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10 CFR 50.90
10 CFR 50.69

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U.S. Nuclear Regulatory Commission
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Calvert Cliffs Nuclear Power Plant, Units 1 and 2
Renewed Facility Operating License Nos. DPR-53 and DPR-69
NRC Docket Nos. 50-317 and 50-318

Clinton Power Station, Unit 1
Renewed Facility Operating License No. NPF-62
NRC Docket No. 50-461

Dresden Nuclear Power Station, Units 2 and 3
Subsequent Renewed Facility Operating License Nos. DPR-19 and DPR-25
NRC Docket Nos. 50-237 and 50-249

James A. FitzPatrick Nuclear Power Plant
Renewed Facility Operating License No. DPR-59
NRC Docket No. 50-333

LaSalle County Station, Units 1 and 2
Renewed Facility Operating License Nos. NPF-11 and NPF-18
NRC Docket Nos. 50-373 and 50-374

Limerick Generating Station, Units 1 and 2
Renewed Facility Operating License Nos. NPF-39 and NPF-85
NRC Docket Nos. 50-352 and 50-353

Nine Mile Point Nuclear Station, Units 1 and 2
Renewed Facility Operating License Nos. DPR-63 and NPF-69
NRC Docket Nos. 50-220 and 50-410

Peach Bottom Atomic Power Station, Units 2 and 3
Subsequent Renewed Facility Operating License Nos. DPR-44 and DPR-56
NRC Docket Nos. 50-277 and 50-278

Quad Cities Nuclear Power Station, Units 1 and 2
Renewed Facility Operating License Nos. DPR-29 and DPR-30
NRC Docket Nos. 50-254 and 50-265

R. E. Ginna Nuclear Power Plant
Renewed Facility Operating License No. DPR-18
NRC Docket No. 50-244

Subject: License Amendment Request to Incorporate Enhanced Passive Categorization Methodology for 50.69 Implementation

Reference: Safety Evaluation for Electric Power Research Institute Technical Report No. 3002025288, Enhanced Risk-Informed Categorization Methodology for Pressure Boundary Components, July 15, 2025 (ADAMS Accession No. ML25168A015).

In accordance with 10 CFR 50.90, "Application for amendment of license, construction permit, or early site permit," Constellation Energy Generation, LLC (CEG) is submitting a request for an amendment to the license at Calvert Cliffs Nuclear Power Plant, Units 1 and 2; Clinton Power Station; Dresden Nuclear Power Station, Units 2 and 3; James A. FitzPatrick Nuclear Power Plant; LaSalle County Station, Units 1 and 2; Limerick Generating Station, Units 1 and 2; Nine Mile Point Nuclear Station, Units 1 and 2; Peach Bottom Atomic Power Station, Units 2 and 3; Quad Cities Nuclear Power Station, Units 1 and 2; and R. E. Ginna Nuclear Power Plant.

The proposed change would revise the license condition associated with the adoption of 10 CFR 50.69, "Risk-informed categorization and treatment of structures, systems and components for nuclear power reactors," that was added to the licenses upon issuance of amendments for its use. Specifically, the proposed change would incorporate use of the Enhanced Risk-Informed Categorization Methodology for Pressure Boundary Components.

On July 15, 2025, the Nuclear Regulatory Commission (NRC) issued a Safety Evaluation for Electric Power Research Institute (EPRI) Technical Report (TR) No. 3002025288, "Enhanced Risk-Informed Categorization Methodology for Pressure Boundary Components" (ADAMS Accession No. ML25168A015). In its evaluation, the NRC concluded that the methodology outlined in Chapter 4 of the approved version of EPRI TR 3002025288 is acceptable for use in a licensee's 10 CFR 50.69 categorization process.

Following that determination, EPRI published TR 3002033536 (Revision 1-A) in August 2025 and submitted it to the NRC. This version incorporates technical updates based on supplemental information provided during the NRC's review of TR 3002025288. The NRC confirmed that the methodology and supporting technical basis in TR 3002033536 are consistent with the content previously reviewed and that the conclusions of the Safety Evaluation remain applicable. Accordingly, EPRI TR 3002033536 (Revision 1-A) is designated as the approved "-A" version of the report and is acceptable for use in plant-specific licensing action requests (ADAMS Accession No. ML25202A131).

Attachment 1 provides a description and assessment of the proposed changes. Attachment 2 provides marked-up pages of the license, showing the proposed revisions. Attachment 3 summarizes the review of key assumptions and sources of uncertainty in the context of this application. Attachment 4 provides the disposition of open peer review findings relevant to this application.

CEG has concluded that the proposed changes present no significant hazards consideration under the standards set forth in 10 CFR 50.92, "Issuance of amendment."

The proposed changes have been reviewed by each station's Plant Operations Review Committee in accordance with the requirements of the CEG Quality Assurance Program.

This amendment request contains no new regulatory commitments.

Upon NRC approval, the amendments shall be implemented within 90 days of issuance.

In accordance with 10 CFR 50.91, "Notice for public comment; State consultation," paragraph (b), CEG is notifying the States of Illinois, Maryland, New York and Pennsylvania of this application for license amendment by transmitting a copy of this letter and its attachments to the designated State Official.

Should you have any questions concerning this letter, please contact Jesse Brown, at (267) 533-6355.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 8th day of October, 2026.

Respectfully,

Knowles, Digitally signed by
Justin W Knowles, Justin W
Date: 2026.10.08
13:36:21 -04'00'

Justin W. Knowles
Sr. Manager - Licensing
Constellation Energy Generation, LLC

Attachment(s):

1. Evaluation of Proposed Changes
2. Facility Operating License Mark-Up Pages
3. Disposition of Key Assumptions/Sources of Uncertainty
4. Disposition and Resolution of Open Peer Review Findings

cc: Regional Administrator - NRC Region I
Regional Administrator - NRC Region III
NRC Senior Resident Inspector - Calvert Cliffs Nuclear Power Plant
NRC Senior Resident Inspector - Clinton Power Station
NRC Senior Resident Inspector - Dresden Nuclear Power Station
NRC Senior Resident Inspector - James A. FitzPatrick Nuclear Power Plant
NRC Senior Resident Inspector - LaSalle County Station
NRC Senior Resident Inspector - Limerick Generating Station
NRC Senior Resident Inspector - Nine Mile Point Nuclear Station
NRC Senior Resident Inspector - Peach Bottom Atomic Power Station

NRC Senior Resident Inspector - Quad Cities Nuclear Power Station
NRC Senior Resident Inspector - R. E. Ginna Nuclear Power Plant
NRC Project Manager, NRR - Calvert Cliffs Nuclear Power Plant
NRC Project Manager, NRR - Clinton Power Station
NRC Project Manager, NRR - Dresden Nuclear Power Station
NRC Project Manager, NRR - James A. FitzPatrick Nuclear Power Plant
NRC Project Manager, NRR - LaSalle County Station
NRC Project Manager, NRR - Limerick Generating Station
NRC Project Manager, NRR - Nine Mile Point Nuclear Station
NRC Project Manager, NRR – Peach Bottom Atomic Power Station
NRC Project Manager, NRR - Quad Cities Nuclear Power Station
NRC Project Manager, NRR - R. E. Ginna Nuclear Power Plant
Adnan Khayyat, CNO, IEMA-OHS
Steven Reynolds, IEMA-OHS
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Bridget Frymire, NYSPSC
Andrew Kincaid, NYSPSC

ATTACHMENT 1
EVALUATION OF PROPOSED CHANGES
License Amendment Request

Subject: License Amendment Request to Incorporate Enhanced Passive Categorization Methodology for 50.69 Implementation

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1.0 **SUMMARY DESCRIPTION**

In accordance with 10 CFR 50.69, and 10 CFR 50.90, "Application for amendment of license, construction permit, or early site permit," Constellation Energy Generation, LLC (CEG) is submitting requests for amendments to the 10 CFR 50.69 license condition at Calvert Cliffs Nuclear Power Plant, Units 1 and 2; Clinton Power Station; Dresden Nuclear Power Station, Units 2 and 3; James A. FitzPatrick Nuclear Power Plant; LaSalle County Station, Units 1 and 2; Limerick Generating Station, Units 1 and 2; Nine Mile Point Nuclear Station, Units 1 and 2; Peach Bottom Atomic Power Station, Units 2 and 3; Quad Cities Nuclear Power Station, Units 1 and 2; and R. E. Ginna Nuclear Power Plant.

The proposed change would revise the license condition associated with the adoption of Title 10 of the Code of Federal Regulations (10 CFR), Section 50.69, "Risk-informed categorization and treatment of structures, systems and components for nuclear power reactors," which was added to the license through amendments as shown in Table 1 below. Specifically, the proposed change would incorporate use of the Enhanced Risk-Informed Categorization Methodology for Pressure Boundary Components as described in Electric Power Research Institute (EPRI) Technical Report (TR) No. 3002033536 (Revision 1-A), and replace the previously utilized Arkansas Nuclear One, Unit 2 (ANO-2) passive categorization approach.

Table 1
Plants and Associated 10 CFR 50.69 Amendments

Plant/Unit(s)	Amendment Number	Issuance Reference	Application Reference
Calvert Cliffs Nuclear Power Plant, Unit 1	332	1.a	11.a
Calvert Cliffs Nuclear Power Plant, Unit 2	310	1.a	11.a
Clinton Power Station, Unit 1	237	1.b	11.b
Dresden Nuclear Power Station, Unit 2	287	1.c	11.c
Dresden Nuclear Power Station, Unit 3	280	1.c	11.c
James A. FitzPatrick Nuclear Power Plant	352	1.d	11.d
LaSalle County Station, Unit 1	249	1.e	11.e
LaSalle County Station, Unit 2	235	1.e	11.e
Limerick Generating Station, Unit 1	230 261	1.f 1.l	11.f 11.l
Limerick Generating Station, Unit 2	193 223	1.f 1.l	11.f 11.l
Nine Mile Point Nuclear Station, Unit 1	251	1.g	11.g
Nine Mile Point Nuclear Station, Unit 2	183	1.h	11.h
Peach Bottom Atomic Power Station, Unit 2	321	1.i	11.i
Peach Bottom Atomic Power Station, Unit 3	324	1.i	11.i
Quad Cities Nuclear Power Station, Unit 1	301	1.j	11.j

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Plant/Unit(s)	Amendment Number	Issuance Reference	Submittal Reference
Quad Cities Nuclear Power Station, Unit 2	297	1.j	11.j
R.E. Ginna Nuclear Power Plant	151	1.k	11.k

On July 15, 2025, the Nuclear Regulatory Commission (NRC) issued a Safety Evaluation (Reference 2) for EPRI TR 3002025288, "Enhanced Risk-Informed Categorization Methodology for Pressure Boundary Components" (Reference 10). In its evaluation, the NRC concluded that the methodology detailed in Chapter 4 of the approved version of EPRI TR 3002025288 is acceptable for use in a licensee's 10 CFR 50.69 categorization process.

Following that determination, EPRI published TR 3002033536 (Revision 1-A) in August 2025 and submitted it to the NRC. This version incorporates technical updates based on supplemental information provided during the NRC's review of TR 3002025288. The NRC confirmed that the methodology and supporting technical basis in TR 3002033536 are consistent with the content previously reviewed and that the conclusions of the Safety Evaluation remain applicable. Accordingly, EPRI TR 3002033536 (Revision 1-A) is designated as the approved "-A" version of the report and is acceptable for use in plant-specific licensing action requests (Reference 3). Therefore, CEG proposes its use in performing 10 CFR 50.69 risk-informed categorization at the plants in Table 1.

Furthermore, the license condition for R.E. Ginna Nuclear Power Plant (Ginna) established by Amendment 151 included implementation requirements that were to be completed prior to initiating 10 CFR 50.69 categorization at Ginna. CEG has completed these implementation items. Accordingly, CEG proposes to remove these completed items from the Ginna license condition.

2.0 DETAILED DESCRIPTION

2.1 CURRENT REGULATORY REQUIREMENTS

The provisions of 10 CFR 50.69 allow adjustment of the scope of structures, systems, and components (SSCs) subject to special treatment requirements. Special treatment refers to those requirements that provide increased assurance beyond normal industry practices that SSCs perform their design basis functions. For SSCs categorized as low safety significance (LSS), alternative treatment requirements may be implemented in accordance with the regulation. For SSCs determined to be of high safety significance (HSS), the requirements may not be changed.

The regulation in 10 CFR 50.69 contains requirements regarding how a licensee categorizes SSCs using a risk-informed process, adjusts treatment requirements consistent with the relative significance of the SSC, and manages the process over the lifetime of the plant. A risk-informed categorization process is employed to determine the safety significance of SSCs and place the SSCs into one of four Risk Informed Safety Class (RISC) categories.

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Categorization of SSCs does not allow for the elimination of SSC functional requirements or allow equipment that is required by the deterministic design basis to be removed from the facility. Instead, 10 CFR 50.69 enables licensees to focus their resources on SSCs that make a significant contribution to plant safety. For SSCs that are categorized as HSS, existing treatment requirements are maintained or potentially enhanced. Conversely, for SSCs categorized as LSS that do not significantly contribute to plant safety on an individual basis, the regulation allows an alternative risk-informed approach to treatment that provides a reasonable level of confidence that these SSCs will satisfy functional requirements. Implementation of 10 CFR 50.69 allows licensees to improve their focus on HSS equipment.

As outlined in Table 1, the NRC issued amendments to the operating licenses, adding a license condition to authorize implementation of 10 CFR 50.69. Consistent with the guidance in Nuclear Energy Institute (NEI) 00-04 (Reference 4), as endorsed by Regulatory Guide (RG) 1.201, Revision 1 (Reference 5), the existing categorization process uses probabilistic risk assessment (PRA) models to assess risk from internal events, including internal flooding, and internal fire.

To assess seismic risk, Limerick may use either the EPRI alternative seismic approach Tier 2 or the seismic margin analysis (SMA); Dresden relies on a seismic PRA; Peach Bottom uses SMA; Calvert Cliffs, Clinton, Ginna, Nine Mile Point Units 1 and 2, and Quad Cities use EPRI alternative seismic approach Tier 1; and LaSalle and Fitzpatrick use EPRI alternative seismic approach Tier 2. External hazards are evaluated using the Individual Plant Examination of External Events (IPEEE) screening process. Shutdown risk is assessed using the qualitative defense-in-depth shutdown model. Passive component risk is currently evaluated using the Arkansas Nuclear One, Unit 2 (ANO-2) passive categorization methodology.

2.2 REASON FOR PROPOSED CHANGE

The process defined in NEI 00-04 requires that all functions supported by the SSCs be categorized. With respect to categorization of SSCs having only a pressure-retaining function or the pressure-retaining function of active components, NEI 00-04 recommends using the process in American Society of Mechanical Engineers (ASME) Code Case N-660, "Risk-Informed Safety Classification for Use in Risk-Informed Repair/Replacement Activities" (Reference 6). However, industry experience has shown that the ASME Code Case N-660 process is impractical for routine application, prompting the need for additional guidance. In response, ANO-2 volunteered as a pilot plant to demonstrate an updated methodology for categorizing pressure boundary components, referred to as the Risk-Informed Repair/Replacement Activities (RI-RRA) methodology (References 7 and 8). This approach assumes a component failure probability of 1.0 and evaluates the consequences of failure. It also incorporates deterministic considerations, such as defense-in-depth and safety margins, consistent with the principles of risk-informed decision-making, to determine the final safety significance of the component. The NRC initially approved the ANO-2 methodology for use in 10 CFR 50.69 applications in the Safety Evaluation issued for Vogtle Units 1 and 2 on December 17, 2014 (Reference 9).

As the industry gained experience with the ANO-2 methodology, concerns emerged regarding its conservatism and resource intensity. In response, EPRI initiated an effort to evaluate the methodology and identify opportunities for improvement. This effort included a detailed assessment of the existing process to determine whether certain steps were overly complex or time-consuming relative to the insights gained. The review also considered whether

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enhancements could be achieved through improved guidance or training, or whether modifications to the methodology itself were warranted. Based on the findings, EPRI developed an enhanced and streamlined methodology for categorizing pressure boundary components. This enhanced approach offers several advantages over the ANO-2 method, including a more robust and stable process defined by clear prerequisites and a predetermined list of HSS systems and subsystems.

The enhanced passive methodology was submitted to the NRC as EPRI TR No. 3002025288 (Reference 10). Following an NRC audit and review of supplemental responses to RAIs, the NRC approved the enhanced passive categorization methodology, as documented in the Safety Evaluation issued on July 15, 2025 (Reference 2). The NRC's review and approval focused specifically on the methodology described in Chapter 4 of EPRI TR 3002025288, as supplemented. EPRI TR 3002033536 (Revision 1-A), issued in August 2025 (Reference 3), incorporates technical updates based on supplemental information provided during the NRC's review. As EPRI TR 3002033536 represents the NRC-approved version of the methodology, CEG proposes its use in performing 10 CFR 50.69 risk-informed categorization at the plants listed in Table 1.

Regulatory Guide (RG) 1.201, Revision 1, endorses NEI 00-04, Revision 0, which references ASME Code Case N-660 as an approach for addressing the pressure-retaining function (also referred to as passive or pressure boundary components) or passive function of active components. RG 1.201 also allows for alternative methodologies to be submitted for NRC review and approval as part of a specific 10 CFR 50.69 application. Furthermore, RG 1.201 states that the NRC may impose a license condition to explicitly define the scope of PRA and non-PRA methods used in the categorization process. Consistent with this guidance, the NRC imposed a license condition on plants listed in Table 1 requiring use of the ANO-2 passive categorization methodology.

Since CEG desires to change the categorization approach specified in the licenses for assessing passive component risk (i.e., to allow use of the EPRI Enhanced Risk-Informed Categorization Methodology for Pressure Boundary Components in Reference 3), NRC approval for using the new methodology is required pursuant to 10 CFR 50.90, in accordance with the license condition added by amendments listed in Table 1.

2.3 DESCRIPTION OF PROPOSED CHANGE

CEG proposes to revise the 10 CFR 50.69 license condition added to the licenses of plants listed in Table 1. The proposed changes would incorporate the NRC-approved Enhanced Risk-Informed Categorization Methodology for Pressure Boundary Components. In addition, CEG proposes to remove implementation actions for Ginna that were to be completed prior to performing 10 CFR 50.69 categorization. Since these actions for Ginna have been completed, CEG proposes to delete the implementation items from the Ginna license condition.

The following statement is proposed for addition to the license of each plant listed in Table 1. Bold text identifies additions and the bracketed text identifies placeholders for unit-specific amendment numbers and issuance dates. Detailed markups specific to each license are provided in Attachment 2A through 2K.

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In addition, Constellation Energy Generation, LLC is authorized to implement 10 CFR 50.69 using the Enhanced Risk-Informed Categorization Methodology for Pressure Boundary Components, as described in Constellation letter dated [DATE], and as approved in License Amendment No. [XXX] dated [DATE]. This methodology supports categorization of RISC-1, RISC-2, RISC-3, and RISC-4 SSCs by performing a plant-level evaluation of the pressure retention function across all systems, treating the pressure boundary function as a system for 10 CFR 50.69 categorization purposes. Until the plant-level evaluation is completed using the enhanced methodology, the previously approved ANO-2 passive categorization approach remains valid and may be used for categorization of pressure boundary components. Upon completion of the plant-level evaluation using the enhanced methodology, the ANO-2 approach will no longer be used for categorization purposes.

The following implementation condition is proposed for removal from the Ginna license and identified by strikethroughs. A detailed markup is provided in Attachment 2K.

~~Constellation Energy Generation, LLC will complete the implementation items listed in Attachment 7 of Exelon Letter to the NRC dated May 20, 2021, prior to implementation of 10 CFR 50.69. All issues identified in the attachment will be addressed and any associated changes will be made, focused scope peer reviews will be performed on changes that are PRA upgrades as defined in the PRA standard (ASME/ANS RA-Sa-2009, as endorsed by RG 1.200, Revision 2), and any findings will be resolved and reflected in the PRA of record prior to the implementation of 10 CFR 50.69.~~

The paragraph describing the use of the Enhanced Risk-Informed Categorization Methodology for Pressure Boundary Components outlines the proposed requirements for implementing the enhanced passive categorization approach, which is the subject of this license amendment request (LAR). The revised license condition is structured to accommodate SSCs that have already been categorized using the previously approved ANO-2 methodology. These existing categorizations will remain valid upon issuance of the amendment.

The enhanced methodology requires a plant-level evaluation of the pressure-retaining function across all systems, treating the pressure boundary function as a system-level attribute for the purposes of 10 CFR 50.69 categorization. Upon completion of this evaluation, the resulting categorizations will supersede those performed under the ANO-2 approach. The proposed license condition does not permit CEG to select between passive categorization methodologies; rather, it establishes a transition framework in which the ANO-2 approach remains valid only until replaced by categorizations performed using the enhanced methodology.

This structure also allows for the completion of categorization activities that may be in progress at the time the amendment is issued, thereby ensuring continuity and compliance with the license. Once the plant-level evaluation using the enhanced methodology is complete and approved by the Integrated Decision-Making Panel (IDP), the ANO-2 approach will no longer be utilized in the 10 CFR 50.69 categorization process.

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The implementation items at Ginna were completed prior to the implementation of the 10 CFR 50.69 categorization process at Ginna, as required by the license condition. Therefore, it is proposed that the associated text be deleted (stricken through text).

3.0 TECHNICAL EVALUATION

10 CFR 50.69 specifies the information to be provided by a licensee requesting adoption of the regulation. The requirements of 10 CFR 50.69(b)(2) state:

A licensee voluntarily choosing to implement this section shall submit an application for license amendment under § 50.90 that contains the following information:

- (i) A description of the process for categorization of RISC–1, RISC–2, RISC–3 and RISC–4 SSCs.
- (ii) A description of the measures taken to assure that the quality and level of detail of the systematic processes that evaluate the plant for internal and external events during normal operation, low power, and shutdown (including the plant-specific probabilistic risk assessment (PRA), margins-type approaches, or other systematic evaluation techniques used to evaluate severe accident vulnerabilities) are adequate for the categorization of SSCs.
- (iii) Results of the PRA review process conducted to meet § 50.69(c)(1)(i).
- (iv) A description of, and basis for acceptability of, the evaluations to be conducted to satisfy § 50.69(c)(1)(iv). The evaluations must include the effects of common cause interaction susceptibility, and the potential impacts from known degradation mechanisms for both active and passive functions, and address internally and externally initiated events and plant operating modes (e.g., full power and shutdown conditions)

This information was previously provided to the NRC in the application to adopt the provisions of 10 CFR 50.69 at the plants listed in Table 1. The 10 CFR 50.69 categorization process (overall process, including active and passive categorization elements) has been reviewed and approved by the NRC as referenced in Table 1.

In its review and approval of that application, the NRC reviewed the technical adequacy of each plant's internal events PRA models, including internal flooding. The NRC concluded that the quality and level of detail of the PRA models, with completion of the implementation items specified in the license conditions as applicable at each site, were sufficient to support 10 CFR 50.69 categorization of SSCs (Reference 1).

The NRC also reviewed the PRA models' peer-review history as part of the application to adopt the risk-informed completion time (RICT) program for the plants listed in Table 1. The NRC determined that Constellation adequately applied the guidance to establish PRA technical adequacy and the PRA models were acceptable for the RICT program (Reference 19).

Currently, the categorization process of plants listed in Table 1 addresses passive component risk using the ANO-2 methodology. The purpose of this LAR is to revise the approved 10 CFR 50.69 program to allow use of the Enhanced Risk-informed Categorization Methodology

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for Pressure Boundary Components, as described in EPRI TR 3002033536 (Revision 1-A). Therefore, the remainder of this technical evaluation is focused on describing and evaluating the passive categorization process in accordance with the NRC-approved methodology.

3.1 CATEGORIZATION PROCESS DESCRIPTION (10 CFR 50.69(b)(2)(i))

Integration of the Enhanced Passive Methodology with the Existing Categorization Process

For the purposes of 10 CFR 50.69 categorization, passive components are defined as those that perform a pressure-retaining function. Under the proposed change, passive components, and the passive function of active components, will be evaluated in accordance with EPRI TR 3002033536, "Enhanced Risk-Informed Categorization Methodology for Pressure Boundary Components (Revision 1-A)" (Reference 3).

The enhanced methodology for passive categorization requires a plant-level evaluation of the pressure retention function across all systems. In this approach, the pressure boundary function is treated as a distinct system for the purposes of 10 CFR 50.69 categorization and alternative treatment. This treatment, where the boundaries for the pressure boundary system are limited to pressure retention, is consistent with both the language of the regulation and the Statement of Considerations for the final rule. This ensures that all safety-significant functions are properly categorized, and that no other important functions escape evaluation or the appropriate assignment of safety significance. As documented in the Safety Evaluation (Reference 2), the NRC concluded that defining the pressure boundary function as a system for 10 CFR 50.69 categorization complies with the requirements in 10 CFR 50.69(c)(1)(v).

When categorizing a system that includes both active and passive (pressure boundary) components, active components (those with non-pressure-retaining functions) must continue to be evaluated using the existing NEI 00-04 process. This ensures that all safety functions are properly identified and categorized with respect to their safety significance. In some cases, a component may have both active and passive functions. For example, the internals of a safety-related valve may be categorized as HSS for active functions, while the valve body is categorized as LSS for passive functions, resulting in the overall SSC being classified as RISC-1. In such cases, alternative treatments (e.g., alternative repair/replacement activities) may be applied to the LSS pressure-retaining function, since the pressure boundary is categorized RISC-3, while special treatments are maintained for the active HSS functions categorized as RISC-1. Alternative treatments can be applied to the RISC-3 valve body and other pressure boundary piece parts regardless of whether the SSCs performing active functions are categorized. This approach to alternative treatment requirements is consistent with 10 CFR 50.69(d).

While a pressure boundary component may be categorized as HSS or LSS under the enhanced methodology, no change to the special treatment of the active function is permitted from its current safety-related treatment. Alternate treatment of an active function would only be allowed if the guidance in NEI 00-04 for active functions were applied and the safety-related active function were categorized as LSS (i.e., RISC-3) in accordance with the current NEI 00-04 approach.

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As described in Section 2.3 of this attachment, the license condition revisions are structured to accommodate SSCs that have already been categorized using the ANO-2 approach. Once the plant-level evaluation of the pressure-retaining function is completed across all systems using the enhanced method, those categorizations will replace those previously performed under the ANO-2 approach. It is not intended that CEG will have the option to choose between passive categorization methodologies. Categorization completed using ANO-2 will remain valid upon issuance of the revised license condition but will be superseded by the categorization performed using the enhanced method once approved by the IDP.

As part of completing the plant-level System Categorization Document (SCD) for the passive system using the enhanced methodology, CEG will compare the new categorization results to those previously completed under the ANO-2 approach. For SSCs that were categorized as LSS under ANO-2 that are categorized as HSS using the enhanced methodology, CEG will evaluate the appropriate course of action. This evaluation may include the restoration of special treatment requirements for SSCs that change from RISC-3 to RISC-1, consistent with Section 11.2 of NEI 00-04, and considering enhanced treatment for SSCs that change from RISC-4 to RISC-2, as warranted. These activities will be guided by the existing feedback and adjustment process described in Section 12 of NEI 00-04, which requires evaluation of the impact of updated risk information on the categorization process results.

Once the plant-level evaluation is completed and approved by the IDP, the ANO-2 approach will no longer be used for 10 CFR 50.69 categorization, consistent with the proposed license condition. CEG will update existing SCDs to remove superseded content related to passive categorization performed under ANO-2. These revisions will eliminate the passive portions of prior evaluations and incorporate other necessary updates. Updates to the SCDs may be performed as part of the periodic review process, consistent with Section 12 of NEI 00-04.

Enhanced Passive Methodology

Passive categorization will continue to follow the applicable guidance in NEI 00-04, supplemented by the steps outlined in Chapter 4 of EPRI TR 3002033536. The enhanced passive methodology contains a defined set of prerequisites, a predetermined set of HSS systems/subsystems, and a plant-specific search to identify additional pressure boundary components to be added to the HSS scope. The process consists of the following five phases:

- Phase 1 – Prerequisites
- Phase 2 – Predetermined HSS passive SSCs
- Phase 3 – Design and plant specific search for HSS passive SSCs
- Phase 4 – Sensitivity study and IDP review and concurrence
- Phase 5 – Performance monitoring

Phase 1 – Prerequisites

1. PRA Technical Adequacy

The plants listed in Table 1 maintain a robust internal events PRA, including internal flooding, that addresses the failure of all pressure boundary components. Additional information related to PRA technical adequacy is provided in Section 3.2. Section 3.3

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addresses the PRA review process, which confirmed the plant's PRA models are of sufficient quality and level of detail to support the categorization process.

Key assumptions and sources of uncertainty associated with the PRA models have been reviewed in the context of this application. The results are summarized in Attachment 3.

2. Integrity Management

- The plants listed in Table 1 implement a robust program to address localized corrosion (e.g., pitting, microbiologically influenced corrosion), following guidance in References 12–16.
- The plants maintain a robust flow-accelerated corrosion (FAC) program aligned with the recommendations in Reference 17.
- Erosion management at the plants aligns with the recommendations in Reference 18.

3. Protection Measures for Internal Flooding Events

Prerequisite 3 addresses protective measures for internal flooding events, such as floor drains, flood alarm equipment, and flood barriers. This prerequisite provides that such protective measures should not be categorized as LSS unless additional evaluations have been conducted to show that loss of these measures, or a subset of them, does not invalidate the HSS determination provided in Section 4.2 of EPRI TR 3002033536. For example, if a submarine door has been credited to prevent a flood from propagating from one flood zone to another, it will be considered HSS unless an evaluation shows that loss of the door will not significantly increase plant risk (i.e., exceed the risk criteria in Criterion 11 of Section 4.2).

4. Reflect the As-Built As-Operated Plant

The plants listed in Table 1 ensure that the PRA model accurately reflects the as-built, as-operated plant by following a process defined in approved station procedures. PRA maintenance and updates are discussed in Section 3.2, and the feedback and adjustment process is addressed in Section 3.5. These processes include periodic reviews of PRA inputs and updates to PRA data.

Phase 2 – Predetermined HSS passive SSCs (Criteria 1 through 10)

Section 4.2 of EPRI 3002033536 defines the scope of systems, subsystems, and piping segments that are to be categorized as HSS. Twelve criteria are used to categorize passive components and their associated supports. SSCs meeting any of Criteria 1 through 10 are categorized as preliminary HSS; those that do not meet any of these criteria are categorized as preliminary LSS. Criteria 1 through 10, along with the HSS criteria considerations in EPRI 3002033536, are used to identify the predetermined HSS passive SSCs.

Phase 3 – Design and plant specific search for HSS passive SSCs (Criteria 11 and 12)

Criterion 11 is uniquely plant-specific and based on quantitative risk metrics from the internal events and internal flooding PRA models. Regardless of initial determinations using Criteria 1

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through 10, each pipe segment must be evaluated against Criterion 11. This involves assessing Core Damage Frequency (CDF), Large Early Release Frequency (LERF), Conditional Core Damage Probability (CCDP), and Conditional Large Early Release Probability (CLERP) metrics. Components exceeding these thresholds are categorized as HSS. This ensures identification of plant-specific outliers based on both risk and consequence.

Criterion 12 provides three options for addressing piping and component supports, including hangers and snubbers: (1) supports may remain uncategorized, (2) if categorized, supports are assigned the same categorization as the highest-ranked piping segment within the piping analytical model in which the support is included, or (3) a combination of restraints or supports such that the LSS piping and associated SSCs attached to the HSS piping are included in the scope up to a boundary point that encompasses at least two supports in each of the three orthogonal directions.

External events are evaluated in accordance with Section 4.3 of EPRI 3002033536. Preliminary HSS/LSS assignments are reviewed and adjusted to reflect the impact of pressure boundary failure on external event mitigation. The purpose of this review is to confirm, and adjust as necessary, that the assignment of HSS/LSS criteria is valid in the context of other hazards (fire, seismic, other hazards).

Phase 4 – Sensitivity study and IDP review and concurrence

The sensitivity study that is conducted as part of the enhanced passive methodology is addressed in Section 3.2.

In addition to the IDP review and approval process outlined in Section 9 of NEI 00-04, the IDP is tasked with confirming that all steps of the enhanced passive categorization methodology have been followed:

- The IDP shall ensure that the prerequisites cited in Section 4.1 are met.
- The IDP shall confirm the assignment of HSS components (from the results of using Criteria 1 through 11, and criterion 12 if and when supports are categorized) is appropriate.
- The IDP shall confirm that the assignment of HSS criteria is valid in the context of other hazards (fire, seismic, other hazards).

Phase 5 – Performance Monitoring

Performance monitoring is addressed in Section 3.5.

3.2 TECHNICAL ADEQUACY EVALUATION (10 CFR 50.69(b)(2)(ii))

Section 3.2 of the associated LARs to adopt 10 CFR 50.69 for the plants listed in Table 1 addressed the quality and level of detail of the systematic processes used to evaluate internal and external events during normal operation, low power, and shutdown. These processes were reviewed and confirmed to be acceptable for performing SSC categorization, as documented in

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the License Amendment and associated Safety Evaluation approving use of 10 CFR 50.69. Those evaluations are not impacted by the changes proposed in this request.

Consistent with Section 3.2.6 of the original LARs to adopt 10 CFR 50.69, CEG ensures that the PRA models used to support risk-informed categorization at the plants listed in Table 1 continue to reflect the as-built, as-operated plant. CEG maintains a process for assessing the impact of plant changes on the PRA models in a timely manner, and no less frequent than once every two refueling outages. If a change is determined to have a significant impact on the PRA model, the affected SSC categorization is reevaluated in accordance with 10 CFR 50.69(e) and the processes described in NEI 00-04.

NEI 00-04 and 10 CFR 50.69 require evaluations that provide reasonable confidence that, for SSCs categorized as candidate LSS, any potential increases in CDF and LERF resulting from changes in treatment are small. PRA uncertainty evaluations were described in Section 3.2.7 of the original LARs to adopt 10 CFR 50.69. In addition to the existing requirement in NEI 00-04, EPRI 3002033536 describes the evaluations necessary to support categorization of the pressure boundary function when implementing the enhanced passive methodology.

Sensitivity studies conducted as part of the enhanced passive categorization methodology will follow the guidance in Section 4.4 of EPRI 3002033536. For pressure boundary components modeled in the internal events or internal flooding PRA and initially determined to be LSS, their failure rates (e.g., pipe break frequency) are increased by a factor of 3. The CDF and LERF values are then recalculated and compared against the quantitative acceptance guidelines in RG 1.174. Pressure boundary components modeled in the full-power internal events or internal flooding PRA that exceed the RG 1.174 acceptance guidelines will be considered candidate HSS, subject to concurrence by the IDP. Conversely, pressure boundary components determined to be LSS per Section 4.2 of EPRI 3002033536, and whose sensitivity study results remain below the RG 1.174 acceptance guidelines, will continue to be categorized as LSS subject to concurrence by the IDP.

3.3 PRA REVIEW PROCESS RESULTS (10 CFR 50.69(b)(2)(iii))

The PRA review process results were previously provided in the LARs to allow the plants listed in Table 1 to implement the risk-informed categorization and treatment provisions of 10 CFR 50.69. The NRC concluded that the PRA models were appropriately peer reviewed in accordance with RG 1.200, and that any associated Facts and Observations (F&Os) were either adequately closed using an NRC-approved process or determined not to impact 10 CFR 50.69 categorization.

Following submittal of the original LARs, CEG has performed periodic model maintenance to ensure that the PRA continues to reflect the as-built, as-operated plant.

Clinton

The Clinton Power Station PRA model has previously been reviewed and approved by the NRC in support of implementation of 10 CFR 50.69 and has been maintained to reflect the as-built, as-operated plant configuration. The open FPIE PRA peer review findings pertain to the potential for under-identification of dependent operator actions due to truncation and the use of nominal HEP values. These findings were previously dispositioned as part of

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the TSTF-505 LAR application and have been determined not to impact the technical adequacy of the PRA for application of the Enhanced Risk-Informed Categorization Methodology for Pressure Boundary Components. Attachment 4 summarizes the disposition of the remaining PRA peer review findings.

Limerick

The Limerick Generating Station PRA model, including updates associated with digital instrumentation and control systems, has been reviewed in accordance with RG 1.200 and is maintained to reflect current plant configuration and operation. The Attachment 4 table summarizes the disposition of open PRA peer review findings, including those associated with digital I&C modeling. These findings have been evaluated and are shown not to impact the technical adequacy of the PRA for application of the Enhanced Risk-Informed Categorization Methodology for Pressure Boundary Components. Attachment 4 discusses the open PRA peer review Findings pertaining to this application.

Peach Bottom

The Peach Bottom Atomic Power Station PRA model has been peer reviewed and updated in accordance with RG 1.200 to support risk-informed applications. Subsequent model maintenance activities have addressed documentation and completeness improvements identified during peer review. The Attachment 4 table summarizes the disposition of open PRA peer review findings and confirms that these findings do not affect the technical adequacy of the PRA for use in the Enhanced Risk-Informed Categorization Methodology for Pressure Boundary Components.

In summary, the PRA models utilized at the plants listed in Table 1 to support implementation of 10 CFR 50.69 have been peer reviewed and remain technically adequate to support the categorization process. The conclusions regarding PRA technical adequacy from the original NRC Safety Evaluation remain valid and are unaffected by changes proposed in this request.

3.4 RISK EVALUATIONS (10 CFR 50.69(b)(2)(iv))

As described in Section 3.1, CEG may implement the Enhanced Risk-Informed Categorization Methodology for Pressure Boundary Components in accordance with EPRI TR 3002033536. Categorizations performed using the processes identified in the current license condition may continue to be used, with the following clarification regarding the ANO-2 approach for assessing passive component risk: as described in the proposed license condition, once the plant-level evaluation is completed in accordance with EPRI 3002033536, the resulting categorizations will supersede those established using ANO-2. The ANO-2 methodology will no longer be used following completion of the plant-level evaluation using the enhanced method.

The overall risk evaluation process described in NEI 00-04 (Reference 4) addresses both known degradation mechanisms and common cause interactions and satisfies the requirements of 10 CFR 50.69(b)(2)(iv). Sensitivity studies, as discussed in Section 8 of NEI 00-04 and Section 4.4 of EPRI 3002033536, will be used to confirm that the categorization process results in acceptably small increases in CDF and LERF.

The SSC failure rates and initiating event frequencies used in the Table 1 plants' PRA include the quantifiable impacts from known degradation mechanisms, as well as other mechanisms

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(e.g., design errors, manufacturing deficiencies, human errors, etc.). Subsequent performance monitoring and PRA updates, as required by 10 CFR 50.69, will continue to include this data and provide timely insights into the need to account for any important new degradation mechanisms.

3.5 FEEDBACK AND ADJUSTMENT PROCESS

PRA maintenance and updates were described in the LAR supporting implementation of the risk-informed categorization and treatment provisions of 10 CFR 50.69 at the plants listed in Table 1. The process includes evaluating significant changes to the plant's risk profile, or if a RISC-3 or RISC-4 SSC could or did prevent a safety-significant function from being satisfied. Assessments of potential equipment performance changes and new technical information are conducted during the regularly scheduled periodic review cycle. In addition to these scheduled reviews, if the PRA model or other risk information is upgraded, a review of the affected SSC categorization is performed.

The operational programs required by the Enhanced Passive Risk-Informed Categorization Methodology for Pressure Boundary Components provide robust performance monitoring of passive SSCs susceptible to localized corrosion, including flow-accelerated corrosion (FAC) and erosion. The plant's performance monitoring process is designed to detect changes in component performance, ensuring that potential increases in failure rates of categorized components are identified and addressed before they exceed the rates assumed in the sensitivity study. Because passive components typically exhibit low failure rates, even a single failure event can significantly alter the failure frequency for a specific type of piping, potentially exceeding acceptable guidelines for that subset of components. This underscores the importance of maintaining robust integrity management programs, as required by Prerequisite 2 of EPRI 3002033536 and 10 CFR 50.69(e). If any of these integrity management programs are discontinued or modified in such a way that Prerequisite 2 is no longer satisfied, the enhanced passive categorization methodology will no longer be applied. Any future changes to these integrity management programs must be evaluated under 10 CFR 50.69(e) to ensure continued compliance with the methodology.

Consistent with 10 CFR 50.69(e), CEG is required to review changes to the plant, operational practices, applicable plant and industry operational experience, and as appropriate, update the PRA and SSC categorization and treatment processes. This requirement applies equally to the implementation and maintenance of integrity management programs.

4.0 REGULATORY EVALUATION

4.1 APPLICABLE REGULATORY REQUIREMENTS/CRITERIA

The following NRC requirements and guidance documents are applicable to the proposed change:

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- 10 CFR 50.69, "Risk-informed categorization and treatment of structures, systems and components for nuclear power reactors"
- Regulatory Guide 1.201, "Guidelines for Categorizing Structures, Systems, and Components in Nuclear Power Plants According to their Safety Significance," Revision 1, May 2006
- Regulatory Guide 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis," Revision 3, January 2018
- Regulatory Guide 1.200, "Acceptability of Probabilistic Risk Assessment Results for Risk-Informed Activities," Revision 3, December 2020

The Enhanced Risk-Informed Categorization Methodology for Pressure Boundary Components is consistent with the applicable requirements of 10 CFR 50.69. The NRC determined that SSC categorizations performed using the enhanced passive methodology are consistent with the principles of risk-informed decision-making in RG 1.174, Revision 3.

The NRC concluded that categorization of passive, pressure-retaining components in accordance with the methodology described in Chapter 4 of the approved version of EPRI TR 3002025288 is acceptable for use as part of a licensee's 10 CFR 50.69 categorization process. These conclusions were documented in the NRC's Safety Evaluation issued on July 15, 2025 (Reference 2). EPRI TR 3002033536 (Revision 1-A), which incorporates supplemental information and technical updates, represents the NRC-approved version of the methodology (Reference 3).

Therefore, the proposed change is consistent with the applicable regulations and regulatory guidance.

4.2 NO SIGNIFICANT HAZARDS CONSIDERATION

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 the following Licenses:

Calvert Cliffs Nuclear Power Plant, Units 1 and 2
Renewed Facility Operating License Nos. DPR-53 and DPR-69

Clinton Power Station, Unit 1
Renewed Facility Operating License No. NPF-62

Dresden Nuclear Power Station, Units 2 and 3
Subsequent Renewed Facility Operating License Nos. DPR-19 and DPR-25

James A. FitzPatrick Nuclear Power Plant
Renewed Facility Operating License No. DPR-59

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LaSalle County Station, Units 1 and 2
Renewed Facility Operating License Nos. NPF-11 and NPF-18

Limerick Generating Station, Units 1 and 2
Renewed Facility Operating License Nos. NPF-39 and NPF-85

Nine Mile Point Nuclear Station, Units 1 and 2
Renewed Facility Operating License Nos. DPR-63 and NPF-69

Peach Bottom Atomic Power Station, Units 2 and 3
Subsequent Renewed Facility Operating License Nos. DPR-44 and DPR-56

Quad Cities Nuclear Power Station, Units 1 and 2
Renewed Facility Operating License Nos. DPR-29 and DPR-30

R. E. Ginna Nuclear Power Plant
Renewed Facility Operating License No. DPR-18

The proposed change would revise the license condition associated with the adoption of Title 10 of the Code of Federal Regulations (10 CFR), Section 50.69, "Risk-informed categorization and treatment of structures, systems and components for nuclear power reactors," which was added to each plant license upon the issuance of the amendments to allow implementation. Specifically, the proposed change would revise the license condition for each plant to reflect use of the Enhanced Risk-Informed Categorization Methodology for Pressure Boundary Components in the 10 CFR 50.69 categorization process.

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. Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No.

The proposed change would revise the license condition for each plant that was added with the issuance of the License Amendments to reflect use of the Enhanced Risk-Informed Categorization Methodology for Pressure Boundary Components in the 10 CFR 50.69 categorization process. The approach is described in Electric Power Research Institute (EPRI) Technical Report (TR) 3002033536 (Revision 1-A). With the proposed change, CEG will continue to be permitted to use a risk-informed categorization process to modify the scope of structures, systems and components (SSCs) subject to NRC special treatment requirements and to implement alternative treatments per the regulations. The process used to evaluate SSCs for changes to NRC special treatment requirements and the use of alternative requirements will continue to ensure the ability of the SSCs to perform their design function. The potential change to special treatment requirements using the Enhanced Risk-Informed Categorization Methodology for Pressure Boundary Components does not change the design and

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operation of the SSCs. As a result, the proposed change to revise the 10 CFR 50.69 categorization process to reflect an enhanced methodology does not significantly affect any initiators to accidents previously evaluated or the ability to mitigate any accidents previously evaluated. The consequences of the accidents previously evaluated are not affected because the mitigation functions performed by the SSCs assumed in the safety analysis are not being modified. The SSCs required to safely shut down the reactor and maintain it in a safe shutdown condition following an accident will continue to perform their design functions.

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

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

Response: No.

The proposed change would revise the license condition for each plant that was added with the issuance of the License Amendments to reflect use of the Enhanced Risk-Informed Categorization Methodology for Pressure Boundary Components in the 10 CFR 50.69 categorization process. The change will reflect use of an enhanced approach for evaluating pressure boundary components in the 10 CFR 50.69 categorization process. The approach is described in EPRI 3002033536. With the proposed change, the plants will continue to be permitted to use a risk-informed categorization process to modify the scope of SSCs subject to NRC special treatment requirements and to implement alternative treatments per the regulations. The proposed change does not change the functional requirements, configuration, or method of operation of any SSC. Under the proposed change, no additional plant equipment will be installed.

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

3. Does the proposed change involve a significant reduction in a margin of safety?

Response: No.

The proposed change would revise the license condition for each plant that was added with the issuance of the License Amendments to reflect use of the Enhanced Risk-Informed Categorization Methodology for Pressure Boundary Components in the 10 CFR 50.69 categorization process. The change will reflect use of an enhanced method for evaluating pressure boundary components in the 10 CFR 50.69 categorization process. The approach is described in EPRI 3002033536. With the proposed change, the plants will continue to be permitted to use a risk-informed categorization process to modify the scope of SSCs subject to NRC special treatment requirements and to implement alternative treatments per the regulations. The proposed change does not affect any Safety Limits or alter any specific operating parameters assumed in the design and licensing basis or controlling parameters used to establish the safety margin. The safety margins included in analyses of accidents are not affected by the proposed change. The regulation requires that there be no significant effect on plant risk due to any change to the special treatment requirements for SSCs and that the

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SSCs continue to be capable of performing their design basis functions, as well as to perform any beyond design basis functions consistent with the categorization process and results.

Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Based on the above, CEG concludes that the proposed change does not involve a 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.

4.3 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 to the health and safety of the public.

5.0 ENVIRONMENTAL CONSIDERATIONS

A review has determined the proposed change qualifies for a categorical exclusion from environmental review in accordance with 10 CFR 51.22. The proposed action is an amendment regarding the installation or use of a facility component as described in 10 CFR 51.22(d)(8). The proposed action does not disturb any previously undisturbed ground and there is no significant change in the types or significant increase in the amounts of any effluents that may be released offsite, does not result in a significant increase in individual or cumulative public or occupational radiation exposure, and does not result in a significant increase in the potential for or consequences from radiological accidents. Therefore, pursuant to 10 CFR 51.22, neither an environmental assessment nor an environmental impact statement is required.

6.0 REFERENCES

1. Issuances of 50.69 Amendments:
 - a. NRC Letter to Exelon, "Calvert Cliffs Nuclear Power Plant, Units 1 and 2 - Issuance of Amendment Nos. 332 and 310 Re: Risk-Informed Categorization and Treatment of Structures, Systems and Components for Nuclear Power Reactors," dated February 28, 2020 (ML19330D909)
 - b. NRC Letter to Exelon, "Clinton Power Station, Unit No. 1 - Issuance of Amendment No. 237 Regarding Adoption of 10 CFR 50.69, 'Risk-Informed Categorization and Treatment of Structures, Systems and Components of Nuclear Power Reactors'," dated May 19, 2021 (ML21090A193)
 - c. NRC letter to Constellation, "Dresden Nuclear Power Station, Units 2 and 3 -

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- Issuance of Amendment Nos. 287 and 280 Re: Adoption of 10 CFR 50.69, 'Risk-Informed Categorization and Treatment of Structures, Systems and Components of Nuclear Power Reactors'," dated August 7, 2025 (ML25213A180)
- d. NRC letter to Constellation, "James A. Fitzpatrick Nuclear Power Plant - Issuance of Amendment No. 352 Re: Adoption of 10 CFR 50.69 'Risk-Informed Categorization and Treatment of Structures, Systems and Components of Nuclear Power Reactors'," dated August 23, 2022 (ML22196A061)
 - e. NRC Letter to Exelon, "LaSalle County Station, Unit Nos. 1 and 2 - Issuance of Amendment Nos. 249 and 235 to Adopt 10 CFR 50.69, 'Risk-Informed Categorization and Treatment of Structures, Systems and Components of Nuclear Power Reactors'," dated May 27, 2021 (ML21082A422)
 - f. NRC Letter to Exelon, "Limerick Generating Station, Units 1 and 2 - Issuance of Amendment Nos. 230 and 193 to Adopt 10 CFR 50.69, 'Risk-Informed Categorization and Treatment of Structures, Systems and Components of Nuclear Power Reactors'," dated July 31, 2018 (ML18165A162)
 - g. NRC letter to Constellation, "Nine Mile Point Nuclear Station, Unit 1 - Issuance of Amendment No. 251 Regarding the Adoption of Title 10 of the Code of Federal Regulations Section 50.69, 'Risk-Informed Categorization and Treatment of Structures, Systems and Components of Nuclear Power Reactors'," dated December 7, 2023 (ML23291A464)
 - h. NRC Letter to Exelon, "Nine Mile Point Nuclear Station, Unit 2 - Issuance of Amendment No. 183 Regarding Risk-Informed Categorization and Treatment of Structures, Systems and Components," dated January 29, 2021 (ML20332A115)
 - i. NRC Letter to Exelon, "Peach Bottom Atomic Power Station, Units 2 and 3 - Issuance of Amendment Nos. 321 and 324 to Adopt 10 CFR 50.69, 'Risk-Informed Categorization and Treatment of Structures, Systems and Components of Nuclear Power Reactors'," dated October 25, 2018 (ML18263A232)
 - j. NRC letter to Constellation, "Quad Cities Nuclear Power Station, Units 1 and 2 - Issuance of Amendment Nos. 301 and 297 Re: Adoption of 10 CFR 50.69, 'Risk-Informed Categorization and Treatment of Structures, Systems and Components of Nuclear Power Reactors'," dated July 3, 2024 (ML24162A098)
 - k. NRC letter to Constellation, "R. E. Ginna Nuclear Power Plant - Issuance of Amendment No. 151 Re: Adopt 10 CFR 50.69, 'Risk-Informed Categorization and Treatment of Structures, Systems and Components of Nuclear Power Reactors'," dated June 22, 2022 (ML22094A107)
 - l. NRC letter to Constellation, "Limerick Generating Station, Units 1 and 2 – Issuance of Amendment Nos 261 and 223 Re: Alternative Seismic Approach for Risk-Informed Categorization and Treatment of Structures, Systems and Components for Nuclear Power Reactors and Denial of Proposed Alternative Defense-in-Depth and Pressure Boundary Component Categorization Process," dated May 17, 2023 (ML23089A124 and ML23094A171)
2. Safety Evaluation on EPRI Technical Report 3002025288, "Enhanced Risk-Informed Categorization Methodology for Pressure Boundary Components," July 15, 2025 (ML25168A015)

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3. EPRI 2025 Technical Report 3002033536, "Enhanced Risk-Informed Categorization Methodology for Pressure Boundary Components (Revision 1-A)", August 2025 (ML25241A331)
4. Nuclear Energy Institute (NEI) 00-04, "10 CFR 50.69 SSC Categorization Guideline," Revision 0, July 2005 (ML052910035)
5. NRC Regulatory Guide 1.201, "Guidelines for Categorizing Structures, Systems, and Components in Nuclear Power Plants According to their Safety Significance," Revision 1, May 2006 (ML061090627)
6. "Risk-Informed Safety Classification for Use in Risk-Informed Repair/Replacement Activities," Section XI, Division 1, ASME Code Case N-660, American Society of Mechanical Engineers, New York, NY
7. NRC letter to Entergy, "Arkansas Nuclear One, Unit 2 – Approval of Request for Alternative ANO2-R&R-004, Revision 1, Request to Use Risk-Informed Safety Classification and Treatment for Repair/Replacement Activities in Class 2 and 3 Moderate and High Energy Systems," April 22, 2009 (ML090930246)
8. Risk-Informed Repair/Replacement Methodology. EPRI, Palo Alto, CA: 2011. Technical Update 1022945
9. NRC Letter to SNC, "Vogtle Electric Generating Plant, Units 1 and 2 – Issuance of Amendments Re: Use of 10 CFR 50.69," December 17, 2014 (ML14237A034)
10. EPRI 2023 Technical Report 3002025288, "Enhanced Risk-Informed Categorization Methodology for Pressure Boundary Components," June 2023 (ML23234A268); submitted to the NRC for review and approval on August 17, 2023 (ML23234A267); see ML23234A266 for the combined package in ADAMS
11. Applications for 50.69 Amendments:
 - a. Letter from J. Barstow (Calvert Cliffs) to U.S. Nuclear Regulatory Commission, "Application to Adopt 10 CFR 50.69, 'Risk-Informed categorization and treatment of structures, systems, and components for nuclear power reactors'," dated November 28, 2018 (ML18333A022)
 - b. Letter from P. R. Simpson (Clinton) to U.S. Nuclear Regulatory Commission, "Application to Adopt 10 CFR 50.69, 'Risk-informed categorization and treatment'," dated April 30, 2020 (ML20121A241)
 - c. Letter from M. D. Humphrey (Dresden) to U.S. Nuclear Regulatory Commission, "Application to Adopt 10 CFR 50.69, 'Risk-Informed Categorization and Treatment of Structures, Systems, and Components for Nuclear Power Plants'," dated May 28, 2024 (ML24149A261)
 - d. Letter from D. T. Gudger (FitzPatrick) to U.S. Nuclear Regulatory Commission, "Application to Adopt 10 CFR 50.69, 'Risk-informed categorization and treatment of structures, systems and components for nuclear power reactors'," dated July 30, 2021 (ML21211A078)
 - e. Letter from D. Murray (LaSalle) to U.S. Nuclear Regulatory Commission, "Application to Adopt 10 CFR 50.69, 'Risk-informed categorization and treatment of structures, systems, and components for nuclear power reactors'," dated January 31, 2020 (ML20031E699)

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- f. Letter from J. Barstow (Limerick) to U.S. Nuclear Regulatory Commission, "Application to Adopt 10 CFR 50.69, 'Risk-Informed Categorization and Treatment of Structures, Systems, and Components (SSCs) for Nuclear Power Plants'," dated June 28, 2017 (ML17179A161)
 - g. Letter from D. T. Gudger (Nine Mile Point Unit 1) to U.S. Nuclear Regulatory Commission, "Application to Adopt 10 CFR 50.69, 'Risk-informed categorization and treatment of structures, systems and components for nuclear power reactors'," dated December 15, 2022 (ML22349A521)
 - h. Letter from S. Rafferty-Czincila (Nine Mile Point Unit 2) to U.S. Nuclear Regulatory Commission, "Application to Adopt 10 CFR 50.69, 'Risk-informed categorization and treatment of structures, systems and components for nuclear power reactors'," dated December 26, 2019 (ML19360A145)
 - i. Letter from J. Barstow (Peach Bottom) to U.S. Nuclear Regulatory Commission, "Application to Adopt 10 CFR 50.69, 'Risk-informed categorization and treatment of structures, systems, and components for nuclear power reactors'," dated August 30, 2017 (ML17243A014)
 - j. Letter from P. R. Simpson (Quad Cities) to U.S. Nuclear Regulatory Commission, "Application to Adopt 10 CFR 50.69, 'Risk-Informed Categorization and Treatment of Structures, Systems, and Components for Nuclear Power Reactors'," dated June 8, 2023 (ML23159A253)
 - k. Letter from D. T. Gudger (Ginna) to U.S. Nuclear Regulatory Commission, "Application to Adopt 10 CFR 50.69, 'Risk-informed categorization and treatment of structures, systems and components for nuclear power reactors'," May 20, 2021 (ML21141A009)
 - l. Letter from S Rafferty-Czincila (Limerick) to U.S. Nuclear Regulatory Commission, "Application to Implement an Alternate Defense-in-Depth Categorization Process, an Alternate Pressure Boundary Categorization Process, and an Alternate Seismic Tier 1 Categorization Process in Accordance with the Requirements of 10 CFR 50.69, 'Risk-Informed Categorization and Treatment of Structures, Systems and Components for Nuclear Power Reactors'," March 11, 2021 (ML21070A412)
- 12. Service Water System Corrosion and Deposition Sourcebook. EPRI, Palo Alto, CA: 1994. TR-103403
 - 13. Engineering and Design Considerations for Service Water Chemical Addition Systems. EPRI, Palo Alto, CA: 2014. TR-3002003190
 - 14. Guide for the Examination of Service Water System Piping. EPRI, Palo Alto, CA: 1994. TR-102063
 - 15. Service Water Piping Guideline. EPRI, Palo Alto, CA: 2005. TR-1010059
 - 16. Recommendations for an Effective Program to Control the Degradation of Buried and Underground Piping and Tanks (1016456, Revision 2). EPRI, Palo Alto, CA: 2020. TR-3002018352
 - 17. Recommendations for an Effective Flow-Accelerated Corrosion Program (NSAC-202L-R4). EPRI, Palo Alto, CA: 2013. TR-3002000563

Attachment 1
Evaluation of Proposed Change
License Amendment Request to Incorporate Enhanced Passive Categorization Methodology for
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18. Recommendations for an Effective Program Against Erosive Attack: Revision 1. EPRI, Palo Alto, CA: 2023. TR-3002023786

19. Issuances of RICT Amendments

- a. NRC Letter to Exelon, "Calvert Cliffs Nuclear Power Plant, Units 1 and 2 - Issuance of Amendment Nos. 326 and 304 to Add Risk-Informed Completion Time Program," dated October 30, 2018 (ML18270A130)
- b. NRC Letter to Exelon, "Clinton Power Station, Unit No. 1 – Issuance Of Amendment No. 238 Re: Technical Specifications Task Force Traveler TSTF-505, Revision 2, 'Provide Risk-Informed Extended Completion Times – RITSTF Initiative 4b'," dated June 28, 2021 (ML21132A288)
- c. NRC letter to Constellation, "Dresden Nuclear Power Station, Units 2 And 3 - Issuance of Amendment Nos. 286 And 279 Re: Adoption Of TSTF-505, 'Provide Risk-Informed Extended Completion Times – RITSTF Initiative 4b' and TSTF-591, 'Revise Risk Informed Completion Time (RICT) Program'," dated July 30, 2025 (ML25196A299)
- d. NRC Letter to Constellation, "James A. FitzPatrick Nuclear Power Plant – Issuance of Amendment No. 353 Re: Adoption of TSTF-505, Revision 2, 'Provide Risk-Informed Extended Completion Times – RITSTF Initiative 4B'," dated September 1, 2022 (ML22223A141)
- e. NRC Letter to Exelon, "LaSalle County Station, Unit Nos. 1 and 2 – Issuance of Amendment Nos. 251 and 237 Re: Revise Technical Specifications to Adopt Risk-Informed Completion Times TSTF-505, Revision 2, 'Provide Risk-Informed Extended Completion Times – RITSTF Initiative 4b'," dated September 7, 2021 (ML21162A069)
- f. NRC Letter to Exelon, "Limerick Generating Station, Units 1 and 2 – Issuance of Amendment Nos. 240 and 203 to Implement TSTF-505, Revision 2, 'Provide Risk-Informed Extended Completion Times – RITSTF Initiative 4b'," dated February 28, 2020 (ML20034F637)
- g. NRC letter to Constellation, "Nine Mile Point Nuclear Station, Unit 1 – Issuance of Amendment No. 250 Regarding Revision to Technical Specifications to Adopt TSTF-505, Revision 2, 'Provide Risk-Informed Extended Completion Times – RITSTF Initiative 4b'," dated December 6, 2023 (ML23289A012)
- h. NRC letter to Exelon, "Nine Mile Point Nuclear Station, Unit 2 – Issuance of Amendment No. 186 to Adopt Technical Specifications Task Force Traveler TSTF-505, Revision 2, 'Provide Risk-Informed Extended Completion Times – RITSTF Initiative 4b'," dated April 29, 2021 (ML21082A221)
- i. NRC letter to Exelon, "Peach Bottom Atomic Power Station, Units 2 and 3 – Issuance of Amendments Nos. 338 and 341, RE: Adoption of TSTF-505, Revision 2, 'Provide Risk-Informed Extended Completion Times – RITSTF Initiative 4b'," dated May 14, 2021 (ML21074A411)
- j. NRC Letter to Constellation, "Quad Cities Nuclear Power Station, Units 1 and 2, Issuance of Amendment Nos. 302 and 298 Re: Adoption of TSTF-505, 'Provide Risk Informed Extended Completion Times – RITSTF Initiative 4b' and TSTF-591 'Revise

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Risk Informed Completion Time (RICT) Program'," dated August 8, 2024
(ML24183A108)

- k. NRC letter to Constellation, "R. E. Ginna Nuclear Power Plant – Issuance of**
Amendment No. 150 Re: Adopt TSTF-505, Revision 2, 'Provide Risk-Informed
Extended Completion Times – RITSTF Initiative 4b'," dated June 21, 2022
(ML22119A094)

ATTACHMENT 2A

Insert For License Mark-ups

Insert 1

In addition, Constellation Energy Generation, LLC is authorized to implement 10 CFR 50.69 using the Enhanced Risk-Informed Categorization Methodology for Pressure Boundary Components, as described in Constellation letter dated [DATE], and as approved in License Amendment No. [XXX] dated [DATE]. This methodology supports categorization of RISC-1, RISC-2, RISC-3, and RISC-4 SSCs by performing a plant-level evaluation of the pressure retention function across all systems, treating the pressure boundary function as a system for 10 CFR 50.69 categorization purposes. Until the plant-level evaluation is completed using the enhanced methodology, the previously approved ANO-2 passive categorization approach remains valid and may be used for categorization of pressure boundary components. Upon completion of the plant-level evaluation using the enhanced methodology, the ANO-2 approach will no longer be used for categorization purposes.

ATTACHMENT 2B

Facility Operating License Mark-up Pages

Calvert Cliffs Nuclear Power Plant, Unit 1 and 2

Renewed Facility Operating License Nos. DPR-53 and DPR-69

Docket Nos. 50-317 and 50-318

Subject: License Amendment Request to Incorporate Enhanced Passive Categorization
Methodology for 50.69 Implementation

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(c) Actions to minimize release to include consideration of:

1. Water spray scrubbing
2. Dose to onsite responders

(6) Risk-Informed Categorization and Treatment of Structures, Systems, and Components

Constellation Energy Generation, LLC is approved to implement 10 CFR 50.69 using the processes for categorization of Risk-Informed Safety Class (RISC)-1, RISC-2, RISC-3, and RISC-4 Structures, Systems, and Components (SSCs) using: Probabilistic Risk Assessment (PRA) models to evaluate risk associated with internal events, including internal flooding, and internal fire; the shutdown safety assessment process to assess shutdown risk; the Arkansas Nuclear One, Unit 2 (ANO-2) passive categorization method to assess passive component risk for Class 2 and Class 3 and non-Class SSCs and their associated supports; the results of the non-PRA evaluations that are based on the IPEEE Screening Assessment for External Hazards updated using the external hazard screening significance process identified in ASME/ANS PRA Standard RA-Sa-2009 for other external hazards except seismic; and the alternative seismic approach as described in Exelon's original submittal letter dated November 28, 2018, and all its subsequent associated supplements as specified in License Amendment No. 332 dated February 28, 2020.

Insert 1
attachment 2A

Prior NRC approval, under 10 CFR 50.90, is required for a change to the categorization process specified above (e.g., change from a seismic margins approach to a seismic probabilistic risk assessment approach).

- (7) Constellation Energy Generation, LLC shall provide to the Director of the Office of Nuclear Reactor Regulation or the Director of the Office of Nuclear Material Safety and Safeguards, as applicable, a copy of any application, at the time it is filed, to transfer (excluding grants of security interests or liens) from Constellation Energy Generation, LLC to its direct or indirect parent, or to any other affiliated company, facilities for the production, transmission, or distribution of electric energy having a depreciated book value exceeding ten percent (10%) of Constellation Energy Generation, LLC's consolidated net utility plant, as recorded on Constellation Energy Generation, LLC's books of account.

- D. Constellation Energy Generation, LLC shall fully implement and maintain in effect all provisions of the Commission-approved physical security, training and qualification, and safeguards contingency. plans, including amendments made pursuant to provisions of the Miscellaneous Amendments and Search Requirements revisions to 10 CFR 73.55 (51 FR 27817 and 27822) and to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The combined set of plans, which contain Safeguards Information protected under 10 CFR 73.21, is entitled: "Calvert Cliffs Nuclear Power Plant Security Plan, Training and Qualification Plan, and Safeguards Contingency Plan, Revision 1" submitted May 19, 2006.

Constellation Energy Generation, LLC shall fully implement and maintain in effect all provisions of the Commission-approved cyber security plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The licensee's

(7) Mitigation Strategy

Constellation Energy Generation, LLC shall develop and maintain strategies for addressing large fires and explosions that include the following key areas:

- (a) Fire fighting response strategy with the following elements:
 - 1. Pre-defined coordinated fire response strategy and guidance
 - 2. Assessment of mutual aid fire fighting assets
 - 3. Designated staging areas for equipment and materials
 - 4. Command and control
 - 5. Training of response personnel
- (b) Operations to mitigate fuel damage considering the following:
 - 1. Protection and use of personnel assets
 - 2. Communications
 - 3. Minimizing fire spread
 - 4. Procedures for implementing integrated fire response strategy
 - 5. Identification of readily available pre-staged equipment
 - 6. Training on integrated fire response strategy
 - 7. Spent fuel pool mitigation measures
- (c) Actions to minimize release to include consideration of:
 - 1. Water spray scrubbing
 - 2. Dose to on-site responders

(8) Risk-Informed Categorization and Treatment of Structures, Systems, and Components

Constellation Energy Generation, LLC is approved to implement 10 CFR 50.69 using the processes for categorization of Risk-Informed Safety Class (RISC)-1, RISC-2, RISC-3, and RISC-4 Structures, Systems, and Components (SSCs) using Probabilistic Risk Assessment (PRA) models to evaluate risk associated with internal events, including internal flooding, and internal fire; the shutdown safety assessment process to assess shutdown risk; the Arkansas Nuclear One, Unit 2 (ANO-2) passive categorization method to assess passive component risk for Class 2 and Class 3 and non-Class SSCs and their associated supports; the results of the non-PRA evaluations that are based on the IPEEE Screening Assessment for External Hazards updated using the external hazard screening significance process identified in ASME/ANS PRA Standard RA-Sa-2009 for other external hazards except seismic; and the alternative seismic approach as described in Exelon's original submittal letter dated November 28, 2018, and all its subsequent associated supplements as specified in License Amendment No. 310 dated February 28, 2020.

Insert 1
attachment 2A

Prior NRC approval, under 10 CFR 50.90, is required for a change to the categorization process specified above (e.g., change from a seismic margins approach to a seismic probabilistic risk assessment approach).

- (9) Constellation Energy Generation, LLC shall provide to the Director of the Office of Nuclear Reactor Regulation or the Director of the Office of Nuclear Material Safety and Safeguards, as applicable, a copy of any application, at the time it is filed, to transfer (excluding grants of security interests or liens) from Constellation Energy Generation, LLC to its direct or indirect parent, or to any other affiliated company, facilities for the production, transmission, or distribution of electric energy having a depreciated book value exceeding ten percent (10%) of Constellation Energy Generation, LLC's consolidated net utility plant, as recorded on Constellation Energy Generation, LLC's books of account.

- D. Constellation Energy Generation, LLC shall fully implement and maintain in effect all provisions of the Commission-approved physical security, training and qualification, and safeguards contingency plans, including amendments made pursuant to provisions of the Miscellaneous Amendments and Search Requirements revisions to 10 CFR 73.55 (51 FR 27817 and 27822) and the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The combined set of plans, which contain Safeguards Information protected under 10 CFR 73.21, is entitled: "Calvert Cliffs Nuclear Power Plant Security Plan, Training and Qualification Plan, and Safeguards Contingency Plan, Revision 1" submitted dated May 19, 2006.

Constellation Energy Generation, LLC shall fully implement and maintain in effect all provisions of the Commission-approved cyber security plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The licensee's CSP was approved by License Amendment No. 275 and modified by License Amendment No. 290.

- E. Constellation Energy Generation, LLC shall implement and maintain in effect all provisions of the approved fire protection program that comply with 10 CFR 50.48(a) and 10 CFR 50.48(c), as specified in the license amendment request dated September 24, 2013; as supplemented by letters dated February 9, 2015, March 11, 2015, April 13, 2015, July 6, 2015, August 13, 2015, February 24, 2016, and April 22, 2016, and as approved in the NRC safety evaluation dated August 30, 2016. Except where NRC approval for changes or deviations is required by 10 CFR 50.48(c), and provided no other regulation, technical specification, license condition or requirement would require prior NRC approval, the licensee may make changes to the fire protection program without prior approval of the Commission if those changes satisfy the provisions set forth in 10 CFR 50.48(a) and 10 CFR 50.48(c), and the criteria listed below are satisfied.

ATTACHMENT 2C

Facility Operating License Mark-up Pages

Clinton Power Station, Unit 1

Renewed Facility Operating License No. NPF-62

Docket No. 50-461

Subject: License Amendment Request to Incorporate Enhanced Passive Categorization
Methodology for 50.69 Implementation

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closing. The NRC approved a transaction on November 16, 2021, that resulted in Exelon Generation Company, LLC being renamed Constellation Energy Generation, LLC. The name change resulted in a corresponding name change for the Clinton NQF.

- (25) Irradiated GE14i fuel bundles shall be stored at least four feet from the wall of the Spent Fuel Pool.
- (26) Adoption of 10 CFR 50.69, "Risk-informed categorization and treatment of structures, systems, and components for nuclear power plants"

Constellation Energy Generation, LLC is approved to implement 10 CFR 50.69 using the processes for categorization of Risk-Informed Safety Class (RISC)-1, RISC-2, RISC-3, and RISC-4 Structures, Systems, and Components (SSCs) using: Probabilistic Risk Assessment (PRA) models to evaluate risk associated with internal events, including internal flooding, and internal fire; the shutdown safety assessment process to assess shutdown risk; the Arkansas Nuclear One, Unit 2 (ANO-2) passive categorization method to assess passive component risk for Class 2 and Class 3 and non-Class SSCs and their associated supports; the results of the non-PRA evaluations that are based on the IPEEE Screening Assessment for External Hazards updated using the external hazard screening significance process identified in ASME/ANS PRA Standard RA-Sa-2009 for other external hazards except seismic; and the alternative seismic approach as described in EGC's submittal letter dated April 30, 2020, and all its subsequent associated supplements as specified in License Amendment No. 237 dated May 19, 2021.

Insert 1
attachment 2A

Prior NRC approval, under 10 CFR 50.90, is required for a change to the categorization process specified above (e.g., change from a seismic margins approach to a seismic probabilistic risk assessment approach).

- (27) Constellation Energy Generation, LLC shall provide to the Director of the Office of Nuclear Reactor Regulation or the Director of the Office of Nuclear Material Safety and Safeguards, as applicable, a copy of any application, at the time it is filed, to transfer (excluding grants of security interests or liens) from Constellation Energy Generation, LLC to its direct or indirect parent, or to any other affiliated company, facilities for the production, transmission, or distribution of electric energy having a depreciated book value exceeding ten percent (10%) of Constellation Energy Generation, LLC's consolidated net utility plant, as recorded on Constellation Energy Generation, LLC's books of account.

ATTACHMENT 2D

Facility Operating License Mark-up Pages

Dresden Nuclear Power Station, Units 2 and 3

Subsequent Renewed Facility Operating License Nos. DPR-19 and DPR-25

Docket Nos. 50-237 and 50-249

Subject: License Amendment Request to Incorporate Enhanced Passive Categorization
Methodology for 50.69 Implementation

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to 10 CFR 54.21(d), describes certain future activities to be completed prior to the period of extended operation. The licensee shall complete these activities no later than December 22, 2009, and shall notify the NRC in writing when implementation of these activities is complete and can be verified by NRC inspection.

The Updated Final Safety Analysis Report supplement, as revised, shall be included in the next scheduled update to the Updated Final Safety Analysis Report required by 10 CFR 50.71(e)(4) following issuance of this subsequent renewed license. Until that update is complete, the licensee may make changes to the programs and activities described in the supplement without prior Commission approval, provided that the licensee evaluates such change pursuant to the criteria set forth in 10 CFR 50.59 and otherwise complies with the requirements in that section.

- J. All capsules in the reactor vessel that are removed and tested must meet the test procedures and reporting requirements of ASTM E 185-82 to the extent practicable for the configuration of the specimens in the capsule. Any changes to the capsule withdrawal schedule, including spare capsules, must be approved by the NRC prior to implementation. All capsules placed in storage must be maintained for future inspection.

- K. Adoption of Risk Informed Completion Times TSTF-505, Revision 2, "Provide Risk-Informed Extension Completion Times -RITSTF Initiative 4b"

Constellation is approved to implement TSTF-505, Revision 2, modifying the Technical Specifications requirements related to Completion Times (CTs) for Required Actions to provide the option to calculate a longer, risk-informed CT (RICT). The methodology for using the new Risk informed Completion Time Program is described in NEI 06-09-A, "Risk-Informed Technical Specifications Initiative 4b, Risk-Managed Technical Specifications (RMTS) Guidelines, Revision 0, which was approved by the NRC on May 17, 2007.

Constellation will complete the implementation items listed in Attachment 5 of Constellation Energy Generation, LLC letter to the NRC dated May 8, 2024, prior to implementation of the RICT Program for these systems. All issues identified in Attachment 5 will be addressed and any associated changes will be made, focused-scope peer reviews will be performed on changes that are PRA upgrades as defined in the PRA standard (ASME/ANS RA-Sa-2009, as endorsed by RG 1.200, Revision 3), and any findings will be resolved and reflected in the PRA of record prior to the implementation of the RICT Program

- L. Constellation Energy Generation, LLC is approved to implement 10 CFR 50.69 using the processes for categorization of Risk-Informed Safety Class (RISC)-1, RISC-2, RISC-3, and RISC-4 structures, systems, and components (SSCs) using Probabilistic Risk Assessment (PRA) models to evaluate risk associated with internal events, including internal flooding, and internal fire, seismic events; the shutdown safety assessment process to assess shutdown risk; the Arkansas Nuclear One, Unit 2 (ANO-2) passive categorization method to assess passive component risk for Class 2 and

Class 3 and non-Class SSCs and their associated supports; the results of the non-PRA evaluations that are based on the IPEEE Screening Assessment for External Hazards updated using the external hazard screening significance process identified in ASME/ANS PRA Standard RA-Sa-2009 for other external hazards except external flooding and extreme winds and tornadoes; an external flood safe shutdown equipment list for external floods; and a high wind safe shutdown equipment list for extreme winds and tornadoes.

Insert 1
attachment 2A

Prior NRC approval, under 10 CFR 50.90, is required for a change to the categorization process specified above (e.g., change from a seismic probabilistic risk assessment approach to seismic margins approach).

M. Subsequent License Renewal License Conditions

(1) The information in the Updated Final Safety Analysis Report Supplement submitted as required by 10 CFR 54.21(d), and revised during the application review process, and the licensee's commitments listed in Appendix A of the "Final Safety Evaluation to the Subsequent License Renewal of Dresden Nuclear Power Station, Units 2 and 3," dated September 9, 2025, are collectively the "Subsequent License Renewal Updated Final Safety Analysis Report Supplement." This supplement is henceforth part of the Updated Final Safety Analysis Report which will be updated in accordance with 10 CFR 50.71(e).

As such, the licensee may make changes to the programs, activities, and commitments described in the Subsequent License Renewal Updated Final Safety Analysis Report Supplement, provided the licensee evaluates such changes pursuant to 10 CFR 50.59, "Changes, Tests and Experiments," and otherwise complies with the requirements in that section.

(2) This Subsequent License Renewal Final Safety Analysis Report Supplement, as defined in subsequent renewed license condition (1) above, describes programs to be implemented and activities to be completed before the subsequent period of extended operation, which is the period following the December 22, 2029, expiration of the initial renewed license.

- a. The licensee shall implement those new programs and enhancements to existing programs no later than the date 6 months before the subsequent period of extended operation.
- b. The licensee shall complete those activities by the date 6 months prior to the subsequent period of extended operation or by the end of the last refueling outage before the subsequent period of extended operation, whichever occurs later.

- (2) Ensure that the coupons are removed for evaluation every 10 years;
- (3) Ensure that should any coupon be identified as failing the minimum certified B-10 areal density criterion based on coupon test results, the licensee will perform in-situ testing to confirm that the minimum B-10 areal density (0.02 g/cm²) is met for the BORAL panels installed in the DNPS spent fuel pools; and,
- (4) Submit a report to the NRC within 90 days following the completion of evaluations associated with Item 3 above. The report shall include; a description of the testing results, the assessments performed, and the interim and long-term corrective actions for abnormal indications.

EE. Adoption of Risk Informed Completion Times TSTF-505, Revision 2, "Provide Risk-Informed Extension Completion Times -RITSTF Initiative 4b"

Constellation is approved to implement TSTF-505, Revision 2, modifying the Technical Specifications requirements related to Completion Times (CTs) for Required Actions to provide the option to calculate a longer, risk-informed CT (RICT). The methodology for using the new Risk-Informed Completion Time Program is described in NEI 06-09-A, "Risk-Informed Technical Specifications Initiative 4b, Risk-Managed Technical Specifications (RMTS) Guidelines," Revision 0, which was approved by the NRC on May 17, 2007.

Constellation will complete the implementation items listed in Attachment 5 of Constellation Energy Generation, LLC letter to the NRC dated May 8, 2024, prior to implementation of the RICT Program for these systems. All issues identified in Attachment 5 will be addressed and any associated changes will be made, increased-scope peer reviews will be performed on changes that are PRA upgrades as defined in the PRA standard (ASME/ANS RA-Sa-2009, as endorsed by RG 1.200, Revision 3), and any findings will be resolved and reflected in the PRA of record prior to the implementation of the RICT Program.

- FF. Constellation Energy Generation, LLC is approved to implement 10 CFR 50.69 using the processes for categorization of Risk-Informed Safety Class (RISC)-1, RISC-2, RISC-3, and RISC-4 structures, systems, and components (SSCs) using: Probabilistic Risk Assessment (PRA) models to evaluate risk associated with internal events, including internal flooding, and internal fire, seismic events; the shutdown safety assessment process to assess shutdown risk; the Arkansas Nuclear One, Unit 2 (ANO-2) passive categorization method to assess passive component risk for Class 2 and Class 3 and non-Class SSCs and their associated

supports; the results of the non-PRA evaluations that are based on the IPEEE Screening Assessment for External Hazards updated using the external hazard screening significance process identified in ASME/ANS PRA Standard RA-Sa-2009 for other external hazards except external flooding and extreme winds and tornadoes; an external flood safe shutdown equipment list for external floods; and a high wind safe shutdown equipment list for extreme winds and tornadoes.

Insert 1
attachment 2A

Prior NRC approval, under 10 CFR 50.90, is required for a change to the categorization process specified above (e.g., change from a seismic probabilistic risk assessment approach to seismic margins approach).

GG. Subsequent License Renewal License Conditions

- (1) The information in the Updated Final Safety Analysis Report Supplement submitted as required by 10 CFR 54.21(d), and revised during the application review process, and the licensee's commitments listed in Appendix A of the "Final Safety Evaluation to the Subsequent License Renewal of Dresden Nuclear Power Station, Units 2 and 3," dated September 9, 2025, are collectively the "Subsequent License Renewal Updated Final Safety Analysis Report Supplement." This supplement is henceforth part of the Updated Final Safety Analysis Report which will be updated in accordance with 10 CFR 50.71(e).

As such, the licensee may make changes to the programs, activities, and commitments described in the Subsequent License Renewal Updated Final Safety Analysis Report Supplement, provided the licensee evaluates such changes pursuant to 10 CFR 50.59, "Changes, Tests and Experiments," and otherwise complies with the requirements in that section.

- (2) This Subsequent License Renewal Final Safety Analysis Report Supplement, as defined in subsequent renewed license condition (1) above, describes programs to be implemented and activities to be completed before the subsequent period of extended operation, which is the period following the December 22, 2029, expiration of the initial renewed license.
 - a. The licensee shall implement those new programs and enhancements to existing programs no later than the date 6 months before the subsequent period of extended operation.
 - b. The licensee shall complete those activities by the date 6 months prior to the subsequent period of extended operation or by the end of the last refueling outage before the subsequent period of extended operation,

Subsequent Renewed License No. DPR-25

Amendment No.

ATTACHMENT 2E

Facility Operating License Mark-up Pages

James A. FitzPatrick Nuclear Power Plant

Renewed Facility Operating License No. DPR-59

Docket No. 50-333

Subject: License Amendment Request to Incorporate Enhanced Passive Categorization
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- W. Constellation Energy Generation, LLC shall, no later than the date the closing of the transaction approved on November 16, 2021, occurs, enter into a Support Agreement of approximately \$85 million with Constellation FitzPatrick. Constellation FitzPatrick shall not take any action to cause Constellation Energy Generation, LLC, or its successors and assigns, to void, cancel, or materially modify the Constellation Energy Generation, LLC Support Agreement or cause it to fail to perform, or impair its performance under the constellation Energy Generation, LLC Support Agreement, without the prior written consent of the NRC. The Constellation Energy Generation, LLC Support Agreement may not be amended or modified without 30 days prior written notice to the Director of the Constellation Energy Generation, LLC Support Agreement shall be submitted to the NRC no later than 30 days after the completion of the proposed transaction. Constellation Energy Generation, LLC shall inform the NRC in writing no later than 14 days after any funds are provided to or for Constellation FitzPatrick under the Constellation Energy Generation, LLC Support Agreement.
- X. Constellation Energy Generation, LLC is approved to implement 10 CFR 50.69 using the processes for categorization of Risk-Informed Safety Class (RISC)-1, RISC-2, RISC-3, and RISC-4 Structures, Systems, and Components (SSCs) using: Probabilistic Risk Assessment (PRA) models to evaluate risk associated with internal events, including internal flooding, and internal fire; the shutdown safety assessment process to assess shutdown risk; the Arkansas Nuclear One, Unit 2 (ANO-2) passive categorization method to assess passive component risk for Class 2 and Class 3 and non-Class SSCs and their associated supports; the results of the non-PRA evaluations that are based on the IPEEE Screening Assessment for External Hazards updated using the external hazard screening significance process identified in ASME/ANS PRA Standard RA-Sa-2009 for other external hazards except seismic; and the alternative seismic approach as described in Exelon Generation Company, LLC's submittal letter dated July 30, 2021, and all its subsequent associated supplements as specified in License Amendment No. 352 dated August 23, 2022.

Insert 1
attachment 2A



Prior NRC approval, under 10 CFR 50.90, is required for a change to the categorization process specified above (e.g., change from a seismic margins approach to a seismic probabilistic risk assessment approach).

ATTACHMENT 2F

Facility Operating License Mark-up Pages

LaSalle County Station, Units 1 and 2

Renewed Facility Operating License Nos. NPF-11 and NPF-18

Docket Nos. 50-373 and 50-374

Subject: License Amendment Request to Incorporate Enhanced Passive Categorization
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(47) Adoption of 10 CFR 50.69, "Risk-Informed Categorization and Treatment of Structures, Systems, and Components for Nuclear Power Plants"

Constellation Energy Generation, LLC is approved to implement 10 CFR 50.69 using the processes for categorization of Risk-Informed Safety Class (RISC)-1, RISC-2, RISC-3, and RISC-4 Structures, Systems, and Components (SSCs) using: Probabilistic Risk Assessment (PRA) models to evaluate risk associated with internal events, including internal flooding, and internal fire; the shutdown safety assessment process to assess shutdown risk; the Arkansas Nuclear One, Unit 2 (ANO-2) passive categorization method to assess passive component risk for Class 2 and Class 3 SSCs and their associated supports; the results of the non-PRA evaluations that are based on the IPEEE Screening Assessment for External Hazards updated using the external hazard screening significance process identified in ASME/ANS PRA Standard RA-Sa-2009 for other external hazards except seismic; and the alternative seismic approach as described in the EGC submittal letter dated January 31, 2020, and all its subsequent associated supplements, as specified in License Amendment No. 249 dated May 27, 2021.

Insert 1
attachment 2A

Prior NRC approval, under 10 CFR 50.90, is required for a change to the categorization process specified above (e.g., change from a seismic margins approach to a seismic probabilistic risk assessment approach).

3. The licensee shall notify the NRC in writing within 30 days after having accomplished item (b)1 above and include the status of those activities that have been or remain to be completed in item (b)2 above.

(36) Adoption of 10 CFR 50.69, "Risk-Informed Categorization and Treatment of Structures, Systems, and Components for Nuclear Power Plants"

Constellation Energy Generation, LLC is approved to implement 10 CFR 50.69 using the processes for categorization of Risk-Informed Safety Class (RISC)-1, RISC-2, RISC-3, and RISC-4 Structures, Systems, and Components (SSCs) using: Probabilistic Risk Assessment (PRA) models to evaluate risk associated with internal events, including internal flooding, and internal fire; the shutdown safety assessment process to assess shutdown risk; the Arkansas Nuclear One, Unit 2 (ANO-2) passive categorization method to assess passive component risk for Class 2 and Class 3 SSCs and their associated supports; the results of the non-PRA evaluations that are based on the IPEEE Screening Assessment for External Hazards updated using the external hazard screening significance process identified in ASME/ANS PRA Standard RA-Sa-2009 for other external hazards except seismic; and the alternative seismic approach as described in the EGC submittal letter dated January 31, 2020, and all its subsequent associated supplements, as specified in License Amendment No. 235 dated May 27, 2021.

Insert 1
attachment 2A



Prior NRC approval, under 10 CFR 50.90, is required for a change to the categorization process specified above (e.g., change from a seismic margins approach to a seismic probabilistic risk assessment approach).

ATTACHMENT 2G

Facility Operating License Mark-up Pages

Limerick Generating Station, Units 1 and 2

Renewed Facility Operating License Nos. NPF-39 and NPF-85

Docket Nos. 50-352 and 50-353

Subject: License Amendment Request to Incorporate Enhanced Passive Categorization
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APPENDIX C page -1-

(16) Additional Conditions

The Additional Conditions contained in Appendix C, as revised through Amendment No. ~~261~~ Generation, LLC shall operate the facility in accordance with the Additional Conditions.

- (17) Constellation Energy Generation, LLC shall provide to the Director of the Office of Nuclear Reactor Regulation or the Director of the Office of Nuclear Material Safety and Safeguards, as applicable, a copy of any application, at the time it is filed, to transfer (excluding grants of security interests or liens) from Constellation Energy Generation, LLC to its direct or indirect parent, or to any other affiliated company, facilities for the production, transmission, or distribution of electric energy having a depreciated book value exceeding ten percent (10%) of Constellation Energy Generation, LLC's consolidated net utility plant, as recorded on Constellation Energy Generation, LLC's books of account.

(18) Deleted.

(19) Deleted.

(20) Deleted.

APPENDIX C
ADDITIONAL CONDITIONS
OPERATING LICENSE NO. NPF-39

Constellation Energy Generation, LLC shall comply with the following conditions on the schedule noted below:

<u>Amendment No.</u>	<u>Additional Conditions</u>
230, 255, 261	Constellation Energy Generation, LLC is approved to implement 10 CFR 50.69 using the processes for categorization of Risk-Informed Safety Class (RISC)-1, RISC-2, RISC-3, and RISC-4 structures, systems, and components (SSCs) using: Probabilistic Risk Assessment (PRA) models to evaluate risk associated with internal events, including internal flooding, and internal fire; the shutdown safety assessment process to assess shutdown risk; the Arkansas Nuclear One, Unit 2 (ANO-2) passive categorization method to assess passive component risk for Class 2 and Class 3 SSCs and their associated supports; and the results of non-PRA evaluations that are based on the IPEEE Screening Assessment for External Hazards, i.e., seismic margin analysis (SMA) to evaluate seismic risk, and a screening of other external hazards updated using the external hazard screening significance process identified in ASME/ANS PRA Standard RA-Sa-2009; as specified in Unit 1 License Amendment No. 230 dated July 31, 2018. In addition, Constellation Energy Generation, LLC (CEG) is approved to implement 10 CFR 50.69 using the alternative seismic approach, as described in the licensee's letters dated December 15, 2021, and February 14, 2022, for categorization of RISC-1, RISC-2, RISC-3, and RISC-4 SCCs as specified in Unit 1 License Amendment No. 261 dated May 17, 2023. Prior NRC approval, under 10 CFR 50.90, is required for a change to the categorization process specified above (e.g., change from a seismic margins approach to a seismic probabilistic risk assessment approach).

Insert 1
attachment 2A

- (13) The licensee's UFSAR supplement submitted pursuant to 10 CFR 54.21(d), as revised during the license renewal application review process, and as revised in accordance with license condition 2.C.(12), describes certain programs to be implemented and activities to be completed prior to the period of extended operation (PEO).
- (a) Constellation Energy Generation, LLC shall implement those new programs and enhancements to existing programs no later than December 22, 2028.
 - (b) Constellation Energy Generation, LLC shall complete those activities designated for completion prior to the PEO, as noted in Commitment Nos. 18, 19, 20, 22, 23, 24, 28, 29, 30, 38, 39, 40, 41, 42, 43, and 47, of Appendix A of NUREG-2171, "Safety Evaluation Report Related to the License Renewal of Limerick Generating Station, Units 1 and 2," no later than December 22, 2028, or the end of the last refueling outage prior to the period of extended operation, whichever occurs later.
 - (c) Constellation Energy Generation, LLC shall notify the NRC in writing within 30 days after having accomplished item (a) above and include the status of those activities that have been or remain to be completed in item (b) above.
- (14) The Additional Conditions contained in Appendix C, as revised through Amendment No. ~~223~~, are hereby incorporated into this renewed license. Constellation Energy Generation, LLC shall operate the facility in accordance with the Additional Conditions.

- D. The facility requires exemptions from certain requirements of 10 CFR Part 50 and 10 CFR Part 70. These include (a) exemption from the requirement of Appendix J, the testing of containment air locks at times when the containment integrity is not required (Section 6.2.6.1 of the SER and SSER-3), (b) exemption from the requirements of Appendix J, the leak rate testing of the Main Steam Isolation Valves (MSIVs) at the peak calculated containment pressure, Pa, and exemption from the requirements of Appendix J that the measured MSIV leak rates be included in the summation for the local leak rate test (Section 6.2.6.1 of SSER-3), (c) exemption from the requirement of Appendix J, the local leak rate testing of the Traversing Incore Probe Shear Valves (Section 6.2.6.1 of the SER and SSER-3), and (d) an exemption from the schedule requirements of 10 CFR 50.33(k)(l) related to availability of funds for decommissioning the facility (Section 22.1, SSER 8). The special circumstances regarding exemptions (a), (b) and (c) are identified in Sections 6.2.6.1 of the SER and SSER 3. An exemption from the criticality monitoring requirements of 10 CFR 70.24 was previously granted with NRC materials license No. SNM-1977 issued November 22, 1988. The licensee is hereby exempted from the requirements of 10 CFR 70.24 insofar as this requirement applies to the handling and storage of fuel assemblies held under this renewed license.

APPENDIX C
ADDITIONAL CONDITIONS
OPERATING LICENSE NO. NPF-85

Constellation Energy Generation, LLC shall comply with the following conditions on the schedule noted below:

<u>Amendment No.</u>	<u>Additional Conditions</u>
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193, 217, 223

Constellation Energy Generation, LLC is approved to implement 10 CFR 50.69 using the processes for categorization of Risk-Informed Safety Class (RISC)-1, RISC-2, RISC-3, and RISC-4 structures, systems, and components (SSCs) using: Probabilistic Risk Assessment (PRA) models to evaluate risk associated with internal events, including internal flooding, and internal fire; the shutdown safety assessment process to assess shutdown risk; the Arkansas Nuclear One, Unit 2 (ANO-2) passive categorization method to assess passive component risk for Class 2 and Class 3 SSCs and their associated supports; and the results of non-PRA evaluations that are based on the IPEEE Screening Assessment for External Hazards, i.e., seismic margin analysis (SMA) to evaluate seismic risk, and a screening of other external hazards updated using the external hazard screening significance process identified in ASME/ANS PRA Standard RA-Sa-2009; as specified in Unit 2 License Amendment No. 193 dated July 31, 2018.

In addition, Constellation Energy Generation, LLC (CEG) is approved to implement 10 CFR 50.69 using the alternative seismic approach, as described in the licensee's letters dated December 15, 2021, and February 14, 2022, for categorization of RISC-1, RISC-2, RISC-3, and RISC-4 SSCs as specified in Unit 2 License Amendment No. 223 dated May 17, 2023.

Insert 1
attachment 2A

Prior NRC approval, under 10 CFR 50.90, is required for a change to the categorization process specified above (e.g., change from a seismic margins approach to a seismic probabilistic risk assessment approach).

ATTACHMENT 2H

Facility Operating License Mark-up Pages

Nine Mile Point Nuclear Station, Units 1 and 2

Renewed Facility Operating License Nos. DPR-63 and NPF-69

Docket Nos. 50-220 and 50-410

Subject: License Amendment Request to Incorporate Enhanced Passive Categorization
Methodology for 50.69 Implementation

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(27) Implementation of 10 CFR 50.69, "Risk-Informed Categorization and Treatment of Structures, Systems and Components for Nuclear Power Reactors"

Constellation Energy Generation, LLC is approved to implement 10 CFR 50.69 using the processes for categorization of Risk-Informed Safety Class (RISC)-1, RISC-2, RISC-3, and RISC-4 Structures, Systems, and Components (SSCs) using: Probabilistic Risk Assessment (PRA) models to evaluate risk associated with internal events, including internal flooding, and internal fire; high wind safe shutdown equipment list to evaluate high wind / tornado missile events; the shutdown safety assessment process to assess shutdown risk; the Arkansas Nuclear One, Unit 2 (ANO-2) passive categorization method to assess passive component risk for Class 2 and Class 3 and non-Class SSCs and their associated supports; the results of the non-PRA evaluations that are based on the Individual Plant Examination of External Events (IPEEE) Screening Assessment for External Hazards updated using the external hazard screening significance process identified in American Society of Mechanical Engineers (ASME)/American Nuclear Society (ANS) PRA Standard RA-Sa-2009 for other external hazards except seismic; and the alternative seismic approach as described in Constellation Energy Generation, LLC's submittal letter dated, December 15, 2022, and all its subsequent associated supplements as specified in License Amendment No. 251 dated December 7, 2023.

Insert 1
attachment 2A

Prior NRC approval, under 10 CFR 50.90, is required for a change to the categorization process specified above (e.g., change from a seismic margins approach to a seismic probabilistic risk assessment approach).

- (30) Constellation Energy Generation, LLC is approved to implement 10 CFR 50.69 using the processes for categorization of Risk-Informed Safety Class (RISC)-1, RISC-2, RISC-3, and RISC-4 Structures, Systems, and Components (SSCs) using: Probabilistic Risk Assessment (PRA) models to evaluate risk associated with internal events, including internal flooding, and internal fire; the shutdown safety assessment process to assess shutdown risk; the Arkansas Nuclear One, Unit 2 (ANO-2) passive categorization method to assess passive component risk for Class 2 and Class 3 and non-Class SSCs and their associated supports; the results of the non-PRA evaluations that are based on the IPEEE Screening Assessment for External Hazards updated using the external hazard screening significance process identified in ASME/ANS PRA Standard RA-Sa-2009 for other external hazards except seismic; and the alternative seismic approach described in Exelon's submittal letter dated December 26, 2019, and all its subsequent associated supplements as specified in License Amendment No. 183 dated January 29, 2021.

Insert 1
attachment 2A



Prior NRC approval, under 10 CFR 50.90, is required for a change to the categorization process specified above (e.g., change from a seismic margins approach to a seismic probabilistic risk assessment approach).

- D. The facility requires exemptions from certain requirements of 10 CFR Part 50 and 10 CFR Part 70.
- i) An exemption from the critically alarm requirements of 10 CFR Part 70.24 was granted in the Special Nuclear Materials License No. SNM-1895 dated November 27, 1985. This exemption is described in Section 9.1 of Supplement 4 to the SER. This previously granted exemption is continued continued in this operating license.
 - ii) Exemptions to certain requirements of Appendix J to 10 CFR Part 50 are described in Supplements 3, 4, and 5 to the SER. These include (a) (this item left intentionally blank); (b) an exemption from the requirement of Option B of Appendix J, exempting main steam isolation valve measured leakage from the combined leakage rate limit of 0.6 La. (Section 6.2.6 of SSER 5)*; (c) an exemption from Option B of Appendix J, exempting the

*The parenthetical notation following the discussion of each exemption denotes the section of the Safety Evaluation Report (SER) and/or its supplements wherein the safety evaluation of the exemption is discussed.

ATTACHMENT 2I

Facility Operating License Mark-up Pages

Peach Bottom Atomic Power Station, Units 2 and 3

Subsequent Renewed Facility Operating License Nos. DPR-44 and DPR-56

Docket Nos. 50-277 and 50-278

Subject: License Amendment Request to Incorporate Enhanced Passive Categorization
Methodology for 50.69 Implementation

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(16) Maximum Extended Load Line Limit Analysis Plus (MELLLA+) Special Consideration

The licensee shall not operate the facility within the MELLLA+ operating domain with a feedwater heater out of service resulting in more than a 10°F reduction in feedwater temperature below the design feedwater temperature.

(17) Adoption of 10 CFR 50.69, "Risk-informed Categorization and Treatment of Structures, Systems, and Components for Nuclear Power Plants"

In support of implementing License Amendment No. 321 permitting the adoption of the provisions of 10 CFR 50.69 for Renewed Facility Operating License No. DPR-44 for Peach Bottom Unit 2, the license is amended to add the following license condition:

- (a) The licensee is approved to implement 10 CFR 50.69 using the processes for categorization of Risk-Informed Safety Class (RISC)-1, RISC-2, RISC-3, and RISC-4 structures, systems, and components (SSCs) using: Probabilistic Risk Assessment (PRA) models to evaluate risk associated with internal events, including internal flooding, and internal fire; the shutdown safety assessment process to assess shutdown risk; the Arkansas Nuclear One, Unit 2 (ANO-2) passive categorization method to assess passive component risk for Class 2 and Class 3 SSCs and their associated supports; and the results of non-PRA evaluations that are based on the IPEEE Screening Assessment for External Hazards, i.e., seismic margin analysis (SMA) to evaluate seismic risk, and a screening of other external hazards updated using the external hazard screening significance process identified in ASME/ANS PRA Standard RA-Sa 2009; as specified in Unit 2 License Amendment No. 321 dated October 25, 2018.

Insert 1
attachment 2A



Prior NRC approval, under 10 CFR 50.90, is required for a change to the categorization process specified above (e.g., change from a seismic margins approach to a seismic probabilistic risk assessment approach).

2. Level 1 performance criteria.
 3. The methodology for establishing the limit curves used for the Level 1 and Level 2 performance.
- (e) The results of the power ascension testing to verify the continued structural integrity of the steam dryer shall be submitted to the NRC staff in a report in accordance with 10 CFR 50.4. The report shall include a final load definition and stress report of the steam dryer, including the results of a complete re-analysis using the end-to-end B/Us from Peach Bottom Unit 2 benchmarking at EPU conditions. The report shall be submitted within 90 days of the completion of EPU power ascension testing for Peach Bottom Unit 3.
 - (f) During the first two scheduled refueling outages after reaching EPU conditions, a visual inspection shall be conducted of the steam dryer as described in the inspection guidelines contained in WCAP-17635-P.
 - (g) The results of the visual inspections of the steam dryer shall be submitted to the NRC staff in a report in accordance with 10 CFR 50.4. The report shall be submitted within 90 days following startup from each of the first two respective refueling outages.
 - (h) Within 6 months following completion of the second refueling outage, after the implementation of the EPU, the licensee shall submit a long-term steam dryer inspection plan based on industry operating experience along with the baseline inspection results.

The license condition described above shall expire: (1) upon satisfaction of the requirements in paragraphs (f) and (g), provided that a visual inspection of the steam dryer does not reveal any new unacceptable flaw(s) or unacceptable flaw growth that is due to fatigue, and; (2) upon satisfaction of the requirements specified in paragraph (h).

(16) Maximum Extended Load Line Limit Analysis Plus (MELLLA+) Special Consideration

The licensee shall not operate the facility within the MELLLA+ operating domain with a feedwater heater out of service resulting in more than a 10°F reduction in feedwater temperature below the design feedwater temperature.

(17) Adoption of 10 CFR 50.69, "Risk-informed Categorization and Treatment of Structures, Systems, and Components for Nuclear Power Plants"

In support of implementing License Amendment No. 324 permitting the adoption of the provisions of 10 CFR 50.69 for Renewed Facility Operating License No. DPR-56 for Peach Bottom Unit 3, the license is amended to add the following license condition:

- (a) The licensee is approved to implement 10 CFR 50.69 using the processes for categorization of Risk-Informed Safety Class (RISC)-1, RISC-2, RISC-3, and RISC-4 structures, systems, and components (SSCs) using: Probabilistic Risk Assessment (PRA) models to evaluate risk associated with internal events, including internal flooding, and internal fire; the shutdown safety assessment process to assess shutdown risk; the Arkansas Nuclear One, Unit 2 (ANO-2) passive categorization method to assess passive component risk for Class 2 and Class 3 SSCs and their associated supports; and the results of non-PRA evaluations that are based on the IPEEE Screening Assessment for External Hazards, i.e., seismic margin analysis (SMA) to evaluate seismic risk, and a screening of other external hazards updated using the external hazard screening significance process identified in ASME/ANS PRA Standard RA-Sa-2009; as specified in Unit 3 License Amendment No. 324 dated October 25, 2018.

Insert 1
attachment 2A

Prior NRC approval, under 10 CFR 50.90, is required for a change to the categorization process specified above (e.g., change from a seismic margins approach to a seismic probabilistic risk assessment approach).

- (18) This subsequent renewed license is subject to the following conditions for the protection of the environment:

- (a) To the extent matters related to thermal discharges are treated therein, operation of Peach Bottom Atomic Power Station, Unit No. 3, will be governed by NPDES Permit No. PA 0009733, as now in effect and as hereafter amended. Questions pertaining to conformance thereto shall be referred to and shall be determined by the NPDES Permit issuing or enforcement authority, as appropriate.
- (b) In the event of any modification of the NPDES Permit related to thermal discharges or the establishment (or amendment) of alternative effluent limitations established pursuant to Section 316 of the Federal Water Pollution Control Act, the licensee shall inform the NRC and analyze any associated changes in or to the Station, its components, its operation or in the discharge of effluents therefrom. If such change would entail any modification to this license, or any Technical Specifications which are part of this license, or require NRC approval pursuant to 10 CFR 50.59 or involve an environmental

ATTACHMENT 2J

Facility Operating License Mark-up Pages

Quad Cities Nuclear Power Station, Units 1 and 2

Renewed Facility Operating License Nos. DPR-29 and DPR-30

Docket Nos. 50-254 and 50-265

Subject: License Amendment Request to Incorporate Enhanced Passive Categorization
Methodology for 50.69 Implementation

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- (4) Ensure that if any inserts are identified as potentially failing the minimum certified Boron-10 areal density criterion, based on correlation of the coupon evaluation or insert service wear evaluation results to inserts, or other abnormal indications, Constellation Energy Generation, LLC will take affected inserts out of service until it can be positively demonstrated that the minimum certified Boron-10 areal density criterion (0.0116 g/cm²) is met for each insert; and,
- (5) Submit a report to the NRC, within 90 days following completion of evaluations associated with Item 4 above, that describes the testing results, assessments performed, and interim and long-term corrective actions for abnormal indications.

CC. Constellation Energy Generation, LLC is approved to implement 10 CFR 50.69 using the processes for categorization of Risk-Informed Safety Class (RISC)-1, RISC-2, RISC-3, and RISC-4 structures, systems, and components (SSCs) using: Probabilistic Risk Assessment (PRA) models to evaluate risk associated with internal events, including internal flooding, and internal fire; the shutdown safety assessment process to assess shutdown risk; the Arkansas Nuclear One, Unit 2 (ANO-2) passive categorization method to assess passive component risk for Class 2 and Class 3 and non-Class SSCs and their associated supports; the results of the non-PRA evaluations that are based on the IPEEE Screening Assessment for External Hazards updated using the external hazard screening significance process identified in ASME/ANS PRA Standard RA-Sa-2009 for other external hazards except seismic; and the alternative seismic approach as described in Constellation's submittal letter dated June 8, 2023, and all its subsequent associated supplements as specified in License Amendment No. 301 dated July 3, 2024

Insert 1
attachment 2A

Prior NRC approval, under 10 CFR 50.90, is required for a change to the categorization process specified above (e.g., change from a seismic margins approach to a seismic probabilistic risk assessment approach).

DD. Deleted

- (4) Ensure that if any inserts are identified as potentially failing the minimum certified Boron-10 areal density criterion, based on correlation of the coupon evaluation or insert service wear evaluation results to inserts, or other abnormal indications, Constellation Energy Generation, LLC will take affected inserts out of service until it can be positively demonstrated that the minimum certified Boron-10 areal density criterion (0.0116 g/cm²) is met for each insert; and,
- (5) Submit a report to the NRC, within 90 days following completion of evaluations associated with Item 4 above, that describes the testing results, assessments performed, and interim and long-term corrective actions for abnormal indications.

BB. Constellation Energy Generation, LLC is approved to implement 10 CFR 50.69 using the processes for categorization of Risk-Informed Safety Class (RISC)-1, RISC-2, RISC-3, and RISC-4 structures, systems, and components (SSCs) using: Probabilistic Risk Assessment (PRA) models to evaluate risk associated with internal events, including internal flooding, and internal fire; the shutdown safety assessment process to assess shutdown risk; the Arkansas Nuclear One, Unit 2 (ANO-2) passive categorization method to assess passive component risk for Class 2 and Class 3 and non-Class SSCs and their associated supports; the results of the non-PRA evaluations that are based on the IPEEE Screening Assessment for External Hazards updated using the external hazard screening significance process identified in ASME/ANS PRA Standard RA-Sa-2009 for other external hazards except seismic; and the alternative seismic approach as described in Constellation's submittal letter dated June 8, 2023, and all its subsequent associated supplements as specified in License Amendment No. 297 dated July 3, 2024.

Insert 1
attachment 2A

Prior NRC approval, under 10 CFR 50.90, is required for a change to the categorization process specified above (e.g., change from a seismic margins approach to a seismic probabilistic risk assessment approach).

CC. Deleted

ATTACHMENT 2K

Facility Operating License Mark-up Pages

R. E. Ginna Nuclear Power Plant

Renewed Facility Operating License No. DPR-18

Docket No. 50-244

Subject: License Amendment Request to Incorporate Enhanced Passive Categorization
Methodology for 50.69 Implementation

REVISED PAGE

- (17) Adoption of Risk Informed Completion Times TSTF-505, Revision 2,
"Provide Risk-Informed Extended Completion Times -RITSTF Initiative
4b"

Constellation Energy Generation, LLC is approved to implement TSTF-505, Revision 2, modifying the Technical Specification requirements related to Completion Times (CT) for Required Actions to provide the option to calculate a longer, risk-informed CT (RICT). The methodology for using the new Risk-Informed Completion Time Program is described in NEI 06-09-A, "Risk-Informed Technical Specifications Initiative 4b, Risk-Managed Technical Specifications (RMTS) Guidelines," Revision 0, which was approved by the NRC on May 17, 2007.

- (18) Deleted

- (19) Constellation Energy Generation, LLC shall provide to the Director of the Office of Nuclear Reactor Regulation or the Director of the Office of Nuclear Material Safety and Safeguards, as applicable, a copy of any application, at the time it is filed to transfer (excluding grants of security interests or liens) from Constellation Energy Generation, LLC to its direct or indirect parent, or to any other affiliate company, facilities for the production, transmission, or distribution of electric energy having a depreciated book value exceeding ten percent (10%) of Constellation Energy Generation, LLC's consolidated net utility plant, as recorded on Constellation Energy Generation, LLC's books of account.

- (20) Constellation Energy Generation, LLC is approved to implement 10 CFR 50.69 using the processes for categorization of Risk-Informed Safety Class (RISC)-1, RISC-2, RISC-3, and RISC-4 Structures, Systems, and Components (SSCs) using: Probabilistic Risk Assessment (PRA) models to evaluate risk associated with internal events, including internal flooding, and internal fire; the shutdown safety assessment process to assess shutdown risk; the Arkansas Nuclear One, Unit 2 (ANO-2) passive categorization method to assess passive component risk for Class 2 and Class 3 and non-Class SSCs and their associated supports; the results of the non-PRA evaluations that are based on the IPEEE Screening Assessment for External Hazards updated using the external hazard screening significance process identified in ASME/ANS PRA Standard RA-Sa-2009 for other external hazards except seismic; and the alternative seismic approach as described in Exelon's submittal letter dated May 20, 2021, and all its subsequent associated supplements as specified in License Amendment No. 151 dated June 22, 2022.

~~Constellation Energy Generation, LLC will complete the implementation items listed in Attachment 7 of Exelon Letter to the NRC dated May 20, 2021, prior to implementation of 10 CFR 50.69. All issues identified in the attachment will be addressed and any associated changes will be made, focused-scope peer reviews will be performed on changes that are PRA upgrades as defined in the PRA standard (ASME/ANS RA-Sa-2009, as endorsed by RG 1.200, Revision 2), and any findings will be resolved and reflected in the PRA of record prior to the implementation of 10 CFR 50.69.~~

Insert 1
attachment 2A

Prior NRC approval, under 10 CFR 50.90, is required for a change to the categorization process specified above (e.g., change from a seismic margins approach to a seismic probabilistic risk assessment approach).

- D. The facility requires an exemption from certain requirements of 10 CFR 50.46(a)(1). This includes an exemption from 50.46(a)(1), that emergency core cooling system (ECCS) performance be calculated in accordance with an acceptable calculational model which conforms to the provisions in Appendix K (SER dated April 18, 1978). The exemption will expire upon receipt and approval of revised ECCS calculations. The aforementioned exemption is authorized by law and will not endanger life property or the common defense and security and is otherwise in the public interest. Therefore, the exemption is hereby granted pursuant to 10 CFR 50.12.
- E. Constellation Energy Generation, LLC shall fully implement and maintain in effect all provisions of the Commission-approved physical security, training and qualification, and safeguards contingency plans including amendments made pursuant to provisions of the Miscellaneous Amendments and Search Requirements revisions to 10 CFR 73.55 (51 FR 27827 and 27822) and to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The combined set of plans, which contains Safeguards Information protected under 10 CFR 73.21, is entitled: "R. E. Ginna Nuclear Power Plant Security Plan, Training and Qualification Plan, and Safeguards Contingency Plan," submitted by letter dated May 15, 2006.

Constellation Energy Generation, LLC shall fully implement and maintain in effect all provisions of the Commission-approved cyber security plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The licensee's CSP was approved by License Amendment No. 113 and modified by License Amendment No. 117. The licensee has obtained Commission authorization to use Section 161A preemption authority under 42 U.S.C. 2201a for weapons at its facility.

- F. The Updated Final Safety Analysis Report supplement, submitted pursuant to 10 CFR 54.21 (d), describes certain future activities to be completed prior to the period of extended operation. Ginna LLC shall complete these activities no later than September 18, 2009, and shall notify the Commission in writing when implementation of these activities is complete and can be verified by NRC inspection.

ATTACHMENT 3

Disposition of Key Assumptions/Sources of Uncertainty

Subject: License Amendment Request to Incorporate Enhanced Passive Categorization Methodology for 50.69 Implementation

Key Assumptions and Uncertainties for the Enhanced Risk-Informed Categorization Methodology for Pressure Boundary Components		
Assumption/ Uncertainty	Discussion	Disposition for the Enhanced Risk-Informed Categorization Methodology for Pressure Boundary Components
Use of PRA consequence metrics with exclusion of frequency-driven PRA uncertainties for passive SSC categorization.	The Enhanced Passive Method applies Criterion 11 of the 10 CFR 50.69 categorization process using PRA consequence measures (CDF, LERF, CCDP, and CLERP) derived from the plant's internal-events and internal-flooding PRA models to evaluate postulated passive SSC rupture scenarios. For purposes of Criterion 11, passive SSCs are evaluated using consequence-based metrics and do not rely on initiating-event frequencies, human reliability parameters, or passive component failure frequencies from either the internal-events or internal-flooding PRA. Accordingly, frequency-driven uncertainties in the PRA do not influence the categorization outcome for passive SSCs.	Because Criterion 11 evaluations for passive SSCs are based on PRA consequence measures and bounded CCDP/CLERP results from the internal-events and internal-flooding PRA models, uncertainties associated with frequency-driven PRA elements do not impact Enhanced Passive categorization results. The PRA consequence metrics previously reviewed and accepted for the existing 10 CFR 50.69 program remain applicable. No additional sensitivity studies or uncertainty treatments are required.
For the CCDP/CLERP Criterion, a conservative rupture assumption (failure probability = 1.0) for passive components.	The methodology assumes rupture of the passive SSC when evaluating consequences, consistent with EPRI TR-112657 (ML20210P395, ML013470102), the ANO-2 RI-RRA approach, and ASME Code Case N-660. This bounding assumption obviates the need to develop or apply uncertain passive failure frequencies.	Because categorization is partly based on consequence (not frequency), uncertainty in passive failure rates has little effect on the categorization outcome. Criterion 11 applies consequence-based thresholds, including bounding CCDP/CLERP results, for HSS determination. No further evaluation is required.

Attachment 3
Disposition of Key Assumptions/Sources of Uncertainty
Page 2 of 2

Key Assumptions and Uncertainties for the Enhanced Risk-Informed Categorization Methodology for Pressure Boundary Components		
Assumption/ Uncertainty	Discussion	Disposition for the Enhanced Risk-Informed Categorization Methodology for Pressure Boundary Components
Stability and applicability of plant-specific Criterion 11 thresholds (CCDP/CLERP and CDF/LERF)	Criterion 11 uses paired consequence (CCDP, CLERP) and risk metrics (CDF, LERF) derived from the internal-events and internal-flooding PRA. These thresholds are stable with respect to reasonable PRA variations and are not sensitive to frequency-driven uncertainties. SSCs are evaluated consistently against these thresholds.	The plant-specific Criterion 11 CCDP/CLERP and CDF/LERF thresholds remain stable with respect to reasonable variations in PRA inputs and modeling assumptions. No additional sensitivity or uncertainty evaluations are required.
Assumptions related to internal flooding protective features credited in prerequisite evaluations.	Internal flooding consequence calculations rely on physical barriers, drainage pathways, and compartment characteristics confirmed as part of the methodology prerequisites. These features do not introduce categorization-relevant uncertainty because consequence evaluations reflect the as-modeled plant configuration.	The prerequisite flooding protection evaluations remain valid. No additional uncertainty treatment is required for categorization of passive pressure-boundary SSCs.

ATTACHMENT 4A

Disposition and Resolution of Open Peer Review Findings

Clinton Power Station, Unit 1

Renewed Facility Operating License No. NPF-62

Docket No. 50-461

Subject: License Amendment Request to Incorporate Enhanced Passive Categorization Methodology for 50.69 Implementation

Attachment 4A
Disposition and Resolution of Open Peer Review Findings
Clinton Power Station, Unit 1
Page 1 of 3

Finding Number	Supporting Requirement(s)	Capability Category (CC)	Description	Disposition for the Enhanced Risk-Informed Categorization Methodology for Pressure Boundary Components
Clinton				
1-32	LE-E1, QU-C1, QU-C2, HR-H3, LE-E4, QU-A5, HR-G7	HR-G7 is MET CAT I-III HR-H3 is MET CAT I-III LE-E1 is MET CAT I-III LE-E4 is MET CAT I-III QU-A5 is MET CAT I-III QU-C1 remains NOT MET QU-C2 is MET CAT I-III	CPS-PSA-004 Section 5.2 discusses the use of screening values used for HEPs in order to identify cutsets with dependent HEPs. However, only twelve of the over 100 basic events modeling post-initiator operator actions are listed in Table 5.2-1 as using screening values to identify dependency. Of these, six use a value of 1.0E-02 and one uses a value of 1.0E-03. The remaining five use a value of 0.1. It appears that all other HEPs are quantified with their nominal values. Use of such low probability values is likely to result in combinations of dependent HEPs being omitted by truncation values. Use of a sufficiently high value	This finding was previously dispositioned as part of the TSTF-505 LAR application. This issue has minimal impact on the enhanced passive categorization application since all risk-significant HRA dependencies are captured through the current methodology and results. A review of the CDF & LERF cutsets was performed to determine if any HRA dependent combinations exist without escalated dependent joint HEPs (i.e., they assume zero dependence and thus the HEPs are unaltered). Separately, a review of the combinations concluded that a majority of the unanalyzed dependent combinations are related to time-phased actions (i.e., early vs. late)

Attachment 4A
Disposition and Resolution of Open Peer Review Findings
Clinton Power Station, Unit 1
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Finding Number	Supporting Requirement(s)	Capability Category (CC)	Description	Disposition for the Enhanced Risk-Informed Categorization Methodology for Pressure Boundary Components
Clinton				
			for HEPs is required by SR QU-C1 and not using a sufficiently high value would result in an inadequate assessment of dependent HEPs. (This F&O originated from SR HR-G7)	where no additional dependency need be assigned between the actions because the time-phased calculations already reflect the impacts of those dependencies. A few legitimate dependent combinations were identified upon further review, however, increasing the dependent joint HEPs for these groups does not substantially impact the overall risk results. Further justification for the chosen truncation level used in the HRA Dependency Analysis is required in a future model update. Therefore, this open item is primarily a documentation issue.
1-34	LE-E1, QU-C1, QU-C2, HR-H3, LE-E4, QU-A5, HR-G7	HR-G7 is MET CAT I-III HR-H3 is MET CAT I-III LE-E1 is MET CAT I-III LE-E4 is MET CAT I-III QU-A5 is MET CAT I-III	Solving the PRA models with some HEPs at nominal can result in cutsets with multiple operator actions being truncated out or with the	See discussion for F&O 1-32.

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Disposition and Resolution of Open Peer Review Findings
Clinton Power Station, Unit 1
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Finding Number	Supporting Requirement(s)	Capability Category (CC)	Description	Disposition for the Enhanced Risk-Informed Categorization Methodology for Pressure Boundary Components
Clinton				
		QU-C1 remains NOT MET QU-C2 is MET CAT I-III	combined probability of all operator actions much below the 1E-6 or 5E-7 floor that the HRA notebook says is used. The peer review team quantified the PRA model with post-initiator HEPs set to 0.1 and identified a significant number of cutsets containing combinations of basic events representing operator action failure. These combinations were reviewed and a large number of combinations identified in this review were not included in the CPS HRA dependency evaluation. (This F&O originated from SR HR-G7)	

ATTACHMENT 4B

Disposition and Resolution of Open Peer Review Findings

Limerick Generating Station, Units 1 and 2

Renewed Facility Operating License Nos. NPF-39 and NPF-85

Docket Nos. 50-352 and 50-353

Subject: License Amendment Request to Incorporate Enhanced Passive Categorization Methodology for 50.69 Implementation

Attachment 4B
Disposition and Resolution of Open Peer Review Findings
Limerick Generating Station, Units 1 and 2
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Finding Number	Supporting Requirement(s)	Capability Category (CC)	Description	Disposition for the Enhanced Risk-Informed Categorization Methodology for Pressure Boundary Components
Limerick				
02-017	SY-C2	Not Met (CC I/II/III)	The peer review team determined that additional documentation and justification are required to demonstrate that the digital I&C modeling approach fully satisfies the applicable Supporting Requirements, including clear identification of modeled and screened components and the basis for digital failure representations.	Four of the six open items associated with this finding are addressed by the application-specific model supporting the Limerick digital I&C PRA model update (Notebook LG-ASM-017 Revision 0). The remaining two items involve documentation and modeling issues associated with selected digital RPS/PPS logic in the PRA. The enhanced passive methodology does not depend on the digital RPS/PPS logic modeling to establish the categorization treatment for passive components. Therefore, this finding does not impact use of the PRA to support the Enhanced Risk-Informed Categorization Methodology for Pressure Boundary Components.
03-006	DA-D1	Not Met (CC-I)	CC-II requires plant-specific evidence and data to support parameter estimates for significant digital basic events. Plant-specific PPS/DCS failure data are not yet available to meet the required capability category.	None. The absence of plant-specific PPS/DCS reliability data does not affect the suitability of the PRA model for use in the Enhanced Risk-Informed Categorization Methodology for Pressure Boundary Components. This finding is data-dependent and will be closed when sufficient plant-specific operating experience is collected to support characterization of digital system failure parameters and associated uncertainties.

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Disposition and Resolution of Open Peer Review Findings
Limerick Generating Station, Units 1 and 2
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Finding Number	Supporting Requirement(s)	Capability Category (CC)	Description	Disposition for the Enhanced Risk-Informed Categorization Methodology for Pressure Boundary Components
Limerick				
				For this application, the enhanced passive methodology does not rely on digital PPS/DCS failure probabilities or parameter estimation for digital basic events to categorize passive pressure-boundary components. Criterion 11 uses the internal events and internal flooding PRA to evaluate pressure-boundary failure consequences and associated risk metrics. The digital I&C parameters remain treated conservatively in the PRA model and do not introduce new PRA methods, apply existing methods in a different context, or create additional Supporting Requirement concerns for this application. Therefore, this finding does not impact use of the PRA to support the Enhanced Risk-Informed Categorization Methodology for Pressure Boundary Components.
03-007	DA-D4	Not Met (CC-I)	A Bayesian update using plant-specific operating experience is required to meet CC-II/III for significant digital basic events. Because the digital PPS/DCS system is newly installed, plant-specific operating history is not yet available.	None. The absence of plant-specific operating experience to support Bayesian updating of digital basic event parameters does not impact the PRA model's suitability for application in the Enhanced Risk-Informed Categorization Methodology for Pressure Boundary Components. The current model treatment remains based on existing methods and assumptions, with sensitivity evaluations used to assess the potential impacts

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Disposition and Resolution of Open Peer Review Findings
Limerick Generating Station, Units 1 and 2
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Finding Number	Supporting Requirement(s)	Capability Category (CC)	Description	Disposition for the Enhanced Risk-Informed Categorization Methodology for Pressure Boundary Components
Limerick				
				of plant-specific data. Digital system failure parameter values and uncertainty distributions remain conservatively maintained until sufficient operating experience becomes available to support Bayesian updating. Therefore, this finding does not impact use of the PRA to support the Enhanced Risk-Informed Categorization Methodology for Pressure Boundary Components.

ATTACHMENT 4C

Disposition and Resolution of Open Peer Review Findings

Peach Bottom Atomic Power Station, Units 2 and 3

Renewed Facility Operating License Nos. DPR-44 and DPR-56

Docket Nos. 50-277 and 50-278

**Subject: License Amendment Request to Incorporate Enhanced Passive Categorization
Methodology for 50.69 Implementation**

Attachment 4C
Disposition and Resolution of Open Peer Review Findings
Peach Bottom Atomic Power Station, Units 2 and 3
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Finding Number	Supporting Requirement(s)	Capability Category (CC)	Description	Disposition for the Enhanced Risk-Informed Categorization Methodology for Pressure Boundary Components
Peach Bottom				
2020-3-01	HR-A2	Met (CC I/II/III)	The peer review determined that the process used to identify potential miscalibration events in the HRA was not sufficiently documented in the PRA notebooks. Although calibration analysis information was available, the documentation did not clearly describe the process used to identify and screen miscalibration events.	The documentation describing the identification and evaluation of miscalibration events has been enhanced in the Pre-Initiator HRA System Notebook (PB-PRA-004, Volume 2, Rev.1). The update provides a detailed description of the process used to identify and quantify miscalibration events. This change was documentation improvement only and did not involve a change to PRA methods, model scope, or results. Therefore, this finding has no impact on the use of the internal events and internal flooding PRA models supporting the Enhanced Risk-Informed Categorization Methodology for Pressure Boundary Components.
2020-3-02	HR-D3	Met (CC II/III)	The peer review determined that documentation of the pre-initiator screening process in the HRA did not sufficiently describe how factors	The Pre-Initiator HRA System Notebook (PB-PRA-004, Volume 2, Rev.1) was updated to provide additional documentation describing how ASEP/THERP

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Disposition and Resolution of Open Peer Review Findings
Peach Bottom Atomic Power Station, Units 2 and 3
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Finding Number	Supporting Requirement(s)	Capability Category (CC)	Description	Disposition for the Enhanced Risk-Informed Categorization Methodology for Pressure Boundary Components
Peach Bottom				
			such as procedures, administrative controls, and the human-machine interface were evaluated in the screening of pre-initiator human failure events.	methodologies evaluate procedure quality, administrative controls, equipment configuration, and I&C layout during the quantification process. The update clarifies how operating experience reviews were used to support these assessments. This change represents improved documentation only and did not change the PRA methodology or model results. Therefore, this finding does not affect the technical adequacy of the PRA models used to support the Enhanced Risk-Informed Categorization Methodology.
2020-1-01	HR-D6	Not Met	The peer review identified that uncertainty distributions for some pre-initiator human failure events were not included in the CAFTA RR file used for PRA uncertainty calculations.	The uncertainty parameters for the affected pre-initiator human failure events were added to the CAFTA uncertainty (.RR) file based on the error factor values documented in Table 6-1 of the Pre-Initiator HRA System Notebook (PB-PRA-004, Volume 2, Rev.1). This update ensures that the uncertainty associated with these human failure events is properly represented in the PRA uncertainty calculations.

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Disposition and Resolution of Open Peer Review Findings
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Finding Number	Supporting Requirement(s)	Capability Category (CC)	Description	Disposition for the Enhanced Risk-Informed Categorization Methodology for Pressure Boundary Components
Peach Bottom				
				The change represents model maintenance and completion of previously missing uncertainty parameters and does not alter the PRA methods or scope used for the internal events and internal flooding models supporting the Enhanced Risk-Informed Categorization Methodology.