4T is 0.89×10^{18} n/cm², which gives the current P-T curves a significant margin of conservatism.

4.2 Limerick Unit 1

On January 30, 2002, the staff issued Amendment No. 155 (Reference 7), which limited the validity of the P-T curves to the end of cycle 10, estimated to occur in April 2004. Because the recalculated fluence is bounded by the fluence value used in the calculation of the present curves, extension of the validity of the P-T curves to 32 EFPY is acceptable.

4.3 Limerick Unit 2

On March 23, 2001, the staff issued Amendment No. 111 (Reference 6), which limited the validity of the P-T curves to the end of cycle 7, estimated to occur in April 2003. Because the recalculated fluence is bounded by the fluence value used in the calculation of the present curves, extension of the validity of the P-T curves to 32 EFPY is acceptable.

4.4 TS Changes

The proposed TS change would eliminate a note in Figure 3.4.6.1-1 from the TSs of both units. The note limited the applicability of the P-T curves to cycles 10 and 7 for Units 1 and 2,

respectively. The original curves for 32 EFPY, as indicated in TS Figure 3.4.6.1-1 for both units, were conservatively estimated and the removal of the note is acceptable.

5.0 SUMMARY

The staff has reviewed the Exelon submittal for Limerick Units 1 and 2 of June 26, 2002, as supplemented on September 12, 2002, with respect to the revised pressure vessel fluence values and the associated changes in the P-T curves. The staff finds that the proposed fluence values are acceptable because they were derived using staff-approved methodologies which satisfy the applicable regulatory requirements in GDC 30 and 31. In addition, the recalculated fluence bound the values used to derive the current P-T curves.

Therefore, the staff finds the P-T curves valid for 32 EFPY and the removal of the note from Figure 3.4.6.1-1 acceptable.

6.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Pennsylvania State official was notified of the proposed issuance of the amendments. The State official had no comments.

7.0 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 (67 FR 50953). Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

8.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

9.0 REFERENCES

1. Letter from M. P. Gallagher, Exelon Nuclear Corporation, to NRC, "License Amendment Request LG 02-00391, Extended Use of Pressure-Temperature Limits Specified in Technical Specifications Figure 3.4.6.1-1," dated June 26, 2002.

2. Letter from M. P. Gallagher, Exelon Nuclear Corporation, to NRC, "License Amendment Request LG 02-00391, Extended Use of Pressure-Temperature Limits Specified in Technical Specifications Figure 3.4.6.1-1 - Supplemental Information," dated September 12, 2002.
3. Appendix A to 10 CFR Part 50, General Design Criterion 30, "Quality of Reactor Coolant Pressure Boundary," and General Design Criterion 31, "Fracture Prevention of Reactor Coolant Pressure Boundary."
4. NRC Regulatory Guide 1.190, "Calculational and Dosimetry Methods for Determining Pressure Vessel Neutron Fluence," March 2001.
5. Letter from J. F. Klapproth, GE, to Document Control Desk, NRC, "Submittal of GE Proprietary Document NEDC-32983P-A, Revision 1, 'General Electric Methodology for Reactor Pressure Vessel Fast Neutron Flux Evaluation,'" dated December 2001.
6. Letter from C. Gratton, NRC, to J. A. Hutton, Exelon, "Limerick Generating Station, Unit 2 - Issuance of Amendment - Re: Update the Pressure-Temperature Limit Curves for Limerick Generating Station (TAC No. MB0590), dated March 23, 2001.
7. Letter from C. Gratton, NRC, to O. D. Kingsley, Exelon, "Limerick Generating Station, Unit 1 - Issuance of Amendment - Re: Extended Use of the Facility Pressure-Temperature Limits and Request to Modify the Reactor Vessel Surveillance Capsule Withdrawal Schedule (TAC No. MB2933), dated January 30, 2002.

Principal Contributors: Lambros Lois
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Date: January 2, 2003