

PROPRIETARY INFORMATION – WITHHOLD UNDER 10 CFR 2.390RS-22-091
November 10, 202210 CFR 2.390
10 CFR 50.90U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001LaSalle County Station, Units 1 and 2
Renewed Facility Operating License Nos. NPF-11 and NPF-18
NRC Docket Nos. 50-373 and 50-374Subject: License Amendment Request – Relocation of Pressure and Temperature Limit
Curves to the Pressure and Temperature Limits Report

In accordance with 10 CFR 50.90, "Application for amendment of license, construction permit, or early site permit," Constellation Energy Generation, LLC (CEG) requests an amendment to Renewed Facility Operating License Nos. NPF-11 and NPF-18 for LaSalle County Station (LSCS), Units 1 and 2.

The proposed amendment modifies Technical Specification (TS) Section 1.0 ("DEFINITIONS"), Section 3.4.11 ("RCS Pressure and Temperature (P/T) Limits") and Section 5.0 ("ADMINISTRATIVE CONTROLS") by replacing the existing reactor vessel heatup and cooldown rate limits and the pressure and temperature (P-T) limit curves with references to the Pressure and Temperature Limits Report (PTLR).

Attachment 1 contains the evaluation of the proposed changes. Attachment 2 provides the marked up TS pages. Attachment 3 contains the marked-up Bases pages. The Bases pages are being provided for information only. Attachment 6 contains the PTLR for LSCS.

Attachment 10 contains information proprietary to EPRI. CEG requests that these documents be withheld from public disclosure in accordance with 10 CFR 2.390(b)(4). An Affidavit supporting this request is contained in Attachment 5. The non-proprietary version of this document is contained in Attachment 7.

Attachments 11 and 12 contain information proprietary to TransWare. CEG requests that these documents be withheld from public disclosure in accordance with 10 CFR 2.390(b)(4). An affidavit supporting this request is contained in Attachment 4. Attachments 8 and 9 contain non-proprietary versions of this information.

Attachments 10, 11, and 12 contains Proprietary Information. Withhold from public disclosure under 10 CFR 2.390. When separated from Attachments 10, 11, and 12, this document is decontrolled.

The proposed change has been reviewed by the LSCS Plant Operations Review Committee in accordance with the requirements of the CEG Quality Assurance Program.

CEG requests approval of the proposed amendment by October 31, 2023. Once approved, these amendments shall be implemented within 30 days of issuance.

CEG is notifying the State of Illinois by transmitting a copy of this letter (without attachments) to the designated State Officials in accordance with 10 CFR 50.91, "Notice for public comment; State consultation," paragraph (b).

There are no regulatory commitments contained in this letter. Should you have any questions concerning this letter, please contact Mr. Jason C. Taken at (630) 657-3660.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 10th day of November 2022.

Respectfully,

Kevin Lueshen
Sr. Manager Licensing
Constellation Energy Generation, LLC

Attachments:

Attachment 1: Evaluation of Proposed Changes
Attachment 2: Markup of Technical Specification Pages
Attachment 3: Markup of Technical Specification Bases Pages
Attachment 4: TransWare Enterprises Inc. Affidavits
Attachment 5: Electric Power Research Institute (EPRI) Affidavit
Attachment 6: LaSalle County Generating Station Units 1 and 2 Pressure and Temperature Limits Report (PTLR) for 54 Effective Full-Power Years (EFPY) (Non-Proprietary)
Attachment 7: BWRVIP-135, Revision 4: BWR Vessel Internals Project Integrated Surveillance Program (ISP) Data Source Book and Plant Evaluations (Non-Proprietary Version)
Attachment 8: "LaSalle County Generating Station Unit 1 Fluence Methodology Report," LAS-FLU-001-R-010, Rev. 0 (Non-Proprietary Version)
Attachment 9: "LaSalle County Generating Station Unit 2 Fluence Methodology Report," LAS-FLU-001-R-008, Rev. 0 (Non-Proprietary Version)
Attachment 10: BWRVIP-135, Revision 4: BWR Vessel Internals Project Integrated Surveillance Program (ISP) Data Source Book and Plant Evaluations (Proprietary Version)
Attachment 11: "LaSalle County Generating Station Unit 1 Fluence Methodology Report – Licensing Report," LAS-FLU-001-R-009, Rev. 0 (Proprietary Version)
Attachment 12: "LaSalle County Generating Station Unit 1 Fluence Methodology Report – Licensing Report," LAS-FLU-001-R-007, Rev. 0 (Proprietary Version)

Attachments 10, 11, and 12 contains Proprietary Information. Withhold from public disclosure under 10 CFR 2.390. When separated from Attachments 10, 11, and 12, this document is decontrolled.

cc:

U.S. NRC Region III, Regional Administrator (without attachments)
U.S. NRC Senior Resident Inspector, LaSalle County Station (without attachments)
Illinois Emergency Management Agency – Division of Nuclear Safety (without attachments)

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ATTACHMENT 1

Evaluation of Proposed Changes

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Evaluation of Proposed Changes

1.0 SUMMARY DESCRIPTION

In accordance with 10 CFR 50.90, "Application for amendment of license, construction permit, or early site permit," Constellation Energy Generation, LLC (CEG) requests an amendment to Renewed Facility Operating License Nos. NPF-11 and NPF-18 for LaSalle County Station (LSCS), Units 1 and 2.

The proposed amendment modifies the Technical Specifications (TS) by replacing the pressure and temperature (P-T) limit curves with references to the Pressure and Temperature Limits Report (PTLR).

The PTLRs contain updates to the P-T limit curves for the beltline, bottom head, and nonbeltline regions for the LSCS, Units 1 and 2 reactor pressure vessels (RPV). The P-T curves are developed for 54 effective full power years (EFPY) of operation. The P-T curves were prepared using the methods documented in the Boiling Water Reactor Owners' Group (BWROG) Licensing Topical Report (LTR) BWROG-TP-11-022-A, Revision 1 (Structural Integrity Associates, Inc. Report SIR-05-044, Revision 1-A), "Pressure-Temperature Limits Report Methodology for Boiling Water Reactors" (Reference 1). This BWROG LTR satisfies the requirement of 10 CFR 50, Appendix G, and the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel (B&PV) Code, Section XI, Nonmandatory Appendix G (Reference 2).

The guidance of Nuclear Regulatory Commission (NRC) Generic Letter (GL) 96-03, "Relocation of the Pressure Temperature Limit Curves and Low Temperature Overpressure Protection System Limits," (Reference 3) was applied during P-T curve development. Also, Technical Specification Task Force (TSTF) Traveler TSTF-419-A, "Revise PTLR Definition and References in ISTS 5.6.6, RCS PTLR" (Reference 4), which has received NRC approval, was followed in development of the proposed TS changes.

2.0 DETAILED DESCRIPTION

The proposed change includes the following TS revisions:

- a) TS Section 1.1 "DEFINITIONS". This section is updated to add PTLR as a definition and contains an editorial variation from TSTF-419-A and the Standard Technical Specifications discussed in section 4.3 of this application.
- b) TS Section 3.4.11, "RCS Pressure and Temperature (P/T) Limits Part 1" and "Part 2 (Figures)"
- c) TS Section 5.0, "Administrative Controls" – A new Section 5.6.7 ("REACTOR COOLANT SYSTEM (RCS) PRESSURE AND TEMPERATURE LIMITS REPORT (PTLR)") has been added. The format and content are consistent with that in TSTF-419-A and includes the full methodology citation. This new section: (1) identifies the individual TS that address reactor coolant system P-T limits; (2) references the NRC-approved topical report that documents PTLR methodologies in a complete citation; and (3) requires that the PTLR and any revision or supplement thereto be submitted to the NRC.

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Attachment 2 provides the existing TS pages marked up to show the proposed changes. Marked up pages showing corresponding changes to the TS Bases are provided in Attachment 3 for information only.

The attached (Attachment 6) PTLR provides the P-T curves developed to represent steam dome pressure versus minimum vessel metal temperature incorporating appropriate non-beltline limits and irradiation embrittlement effects in the beltline region.

3.0 TECHNICAL EVALUATION

10 CFR 50, Appendix G, requires the establishment of P-T limits for material fracture toughness requirements of the Reactor Coolant Pressure Boundary materials. 10 CFR 50, Appendix G requires an adequate margin to brittle failure during normal operation, abnormal operational transients, and system hydrostatic tests.

Historically, the P-T limit curves for BWRs have been contained in the TS, necessitating the submittal of license amendment requests to update the curves. This caused both the NRC and licensees to expend resources that could otherwise be devoted to other activities.

The pressure and temperature limits were calculated in accordance with Reference 1. The neutron fluence is calculated in accordance with NRC Regulatory Guide 1.190 (RG 1.190) (Reference 2) using the Radiation Analysis Modeling Application (RAMA) computer code. Attached are the TransWare Enterprises Inc. neutron transport or neutron flux calculations used in the preparation of the LSCS, Units 1 and 2 PTLRs. The adjusted reference temperature (ART) values for the limiting beltline materials are calculated in accordance with NRC Regulatory Guide 1.99, Revision 2 (Reference 3).

Generic Letter 96-03 allows plants to relocate their P-T curves and associated numerical limits (such as heatup and cooldown rates) from the plant TS to a PTLR, which is a licensee-controlled document. As stated in Generic Letter 96-03, during the development of the improved Standard Technical Specifications (STS), a change was proposed to relocate the P-T limits currently contained in the plant TS to a PTLR. As one of the improvements to the STS, the NRC staff agreed with the industry that the curves may be relocated outside the plant TS to a PTLR so that the licensee could maintain these limits efficiently. One of the prerequisites for having the PTLR option is that the P-T curves and limits be derived using methodologies approved by the NRC, and that the associated licensing topical reports describing the approved methodologies be referenced in the plant TS.

By letter dated May 16, 2013 (Reference 5), the NRC staff found that Topical Report (TR) BWROG-TP-11-022, Revision 1, "is acceptable for referencing in licensing applications for boiling water reactors to the extent specified and under the limitations delineated in the TR and in the enclosed final SE. The final SE defines the basis for our acceptance of the TR." This Safety Evaluation Report (SER) permits licensees who use the BWROG-TP-11-022 methodology and follow the PTLR guidance in GL 96-03 to relocate their P-T curves from the facility TS to a PTLR using the guidance in Technical Specification Task Force (TSTF) Traveler No. 419-A. The BWROG issued the final report on September 4, 2013 (Reference 7), which contains the Revision 1-A of BWROG-TP-11-022, Revision 1, dated August 2013, the final SER, along with the NRC requests for additional information (RAIs), and the BWROG's responses to the NRC RAIs.

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The NRC SER contained one condition for future potential applicants to address in their application of this LTR to their plant-specific P-T limits or PTLR submittal:

Each applicant referencing this LTR shall confirm that, in addition to the requirements in the ASME Code, Section XI, Appendix G, the lowest service temperatures for all ferritic RCPB components that are not part of the RPV, are below the lowest operating temperature in the proposed P-T limits.

This condition is discussed further in the "Pressure-Temperature Curve Evaluation" section of this LAR.

Generic Letter 96-03 provides regulatory guidance regarding relocation of P-T curves and associated numerical limits, such as heatup and cooldown rates, from plant TS to a PTLR, a Licensee-controlled document. As stated in GL 96-03, a licensee requesting such a change must satisfy the following three criteria:

1. Have USNRC-approved methodologies to reference in the TS.
2. Develop a PTLR to contain the P-T limit curves, associated numerical limits, and any necessary explanation, and
3. Modify applicable sections of the TS accordingly.

Criterion 7 of Generic Letter 96-03 specifies that the licensee should "provide supplemental data and calculations of the chemistry factor in the PTLR if the surveillance data are used in the ART [adjusted reference temperature] calculation." Therefore, in order to ensure that the proposed PTLR is consistent with Criterion 7 in GL 96-03, Constellation is providing supporting data and calculations from the Boiling Water Reactor Vessel and Internals Project (BWRVIP) Integrated Surveillance Program Data Source Book (BWRVIP-135) for determining the proprietary Integrated Surveillance Program (ISP) material chemistry factor values listed in the PTLRs.

Revised P-T curves were developed for hydrostatic pressure and leak tests, and normal operation with core not critical and core critical conditions. The revised curves have been developed for application up to 54 EFPY.

The revised LSCS, Units 1 and 2 P-T curves were prepared using the methods documented in the BWROG-TP-11-022-A, Revision 1 (Reference 1). This BWROG LTR provides NRC-approved BWROG fracture mechanics methodologies for generating P-T curves/limits and allows BWR plants to adopt the PTLR option in accordance with TSTF-419-A and GL 96-03. The LTR satisfies the requirements of 10 CFR 50, Appendix G, as augmented by the American Society of Mechanical Engineers Boiler and Pressure Vessel Code, Section XI, Nonmandatory Appendix G.

The LTR has four sections and four appendices, the content of which is summarized below.

- Section 1.0 describes the background and purpose for the LTR. Attachment 1 of GL 96-03 provides seven technical criteria to which a methodology should conform, in order to develop P-T limits acceptable by the NRC staff. These seven criteria are explained in this section.
- Section 2.0 of the BWROG LTR provides the fracture mechanics methodology and its basis for developing P-T limits.
- Section 3.0 of the BWROG LTR provides a step-by-step procedure for calculating P-T limit curves. This section indicates that typically three reactor pressure vessel regions

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are evaluated with respect to P-T limits: (1) the beltline region; (2) the bottom head region; and (3) the non-beltline region.

- Section 4.0 of the BWROG LTR provides the references.
- Appendix A of the LTR provides guidance for evaluating surveillance data.
- Appendix B provides a template for development of an acceptable PTLR.
- Appendix C provides the Revision 0 requests for additional information, along with the respective responses.
- Appendix D provides the Revision 1 requests for additional information, along with the respective responses.

Neutron Fluence Calculations:

The neutron fluence calculations were updated using the NRC-approved methodology and in accordance with NRC Regulatory Guide 1.190 (Reference 2).

The fluence is based upon operation for 54 EFPY. The calculated neutron fluences at the end of 54 EFPY are provided in Tables 7 and 8 of the PTLR.

10 CFR 50, Appendix G, requires reactor vessel beltline materials to be tested in accordance with the surveillance program requirements of 10 CFR 50, Appendix H.

LSCS, Units 1 and 2 has replaced the original RPV material surveillance program with the Boiling Water Reactor Vessel and Internals Project (BWRVIP) Integrated Surveillance Program (ISP). LSCS, Units 1 and 2 are committed to use the BWRVIP ISP during the current licensed period.

Use of the BWRVIP ISP for LSCS, Units 1 and 2 was approved by the NRC on August 13, 2003 (Reference 9). LSCS, Units 1 and 2 have made a license renewal commitment to use the ISP during the period of extended operation (Reference 10). The Reactor Vessel Surveillance program is based on BWRVIP-86 Rev 1-A, "BWRVIP-86, Revision 1-A: BWR Vessel and Internals Project Updated BWR Integrated Surveillance Program (ISP) Implementation Plan," dated October 2012.

Pressure-Temperature Curve Evaluation:

Three regions of the reactor pressure vessel were evaluated to develop the revised P-T curves: the beltline region, the bottom head region, and the non-beltline region. These regions bound all other regions with respect to brittle fracture.

The methodology used to generate the P-T curves in this submittal is approved by the NRC, and uses adjusted reference temperature (ART) values determined in accordance with RG 1.99, Revision 2.

The revised P-T curves and outputs from the ISP ensure that adequate RPV safety margins against non-ductile failure will continue to be maintained during normal operations, anticipated operational occurrences, and inservice leak and hydrostatic testing. Together, these measures ensure that the integrity of the reactor coolant pressure boundary (RCPB) will be maintained for the life of the plant.

Proposed revisions to applicable sections of the TS have been prepared and are provided in Attachment 2. These proposed changes are consistent with the guidance provided in GL 96-03, as supplemented by TSTF-419-A.

Conditions and Limitations:

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The NRC SER contained one condition for future potential applicants to address in their application of this LTR to their plant-specific P-T limits or PTLR submittal:

Each applicant referencing this LTR shall confirm that, in addition to the requirements in the ASME Code, Section XI, Appendix G, the lowest service temperatures for all ferritic RCPB components that are not part of the RPV, are below the lowest operating temperature in the proposed P-T limits.

LSCS, Units 1 and 2 have confirmed the lowest service temperatures for all ferritic RCPB components that are not part of the RPV, are below the lowest operating temperature in the proposed P-T limits. This confirmation has been included in Section 4.0, "Operating Limits," of the LSCS, Units 1 and 2 PTLR.

4.0 REGULATORY EVALUATION

4.1 Applicable Regulatory Requirements/Criteria

The NRC has established requirements in 10 CFR 50, Appendix G, "Fracture Toughness Requirements," in order to protect the integrity of the reactor coolant pressure boundary in nuclear power plants. Appendix G requires that the pressure and temperature limits for an operating light-water nuclear reactor be at least as conservative as those that would be generated if the methods and margins of safety of Appendix G to Section XI of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code were used to generate the pressure and temperature limits. Also, Appendix G requires that applicable surveillance data from reactor pressure vessel material surveillance programs be incorporated into the calculations of plant-specific pressure and temperature limits, and that the pressure and temperature limits for operating reactors be generated using a method that accounts for the effects of neutron irradiation on the material properties of the RPV beltline materials.

Appendix H to 10 CFR Part 50 provides requirements related to facility reactor pressure vessel material surveillance programs. LSCS, Units 1 and 2 demonstrates its compliance with the requirements of 10 CFR 50, Appendix H, through participation in the BWRVIP Integrated Surveillance Program (ISP) and the latest material information was utilized in preparation of the report.

Regulatory Guide (RG) 1.99, Revision 2, "Radiation Embrittlement of Reactor Vessel Materials," contains methodologies for determining the increase in transition temperature and the decrease in upper-shelf energy resulting from neutron radiation.

10 CFR 50.36, "Technical specifications," provides the regulatory requirements for the content required in the TSs which includes limiting conditions for operation (LCOs), surveillance requirements and administrative controls. Previously the plant-specific pressure and temperature limits had been incorporated into the TS and controls were placed on operation and testing by the associated specification. This proposed change revises the TS to relocate the pressure and temperature limit curves to a licensee-controlled document in accordance with the guidance of Generic Letter 96-03, "Relocation of the Pressure Temperature Limit Curves and Low Temperature Overpressure Protection System Limits" and TSTF-419-A, "Revise PTLR Definition and References in ISTS 5.6.6, RCS PTLR."

LSCS, Units 1 and 2 have determined that the proposed change does not require any exemptions or relief from regulatory requirements, other than the TS, and does not affect

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conformance with the intent of any of the General Design Criteria (GDC) differently than described in the Safety Analysis Report.

4.2 Precedent

The NRC has approved similar license amendments to relocate P-T limit curves to a PTLR. Recent examples for boiling water reactor plants include:

1. Brunswick Steam Electric Plant, Unit Nos. 1 and 2, License Amendment Nos. 289 and 317 issued by NRC letter dated April 22, 2019, ADAMS Accession No. ML19035A006.
2. Edwin I. Hatch Nuclear Plant, Unit Nos. 1 and 2, License Amendment Nos. 277 and 221 issued by NRC letter dated March 23, 2016, ADAMS Accession No. ML16062A099.
3. Limerick Generating Station, Units 1 and 2, License Amendment Nos 253 and 215 issued by NRC letter dated September 28, 2021, ADAMS Accession No. ML21181A044.

4.3 Variations

There is one variation between the content in TSTF-419-A and this application. Specifically, the PTLR definition in the TSTF and versions of the Standard Technical Specifications use the phrase "unit specific" to describe the report. However, the vendor-supplied report for LSCS has both units contained within one report. To prevent confusion and maintain alignment with how this definition is applied in the precedent relied on in this application, LSCS is removing the phrase "unit specific" from the PTLR definition in the LSCS TS. Even if future PTLRs are unit specific, this would not necessitate a change to the definition to remain compliant with this new definition.

4.4 No Significant Hazards Consideration

Constellation Energy Generation, LLC (CEG) has evaluated whether or not a significant hazards consideration is involved with the proposed amendment by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment," as discussed below.

1. Do the proposed changes involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No

The proposed license amendment adopts the NRC approved methodology described in Boiling Water Reactor Owner's Group (BWROG) Licensing Topical Report (LTR) BWROG-TP-11-022-A, Revision 1 (Structural Integrity Associates, Inc. Report SIR-05-044), "Pressure-Temperature Limits Report Methodology for Boiling Water Reactors," dated August 2013. The LSCS, Units 1 and 2 PTLR was developed based on the methodology and template provided in the BWROG LTR.

10 CFR 50, Appendix G, establishes requirements to protect the integrity of the reactor coolant pressure boundary (RCPB) in nuclear power plants.

Implementing this NRC approved methodology does not reduce the ability to protect the reactor coolant pressure boundary as specified in Appendix G, nor will this change increase the probability of malfunction of plant equipment, or the failure of plant structures, systems, or components. Incorporation of the new methodology for calculating pressure and temperature limit curves, and the relocation of the pressure and

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temperature limit curves from the TS to the PTLR provides an equivalent level of assurance that the reactor coolant pressure boundary is capable of performing its intended safety functions.

The proposed changes do not adversely affect accident initiators or precursors, and do not alter the design assumptions, conditions, or configuration of the plant or the manner in which the plant is operated and maintained. The ability of structures, systems, and components to perform their intended safety functions is not altered or prevented by the proposed changes, and the assumptions used in determining the radiological consequences of previously evaluated accidents are not affected.

Therefore, the proposed changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Do the proposed changes create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No

Creation of the possibility of a new or different kind of accident requires creating one or more new accident precursors. New accident precursors may be created by modifications of plant configuration, including changes in allowable modes of operation.

The change in methodology for calculating pressure and temperature limits and the relocation of those limits to the PTLR do not alter or involve any design basis accident initiators. Reactor coolant pressure boundary integrity will continue to be maintained in accordance with 10 CFR 50, Appendix G, and the assumed accident performance of plant structures, systems and components will not be affected. The proposed changes do not involve a physical alteration of the plant (i.e., no new or different type of equipment will be installed), and the installed equipment is not being operated in a new or different manner.

Therefore, the proposed changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Do the proposed changes involve a significant reduction in a margin of safety?

Response: No

The proposed changes do not affect the function of the reactor coolant pressure boundary or its response during plant transients. Calculating the LSCS, Units 1 and 2 pressure temperature limits using the NRC-approved methodology ensures adequate margins of safety relating to reactor coolant pressure boundary integrity are maintained. The proposed changes do not alter the manner in which the Limiting Conditions for Operation pressure and temperature limits for the reactor coolant pressure boundary are determined. There are no changes to the setpoints at which protective actions are initiated, and the operability requirements for equipment assumed to operate for accident mitigation are not affected.

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Therefore, the proposed changes do not involve a significant reduction in a margin of safety.

Based on the above evaluation, CEG concludes that the proposed amendment presents no significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and accordingly, a finding of no significant hazards consideration is justified.

4.5 Conclusions

In conclusion, based on the considerations discussed above, (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 the health and safety of the public.

5.0 ENVIRONMENTAL CONSIDERATION

CEG has determined that the proposed amendment would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, "Standards for Protection Against Radiation." However, the proposed amendment does not involve: (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluent that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22, "Criterion for categorical exclusion; identification of licensing and regulatory actions eligible for categorical exclusion or otherwise not requiring environmental review," paragraph (c)(9).

Therefore, pursuant to 10 CFR 51.22, paragraph (b), no environmental impact statement or environmental assessment needs to be prepared in connection with the proposed amendment.

6.0 REFERENCES

1. Boiling Water Reactor Owner's Group (BWROG) Licensing Topical Report (LTR) BWROG-TP-11-022-A, Revision 1 (Structural Integrity Associates, Inc. Report SIR-05-044, Revision 1-A), "Pressure-Temperature Limits Report Methodology for Boiling Water Reactors," dated August 2013.
2. NRC Regulatory Guide 1.190, "Calculational and Dosimetry Methods for Determining Pressure Vessel Neutron Fluence," dated March 2001.
3. NRC Regulatory Guide 1.99, "Radiation Embrittlement of Reactor Vessel Material," Revision 2, dated May 1988.

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4. NRC Generic Letter 96-03, "Relocation of the Pressure Temperature Limit Curves and Low Temperature Overpressure Protection System Limits," dated January 31, 1996.
5. Letter from Sher Bahadur (NRC) to Frederick Schiffley (BWROG), "Final Safety Evaluation for Boiling Water Reactor Owners' Group Topical Report BWROG-TP-11-022, Revision 1, November 2011, "Pressure-Temperature Limits Report Methodology for Boiling Water Reactors" (TAC No. ME7649)," dated May 16, 2013 (ML13107A062).
6. Technical Specification Task Force (TSTF) Traveler TSTF-419-A, "Revise PTLR Definition and References in ISTS 5.6.6, RCS PTLR," dated August 4, 2003.
7. Letter from F. Schiffley (BWROG) to U.S. Nuclear Regulatory Commission Document Control Desk, "Submittal of Boiling Water Reactor Owners' Group Topical report BWROG-TP-11-022-A, Revision 1, "Pressure-Temperature Limits Report Methodology for Boiling Water Reactors" (TAC No. ME7649)," dated September 4, 2013 (ML13277A557).
8. American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel (B&PV) Code, Section XI, Nonmandatory Appendix G, 2007 Edition, 2008 Addenda.
9. Letter From W. Macon (U.S. Nuclear Regulatory Commission) to J. Skolds (Exelon Generation Company, LLC), "LaSalle County Station, Unit 1 and 2 – Issuance of Amendment (TAC NOS. MB7001 and MB7002)," Dated August 13, 2003 (ML031920183).
10. NUREG-2205, "Safety Evaluation Report – Related to the License Renewal of LaSalle County Station, Units 1 and 2 – Docket Nos. 50-373 and 50-374 – Exelon Generation Company, LLC," Dated September 2016 (ML16271A039).

ATTACHMENT 2

Markup of Technical Specification Pages

ATTACHMENT 3

**Markup of Technical Specification Bases Pages
(for information only)**

ATTACHMENT 4

TransWare Enterprises Inc. Affidavits

ATTACHMENT 5

Electric Power Research Institute (EPRI) Affidavit

ATTACHMENT 6

**LaSalle County Generating Station Units 1 and 2 Pressure and Temperature Limits
Report (PTLR) for 54 Effective Full-Power Years (EFPY) (Non-Proprietary)**

ATTACHMENT 7

**BWRVIP-135, Revision 4: BWR Vessel Internals Project Integrated Surveillance Program
(ISP) Data Source Book and Plant Evaluations (Non-Proprietary Version)**

ATTACHMENT 8

LaSalle County Generating Station Unit 1 Fluence Methodology Report," LAS-FLU-001-R010, Rev. 0 (Non-Proprietary Version)

ATTACHMENT 9

LaSalle County Generating Station Unit 2 Fluence Methodology Report," LAS-FLU-001-R008, Rev. 0 (Non-Proprietary Version)

ATTACHMENT 10

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(ISP) Data Source Book and Plant Evaluations (Proprietary Version)**

ATTACHMENT 11

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