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PG&E Letter DCL-25-002

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10 CFR 50.55a(z)(1)

Diablo Canyon Units 1 and 2
Docket No. 50-275, OL-DPR-80
Docket No. 50-323, OL-DPR-82
Proposed Alternative to Use ASME Code Case N-752-1, "Risk-Informed Categorization and Treatment for Repair/Replacement Activities in Class 2 and 3 Systems, Section XI, Division 1"

Dear Commissioners and Staff:

Pursuant to 10 CFR 50.55a(z)(1), Pacific Gas and Electric Company (PG&E) requests NRC authorization for a proposed alternative, GEN-ISI-ALT-2024-01, to the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components."

Authorization is requested to use the alternative requirements of Code Case N-752-1, "Risk-Informed Categorization and Treatment for Repair/Replacement Activities in Class 2 and 3 Systems, Section XI, Division 1," for determining the risk-informed categorization and for implementing alternative treatment for repair/replacement activities on Class 2 and 3 items in lieu of certain ASME Boiler and Pressure Vessel Code, Section XI, IWA-1000, IWA-4000, and IWA-6000 requirements.

Use of the proposed alternative complies with 10 CFR 50.55a(z)(1) which requires that the licensee demonstrate that the proposed alternative provides an acceptable level of quality and safety. The proposed alternative and associated basis are provided in the Enclosure to this letter.

PG&E requests NRC authorization of the proposed alternative within six months of acceptance.

PG&E makes no new or revised regulatory commitments (as defined by NEI 99-04) in this letter. If you have any questions regarding this information, please contact Mr. James Morris, Manager, Regulatory Services, at (805) 545-4609.

Sincerely,

Justin E. Rogers
Station Director

6/26/2025
Date

rntt/51267485
Enclosure

cc: Diablo Distribution
cc/enc: Anthony Chu, Division Chief, California Department of Public Health
Mahdi O. Hayes, NRC Senior Resident Inspector
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Pacific Gas and Electric Company
Diablo Canyon Power Plant, Units 1 and 2

Proposed Alternative GEN-ISI-ALT-2024-01

Proposed Alternative to Use ASME Code Case N-752-1,
"Risk-Informed Categorization and Treatment for Repair/Replacement Activities in Class 2 and 3 Systems, Section XI, Division 1"

In Accordance with 10 CFR 50.55a(z)(1)

-- Alternative Provides Acceptable Level of Quality and Safety --

**Proposed Alternative to Use ASME Code Case N-752-1,
"Risk-Informed Categorization and Treatment for Repair/Replacement Activities in Class 2 and 3 Systems, Section XI, Division 1"
In Accordance with 10 CFR 50.55a(z)(1)**

1. American Society of Mechanical Engineers (ASME) Code Component(s) Affected

This request applies to ASME, Section XI, Class 2 and 3 items or components except the following:

- Class Concrete Containment (CC) and Metal Containment (MC) items.
- Piping within the break exclusion region [>Nominal Pipe Size (NPS) 4 (>DN 100)] for high energy piping systems [a] as defined by the Owner.
- That portion of the Class 2 feedwater system [>NPS 4 (>DN 100)] of pressurized water reactors (PWRs) from the steam generator (SG), including the SG, to the outer containment isolation valve.

a. NUREG-0800, Section 3.6.2 provides a method for defining this scope of piping.

2. Applicable Code Edition and Addenda

The applicable Code Editions and Addenda for the 4th 10-year Inservice Inspection (ISI) interval and 5th 10-year ISI interval at Diablo Canyon Power Plant (DCPP) are as specified below:

Plant	ISI Interval	ASME Section XI Edition/Addenda (References 8.1 & 8.2)	Interval Start Date	Interval End Date
DCPP Unit 1	4	2007 Edition with 2008 Addenda	May 7, 2015	May 6, 2025
DCPP Unit 1	5	2019 Edition	May 7, 2025	May 6, 2035
DCPP Unit 2	4	2007 Edition with 2008 Addenda	March 13, 2016	March 12, 2026
DCPP Unit 2	5	2019 Edition	March 13, 2026	March 12, 2036

3. Applicable Code Requirement

The ASME Boiler and Pressure Vessel Code, Section XI (ASME Section XI), Subsection IWA, provides the requirements for repair/replacement activities including the following:

- IWA-1320 specifies group classification criteria for applying the requirements of ASME Section XI to various Code Classes of components. For example, the requirements in Subsection IWC apply to items classified as ASME Class 2 and in Subsection IWD apply to items classified as ASME Class 3.
    - IWA-1320 is applicable to both the 4th and 5th DCPP ISI Intervals.
- IWA-1400(f) or (g) requires Owners to possess or obtain an arrangement with an Authorized Inspection Agency (AIA) to provide inspection services.
    - IWA-1400(f) is applicable to the 4th DCPP ISI interval and IWA-1400(g) is applicable to the 5th DCPP ISI interval.
- IWA-1400(j) or (k) requires Owners to perform repair/replacement activities in accordance with written programs and plans.
    - IWA-1400(j) is applicable to the 4th DCPP ISI interval and IWA-1400(k) is applicable to the 5th DCPP ISI interval.
- IWA-1400(n) or (o) requires Owners to maintain documentation of a Quality Assurance Program in accordance with 10 CFR Part 50 or ASME NQA-1.
    - IWA-1400(n) is applicable to the 4th DCPP ISI interval and IWA-1400(o) is applicable to the 5th DCPP ISI interval.
- IWA-4000 specifies requirements for performing ASME Section XI repair/replacement activities on pressure-retaining items or their supports. These requirements apply to procurement, design, fabrication, installation, examination, and pressure testing of items within scope.
    - IWA-4000 is applicable to both the 4th and 5th DCPP ISI intervals.
- IWA-6210(d) and (e) or IWA-6211(d) and (e) specify Owner reporting responsibilities such as preparing and completing Form NIS-2, Owner's Repair/Replacement Certification Record.
    - IWA-6210 (d) and (e) are applicable to the 4th DCPP ISI interval and IWA-6211 (d) and (e) are applicable to the to the 5th DCPP ISI interval.
- IWA-6211(f) specifies when the Owner contracts a Repair/Replacement Organization to perform repair/replacement activities, the Owner shall require the Repair/Replacement Organization to provide a document certifying its repair/replacement activities.

    - The provisions of IWA-6211(f) are applicable to the 5th DCPP ISI interval only.
- IWA-6212 specifies a contracted Repair/Replacement Organization shall prepare a document, acceptable to the Owner, certifying its repair/replacement activities.
    - The provisions of IWA-6212 are applicable to the 5th DCPP ISI interval only.
- IWA-6220 repeats the IWA-4150 requirements that a Repair/Replacement Plan be prepared for all repair/replacement activities, requires Form NIS-2 be completed prior to completing the Owner's Activity Report (Form OAR-1), identifies certification and retention requirements for Form NIS-2, and includes the requirement for maintaining an index of Repair/Replacement Plans.
    - Code Case N-752-1 is based on the 2021 Edition of ASME Section XI while the DCPP 4th Interval Code of record is the 2007 Edition with 2008 Addenda. IWA-6220 applies to Owner's Repair/Replacement Certification Record in the 2021 Edition; for the 2007 Edition/2008 Addenda, IWA-6220 applies to Preparation of Abstract of Examination Required by Form NIS-1 and therefore this portion of Code Case N-752-1 is not applicable in the 2007 Edition with 2008 Addenda.
- IWA-6350 specifies that the following ASME Section XI repair/replacement activity records must be retained by the Owner: evaluations required by IWA-4160(a), IWA-4160(b), and IWA-4311; Repair/Replacement Programs and Plans; records and reports of repair/replacement activities; reconciliation documentation; NIS-2 Forms; and documents certifying repair/replacement activities by contractors.
    - IWA-6350 is applicable to both the 4th and 5th DCPP ISI intervals. However, requirements to retain reports of repair/replacement activities and documents certifying repair/replacement activities by contractors are only applicable to the 5th DCPP ISI interval.

4. Reason for Request

Pacific Gas and Electric Company (PG&E) currently performs ASME Section XI Repair/Replacement Activities at DCPP Units 1 and 2, in accordance with a deterministic Repair/Replacement Program based on the requirements of ASME Section XI. Repair/Replacement Program requirements apply to procurement, design, fabrication, installation, examination, and pressure testing of items within the scope of ASME Section XI. Repair/replacement activities include welding; brazing; defect removal; metal removal using thermal processes; re-rating; and removing, adding, or modifying pressure-retaining items or supports. Repair/replacement activities are performed in accordance with DCPP's Quality Assurance (QA) Program and ASME Section XI. In applying a deterministic approach to repair/replacement activities, a safety class (e.g., ASME Class 2 or 3) is assigned to every component within a system based on system function. The same treatment requirements are

then applied to every component within the system without considering the risk associated with the probability that a specific item or component may or may not be functional at a time when needed.

Alternatively, a probabilistic approach to regulation enhances and extends the traditional deterministic approach by: allowing consideration of a broader set of potential challenges to safety, providing a logical means for prioritizing these challenges based on safety significance, and allowing consideration of a broader set of resources to defend against these challenges. In contrast to the deterministic approach, Probabilistic Risk Assessment (PRA) addresses credible initiating events by assessing the event frequency. Mitigating system reliability is then assessed, including the potential for common cause failures. The probabilistic approach to regulation is an extension and enhancement of traditional regulation by considering risk in a comprehensive manner. In 2004, the NRC promulgated 10 CFR 50.69 relating to risk-informed categorization and treatment of structures, systems, and components (SSCs) for nuclear power plants (Reference 8.3). This regulation permits power reactor licensees to implement an alternative regulatory framework with respect to "special treatment" (treatment beyond normal industrial practices) of low-safety-significant (LSS) SSCs. In May 2006, the NRC staff issued Regulatory Guide (RG) 1.201 (For Trial Use), “Guidelines for Categorizing Structures, Systems, and Components in Nuclear Power Plants According to Their Safety Significance,” Revision 1 (Reference 8.4). RG 1.201 endorses a method, with conditions, for categorizing active SSCs described in Nuclear Energy Institute (NEI) 00-04, “10 CFR 50.69 SSC Categorization Guideline,” Revision 0 (Reference 8.15).

PG&E is not requesting NRC approval to implement 10 CFR 50.69 in this request. As noted below in Section 5.2.C, PG&E has already submitted a License Amendment Request (LAR) for approval of 10 CFR 50.69 at DCPP Units 1 and 2 (Reference 8.5), and that LAR has been approved (Reference 8.16). This alternative request does not change any obligations with regards to Reference 8.5. Instead, PG&E is proposing to implement the risk-informed categorization and treatment requirements of ASME Code Case N-752-1 when performing repair/replacement activities on Class 2 and 3 pressure-retaining items or their associated supports categorized as LSS. Code Case N-752-1, approved by ASME in April 2021, employs a comprehensive categorization process requiring input from both a PRA model and deterministic insights. This approach will enable evaluation, categorization, and implementation of alternative treatments for resolution of emergent issues in LSS segments of piping/SSCs. Use of Code Case N-752-1 will also allow PG&E to identify, and more clearly focus engineering, maintenance, and operations resources on, critical components with high safety-significance, thus enabling PG&E to make more informed decisions and increase the safety of the plant. PG&E requests no exceptions or deviations to the code case, including all definitions.

5. Proposed Alternative and Basis for Use

Pursuant to 10 CFR 50.55a(z)(1), PG&E proposes to implement ASME Code Case N-752-1, without exception, as an alternative to the ASME Section XI requirements specified in Section 3 above. ASME Code Case N-752-1 provides a process for determining the risk-informed categorization and treatment requirements for Class 2 and 3 pressure-retaining items or their associated supports as delineated in Section 1. This requested implementation includes the categorization of passive SSCs (e.g., piping) and implementation of alternative special treatment activities limited to the repair/replacement activities for Class 2 and 3 pressure-retaining items or their associated supports. For components that have both active and passive functions, only the passive function will be categorized. The alternative treatments associated with ASME Code Case N-752-1 will not be applied to the parts/components associated with the active function. Code Case N-752-1 may be applied on a system basis or on individual items within selected systems. Code Case N-752-1 does not apply to Class 1 items.

The use of this proposed alternative is requested on the basis that requirements in Code Case N-752-1 will provide an acceptable level of quality and safety.

5.1 Overview of Code Case N-752-1

Code Case N-752-1 provides for risk-informed categorization and treatment requirements for performing repair/replacement activities on Class 2 and 3 pressure-retaining items or their associated supports. ASME Code Case N-752-1 is not applicable to the following:

- Class CC and MC items.
- Piping within the break exclusion region [>NPS 4 (>DN 100)] for high energy piping systems as defined by the Owner.
- That portion of the Class 2 feedwater system [>NPS 4 (>DN 100)] of PWRs from the SG, including the SG, to the outer containment isolation valve.

ASME Code Case N-752-1 categorization methodology relies on the conditional core damage and large early release probabilities associated with postulated events. Safety significance is generally measured by the frequency and the consequence of the event. However, the risk-informed process categorizes components solely based on consequence, which measures the safety significance of the component given that it fails (component failure is assumed with a probability of 1.0). This approach is conservative compared to including the failure frequency in the categorization as this approach will not allow the categorization of SSCs to be affected by any changes in frequency due to changes in treatment. It additionally applies deterministic considerations (e.g., defense-in-depth, safety margins) in determining safety significance. Additional detail is provided in Section 5.2.

The risk-informed process categorizes components as either high-safety-significant (HSS) or LSS. HSS components must continue to meet ASME Section XI requirements for repair/replacement activities. LSS components are exempt from ASME Section XI repair/replacement requirements and can be repaired/replaced in accordance with treatment requirements established by the Owner and the Construction Code, or post-construction code or standard. The treatment requirements must provide reasonable confidence that each LSS item remains capable of performing its safety-related functions under design basis conditions. Component supports, if categorized, are assigned the same safety significance, HSS or LSS, as the highest passively ranked segment within the bounds of the associated analytical pipe stress model. The categorization and treatment requirements of Code Case N-752-1 are consistent with those in 10 CFR 50.69.

It should be noted that Code Case N-752, the predecessor of N-752-1, is based on Arkansas Nuclear One, Unit 2 (ANO-2), relief request ANO2-R&R-004, Revision 1, dated April 17, 2007 (Reference 8.6), as supplemented by Entergy. The NRC approved that relief request in a safety evaluation dated April 22, 2009 (Reference 8.7). The ANO-2 relief request was developed to serve as an industry pilot for implementing a risk-informed repair/replacement process that included a risk-informed categorization process and treatment requirements. References 8.6 and 8.7 are also applicable to Code Case N-752-1, since the technical requirements of both Code Case N-752 and Code Case N-752-1 are equivalent.

5.2 Basis for Use

The information below is provided as a basis or justification for PG&E's proposed alternative to implement the risk-informed categorization and treatment requirements of Code Case N-752-1 on Class 2 and 3 pressure-retaining items or their associated supports as delineated in Section 1.

A. Application to Individual Items Within a System

The risk-informed methodology of Code Case N-752-1 may be applied on a system basis or on individual items within selected systems. Paragraph-1100 of Code Case N-752-1 states: “This Case may be applied on a system basis, including all pressure-retaining items and their associated supports, or on individual items categorized as low-safety-significant (LSS) within the selected systems.” While this is the case, the risk-informed methodology is applied to the pressure boundary function of the individual components within the system. The risk-informed methodology contained in Code Case N-752-1 requires that the component’s pressure boundary function be assumed to fail with a probability of 1.0, and all impacts caused by the loss of the pressure boundary function be identified. This would include identifying impacts of the pressure boundary failure on the component under evaluation, identifying impacts of the pressure boundary failure of the component on the system in

which the component resides, as well as identifying impacts of the pressure boundary failure of the component on any other plant SSC. This includes direct effects (e.g., loss of the flow path) of the component failure and indirect effects of the component failure (e.g., flooding, spray, pipe whip, loss of inventory). This comprehensive assessment of total plant impact caused by a postulated individual component failure is then used to determine the final consequence ranking. As such, the final consequence ranking of the individual component would be the same regardless of whether the entire system or only the individual component is subject to the risk-informed methodology.

B. Categorization Process

The categorization process of Code Case N-752-1 is delineated in Appendix I of the Code Case. This categorization process is technically equivalent to the process approved by the NRC under Relief Request ANO2-R&R-004, Revision 1 (Reference 8.6), which, in turn, is based on founding principles in Electric Power Research Institute (EPRI) Report TR-112657, Revision B-A, “Revised Risk-Informed Inservice Inspection Evaluation Procedure,” and the categorization process of Code Case N-660, but with improvements and lessons learned from trial applications. A comparison of the ANO2-R&R-004, Revision 1, categorization methodology to that of Code Case N-752 was provided by Entergy in Enclosure Attachment 1 of Precedent 7.1. Precedent 7.1 is also applicable to the Code Case N-752-1, since the categorization methodology of both Code Case N-752 and Code Case N-752-1 are equivalent.

The ASME Code Case N-752-1 risk-informed categorization evaluation is performed by an Owner-defined team that includes members with expertise in PRA, plant operations, system design, and safety or accident analysis. The risk-informed categorization process is based on the conditional consequence of failure, given that a postulated failure has occurred. A consequence category for each piping segment or component is determined via a failure modes and effects analysis (FMEA) and impact group assessment. The FMEA considers pressure boundary failure size, isolability of the break, indirect effects, initiating events, system impact or recovery, system redundancy, and system configuration. The results of the FMEA for each system, or portion thereof, are partitioned into core damage impact groups based on postulated piping failures that (1) cause an initiating event, (2) disable a system/train/loop without causing an initiating event, or (3) cause an initiating event and disable a system/train/loop.

Failures are also evaluated for their importance relative to containment performance. In addition, the consequence rank is reviewed and adjusted to reflect the pressure boundary failure’s impact on plant operation during

shutdown and on the mitigation of external events. Credit may be taken for plant features and operator actions to the extent these would not be adversely affected by failure of the piping segment or component under consideration.

Consequence evaluation results are ranked as High, Medium, Low, or None (no change to base case). Piping segments/components ranked as High by the consequence evaluation process are considered HSS and require no further review. Piping segments/components ranked as Medium, Low, or None by the consequence evaluation shall be determined to be HSS or LSS by evaluating the additional categorization considerations or conditions outlined in paragraph I-3.4.2(b) of ASME Code Case N-752-1. If any of these conditions are not met, then HSS shall be assigned. If all conditions are met, then LSS may be assigned. If LSS is assigned, the categorization process shall verify that there are sufficient margins to account for uncertainty in the engineering analysis and supporting data. If sufficient margin exists, then LSS should be assigned. If sufficient margin does not exist, then HSS shall be assigned.

C. PRA Technical Adequacy

Appendix I, Section I-3.2 of Code Case N-752-1 requires that the plant-specific PRA shall be assessed to confirm it is applicable to the safety-significant categorization of Code Case N-752-1, including verification of assumptions on equipment reliability for equipment not within the scope of the code case.

The DCPP PRA model was described in detail in two recent submittals: (a) License Amendment Request to adopt Risk-Informed Completion Times, dated July 13, 2023 (Reference 8.8), which was approved by NRC in May 2024 (Reference 8.9); and (b) License Amendment Request to adopt 10 CFR 50.69, dated September 27, 2023 (Reference 8.5), which was approved by NRC in December 2024 (Reference 8.16).

PG&E employs a multi-faceted approach to establishing and maintaining the technical adequacy and fidelity of the PRA models for Diablo Canyon. This approach includes both a PRA maintenance and update process, and the use of self-assessments and independent peer reviews.

The Diablo Canyon PRA models are at-power models consisting of four hazard models: internal events, internal flooding, internal fire, and seismic events. Each hazard model applies the internal events model as the base model. The models can evaluate both the core damage frequency and large early release frequency.

The internal hazards PRA models (i.e., internal events, internal flooding, and internal fire) discussed in this Enclosure have been peer reviewed and

assessed using PRA Standard ASME/American Nuclear Society (ANS) RA-Sa-2009 (Reference 8.10) and RG 1.200, Revision 2 (Reference 8.11). The seismic PRA model has been peer reviewed and assessed using ASME/ANS RA-Sb-2013 (Reference 8.14). Each peer review identified Facts and Observations (F&Os) for supporting requirements of the relevant parts of the PRA standard applicable to the scope of the peer review. These included: findings for elements that did not meet at least Capability Category II of a supporting requirement of the standard; suggestions from the peer review team for elements that met the supporting requirement but could be improved; and best practices. Capability Categories I, II, and III are defined in PRA Standard ASME/ANS RA-Sa-2009 (Reference 8.10).

The review and closure of finding-level F&Os was performed by an independent assessment team using the process documented in Appendix X to NEI 05-04/07-12/12-16, “Close-out of Facts and Observations (F&Os)” (Reference 8.12). The reviews met the requirements of NEI 17-07, “Performance of PRA Peer Reviews Using the ASME/ANS PRA Standard,” Revision 2 (Reference 8.13).

Each assessment team (internal events including internal flooding, fire, and seismic) evaluated whether each F&O was closed through the application of a PRA maintenance or upgrade activity, as defined by the PRA standard. If closure of an F&O was identified as an upgrade, a focused scope peer review was conducted. Further, the assessment team re-evaluated any supporting requirements identified by the peer review to be either not met, or met at Capability Category I, to determine whether closure of the associated F&O(s) resulted in a change in status to either met or met at least at Capability Category II.

The PRA scope and technical adequacy are met for this application as the applicable PRA Standard supporting requirements for all models are met at Capability Category II or higher. There are no remaining open finding-level F&Os for any of the models discussed in this application, and all finding-level F&Os have been independently assessed and closed using the processes discussed above. The resolved findings and the basis for resolution are documented in the Diablo Canyon PRA documentation and the F&O Closure Review reports. The results of the peer reviews and independent assessments have been documented and are available for NRC review. The PRA models and F&O Closure Review reports were reviewed by the NRC during the TSTF-505 audit (Reference 8.8).

D. Feedback and Process Adjustment

DCPP will evaluate new insights resulting from available risk information changes (i.e., PRA model or other analysis used in the categorization), plant

design changes, operational changes, and SSC performance. If it is determined that these changes have affected the risk information or other elements of the categorization and treatment processes such that the categorization results are more than minimally affected, then the risk information (PRA) and the categorization and treatment processes will be updated. DCPP shall perform this review in a timely manner but at intervals no longer than once every two refueling outages. This approach is consistent with the feedback and adjustment process of 10 CFR 50.69(e).

E. Treatment Requirements for LSS Items

Code Case N-752-1 exempts LSS items, which have been categorized as LSS in accordance with the code case, from having to comply with the repair/replacement requirements of ASME Section XI. Exempted ASME Code requirements for LSS items are outlined in Section 3, above. In lieu of these requirements, Code Case N-752-1, Paragraph -1420 requires the Owner to define alternative treatment requirements that confirm with reasonable confidence that each LSS item remains capable of performing its safety-related functions under design basis conditions. These Owner treatment requirements must address or include all the provisions stipulated in Code Case N-752-1, Paragraphs -1420(a) through (j) of the code case. It should be noted that this approach to treatment is consistent with RISC-3 treatment requirements specified in 10 CFR 50.69(d)(2).

To comply with the above, DCPP will develop and/or revise existing procedures and documents to define treatment requirements for performing repair/replacement activities on LSS items in accordance with Code Case N-752-1. Defined treatment requirements will address design control, procurement, installation, configuration control, and corrective action. These procedures and documents also include provisions which address/implement the following requirements:

1. Administrative controls for performing these repair/replacement activities.

2. The fracture toughness requirements of the original Construction Code and Owner's Requirements shall be met.

3. Changes in configuration, design, materials, fabrication, examination, and pressure testing requirements used in the repair/replacement activity shall be evaluated, as applicable, to ensure the structural integrity and leak tightness of the system are sufficient to support the design bases functional requirements of the system.

4. Items used for repair/replacement activities shall meet the Owner's Requirements or revised Owner's Requirements as permitted by the licensing basis.

5. Items used for repair/replacement activities shall meet the Construction Code to which the original item was constructed. Alternatively, items used for repair/replacement activities shall meet the technical requirements of a nationally recognized code, standard, or specification applicable to that item as permitted by the licensing basis. Technical requirements are those that affect materials, design, fabrication, or examination, and affect the pressure boundary or component support function.

6. The repair methods of nationally recognized post construction codes and standards (e.g., ASME Post Construction Code, PCC-2, American Petroleum Institute standard, API-653) applicable to the item may be used.

7. Performance of repair/replacement activities, and associated non-destructive examination (NDE), shall be in accordance with the Owner's Requirements and, as applicable, the Construction Code, or post construction code or standard, selected for the repair/replacement activity. Alternative examination methods may be used as approved by the Owner. NDE personnel may be qualified in accordance with IWA-2300 in lieu of the Construction Code.

8. Pressure testing of the repair/replacement activity shall be performed in accordance with the requirements of the Construction Code selected for the repair/replacement activity or shall be established by the Owner.

9. Baseline examination (e.g., preservice examination) of the items affected by the repair/replacement activity, if required, shall be performed in accordance with requirements of the applicable program(s) specifying periodic inspection of items. See paragraph 5.2.E.11, below, for additional details.

10. Implementation of Code Case N-752-1 does not negate or affect PG&E commitments to regulatory and enforcement authorities having jurisdiction at DCPP Units 1 and 2.

11. Periodic ISI and inservice testing (IST) of LSS items at DCPP Units 1 and 2 will be performed as follows:

    - ISI of LSS pressure-retaining items or their associated supports will be performed in accordance with the site's ISI program implemented in accordance with 10 CFR 50.55a.
    - IST of pumps and valves that have been classified as LSS will be performed in accordance with the site's IST program implemented in

accordance with 10 CFR 50.55a.

- IST of snubbers that have been classified as LSS will be performed in accordance with the site's Snubber Testing program implemented in accordance with 10 CFR 50.55a.
- Inspections of LSS items performed under other plant programs, such as the Flow Accelerated Corrosion program, will continue to be performed under those programs for the site.

12. Adverse conditions identified in LSS components will be entered in the DCPP corrective action program, which satisfies 10 CFR 50 Appendix B criteria for corrective action. Conditions that would prevent an LSS item from performing its safety-related function(s) under design basis conditions will be corrected in a timely manner. For SSCs under 10 CFR 50.36, "Technical Specifications," adverse conditions will be addressed within the timeline of the limiting conditions for operation, or the necessary action statements will be performed. For significant conditions adverse to quality, measures will be taken to provide reasonable confidence that the cause of the condition is determined, and corrective action taken to preclude repetition. The DCPP corrective action process takes appropriate actions to monitor, investigate, and/or correct undesired conditions with the level of emphasis and effort commensurate with the risk and significance of the issue. Finally, this approach to corrective action of LSS items is consistent with the NRC position on corrective action of RISC-3 SSCs as specified in 10 CFR 50.69(d)(2)(ii).

13. As permitted by Code Case N-752-1, PG&E intends to implement the exemption from IWA-1400(f)[1] or IWA-1400(g)[2] and IWA-4000 applicable to utilization of an Authorized Inspection Agency (AIA) and Authorized Nuclear Inservice Inspector (ANII) when performing repair/replacement activities on LSS items. In lieu of ANII inspection services, PG&E believes that its proposed treatment requirements, as described herein, provide reasonable confidence that LSS systems and items remain capable of performing their safety-related functions when repair/replacement activities are performed without the inspection services of an ANII. It should also be noted that the exemption of ANII services is not unique to Code Case N-752-1. Utilization of ANII inspection services is already exempt by ASME Section XI for certain items and activities, such as small items (IWA-4131) and rotation of items for testing or preventative maintenance (IWA-4132). Finally, exemption of AIA/ANII services for this code case application is consistent with the NRC's position on risk-informed programs as specified in 10 CFR 50.69(b)(1)(v).

14. Code Case N-752-1 paragraph -1420 allows LSS items to be exempt

from certain ASME Section XI requirements, including subparagraph IWA-1400(n)[1] or IWA-1400(o),[2] and article IWA-4000. However, Code Case N-752-1 does not allow exemption from ASME Section XI subparagraph IWA-1400(n)[1] or IWA-1400(o)[2] if compliance with 10 CFR 50 Appendix B or NQA-1 is required at the Owner's facility. It should be noted that DCPP is required to comply with 10 CFR 50 Appendix B and ANSI N45.2, with exceptions. As a result, DCPP will amend the Quality Assurance Program Description (QAPD) for safety-related Class 2 and 3 SSCs identified as LSS in accordance with ASME Code Case N-752-1 to not be required to meet the requirements of the QAPD.

DCPP will define alternative treatment requirements that confirm with reasonable confidence that each Class 2 and 3 LSS SSC will remain capable of performing its safety-related function under design-basis conditions. In doing so, DCPP will use the updated QA Program processes and procedures with additional controls for the treatment of Class 2 and 3 LSS components to reasonably assure continued capability and reliability of the design-basis function(s). This includes confirming, with reasonable confidence, that changes to the configuration, design, material, fabrication, examination, and testing requirements used to support repair/replacement activities on Class 2 and 3 LSS SSCs are performed in accordance with DCPP's design change process. In addition, any condition that may prevent a LSS SSC from performing its design-basis function will be captured, evaluated, and addressed in DCPP's corrective action program. For the procurement of Class 2 and 3 LSS components as non-safety-related for repair/replacement activities in accordance with ASME's Code Case N-752-1, supplemental procurement requirements will be specified, and additional controls will be implemented as appropriate to provide reasonable assurance that Class 2 and 3 LSS SSCs will remain capable of performing their safety-related function under design basis conditions.

DCPP has reviewed the guidance provided in the recent NRC Information Notice (IN) 2025-01 (Reference 8.17). As discussed in the Information Notice, the alternative supplemental processes and procedures for safety-related Class 2 and Class 3 LSS items within the scope of the Code Case N-752-1 will satisfy the requirements of Appendix B to 10 CFR Part 50, given the low safety significance of individual safety-related Class 2 and Class 3 LSS items within the scope of ASME Code Case N-752-1. These alternate QA methods only apply to the LSS function of an item.

In summary, DCPP will amend the QAPD and develop alternative treatment requirements, processes, and procedures, to provide reasonable assurance that each Class 2 and 3 LSS SSC remains capable of performing its design-basis function, and the DCPP QAPD will continue

to provide an acceptable level of quality and safety.

Proposed changes to the QAPD will be evaluated to identify any potential reduction in commitment. If required, a separate request will be submitted for NRC review and approval, prior to implementation, in accordance with 10 CFR 50.54(a)(4).

15. As permitted by Code Case N-752-1, DCPP intends to implement the exemptions from IWA-1400(j)[1] or IWA-1400(k),[2] and IWA-4000 applicable to repair/replacement programs and plans. In lieu of these ASME Section XI administrative controls, DCPP will establish Owner-defined administrative controls as required by paragraph -1420(a) of Code Case N-752-1. DCPP will utilize its existing work management processes for planning and documenting the performance of repair/replacement activities and supplement those process requirements as necessary to comply with Code Case N-752-1. These controls will confirm, with reasonable confidence, that repair/replacement activities on LSS items are performed in accordance with work instructions that have been appropriately planned, reviewed, and implemented. It should also be noted that the exemption of Repair/Replacement Plans required by IWA-1400(j)[1] or IWA-1400(k),[2] and IWA- 4150 is not unique to Code Case N-752-1. Repair/Replacement Plans are already exempt by ASME Section XI for certain items and activities such as small items (IWA-4131) and rotation of items for testing or preventative maintenance (IWA- 4132). Finally, the exemption of ASME Section XI programs and plans and the alternative use of Owner-defined administrative requirements on LSS items is consistent with the NRC's position on risk-informed programs as specified in 10 CFR 50.69(b)(1)(v).

16. As permitted by Code Case N-752-1, DCPP intends to implement the exemption on IWA-4000 applicable to repair/replacement activities. Article IWA-4000 of ASME Section XI specifies administrative, technical, and programmatic requirements for performing repair/replacement activities on pressure-retaining items and their supports. As specified in IWA-4110(b), repair/replacement activities "include welding, brazing, defect removal, metal removal by thermal means, rerating, removing, adding, or physically modifying pressure-retaining items or supports, or adding systems. These requirements are applicable to procurement, design, fabrication, installation, examination, and pressure testing of items within the scope of this Division." In lieu of these IWA-4000 requirements, DCPP will perform repair/replacement activities on LSS items in accordance with an Owner-defined program that complies with paragraph -1420 of ASME Code Case N-752-1. The DCPP program will utilize existing DCPP processes, such as those applicable to

procurement, design, re-rating, fabrication, installation, modifications, welding, defect removal, or metal removal by thermal processes, and supplement those process requirements as necessary to comply with Code Case N-752-1. PG&E believes this program will confirm, with reasonable confidence, that LSS items remain capable of performing their safety-related functions under design basis conditions. Finally, the exemption of IWA-4000 requirements and the alternative use of Owner-defined treatment requirements for LSS items is consistent with the NRC's position on risk-informed programs as specified in 10 CFR 50.69(b)(1)(v) and (d)(2).

17. As permitted by Code Case N-752-1, DCPP intends to implement the documentation exemptions on IWA-6210(d),[1] IWA-6210(e),[1] IWA-6211(d),[2] IWA-6211(e),[2] and IWA-6350.[5] These ASME Section XI paragraphs address preparation and retention of various ASME Section XI records such as Form NIS-2, IWA-4160[1, 2] verification of acceptability evaluations, IWA-4311[1, 2] evaluations, Repair/Replacement Plans, and reconciliation documentation. In lieu of these ASME Section XI forms and evaluations, the following repair/replacement activity records shall be retained in accordance with DCPP's Owner-defined program for performing repair/replacement activities on LSS items.

    - Repair/replacement activity documentation.
    - Evaluations of LSS items that do not comply with requirements of the applicable Construction Code, standard, specification, and/or design specification. See also paragraph 5.2.E.12 above.
    - Evaluations and documentation of design and configuration changes, including material changes.

18. As permitted by Code Case N-752-1, DCPP intends to implement the documentation exemptions on IWA-6211(f)[3] and IWA-6212.[3] These ASME Section XI paragraphs address the requirements for documentation provided by a contracted Repair/Replacement Organization certifying the repair/replacement activities performed by the Repair/Replacement Organization.

19. As permitted by Code Case N-752-1, DCPP intends to implement the documentation exemption on IWA-6220.[4] This sub-article addresses the Repair/Replacement Plan as required by IWA-4150[1, 2] that includes completion, certification, retention, and indexing of the Form NIS-2.

In addition to the above, DCPP will also revise applicable licensing basis

documents (e.g., Updated Final Safety Analysis Report), as appropriate, to identify systems, subsystems, or individual items that have been categorized as LSS and address alternative treatment requirements. Changes to licensing basis documents will be performed in accordance with 10 CFR 50.59.

F. Conclusion

ASME Code Case N-752-1 specifies requirements for performing risk-informed categorization and treatment for performing repair/replacement activities on Class 2 and 3 pressure-retaining items or associated supports. The ASME Code Case N-752-1 categorization process provides a comprehensive methodology for determining the safety significance of items—HSS or LSS. This categorization process is technically identical to that approved by the NRC under relief request ANO2-R&R-004, Revision 1 (Reference 8.6).

Repair/replacement activities performed on items determined to be HSS as well as uncategorized must continue to comply with their applicable nuclear special treatment requirements (e.g., Quality Assurance requirements, Repair/Replacement per ASME Section XI requirements, etc.). Repair/replacement activities performed on LSS items may comply with alternative treatment requirements that are defined by the Owner but must comply with all provisions of paragraph -1420 of ASME Code Case N-752-1. PG&E's proposed treatment requirements, as described herein, meet these criteria, and provide reasonable confidence that LSS systems and items remain capable of performing their safety-related functions under design basis conditions. Finally, categorization and treatment requirements of Code Case N-752-1 applicable to repair/replacement activities are consistent with NRC requirements specified in 10 CFR 50.69.

[1]ASME Section XI 2007 Edition with 2008 Addenda.

[2]ASME Section XI 2019 Edition.

[3]Code Case N-752-1 is based on the 2021 Edition of ASME Section XI; the cited reference does not exist in ASME Section XI 2007 Edition with 2008 Addenda.

[4]Code Case N-752-1 is based on the 2021 Edition of ASME Section XI while the 4th DCPP ISI Interval Code of record is the 2007 Edition with 2008 Addenda. IWA-6220 applies to Owner's Repair/Replacement Certification Record in the 2021 Edition; for the 2007 Edition/2008 Addenda, IWA-6220 applies to Preparation of Abstract of Examination Required by Form NIS-1. Therefore this portion of Code Case N-752-1 is not applicable in the 2007 Edition with 2008 Addenda.

[5]IWA-6350 exists in both the 2007 Edition with 2008 Addenda and the 2019 Edition of ASME Section XI, however the 2019 Edition includes added requirements for records and reports of repair/replacement activities, as well as documents certifying repair/replacement activities by contracted Repair/Replacement Organizations.

6. Duration of Proposed Alternative

The duration of this proposed alternative for the 4th and 5th 10-year ISI intervals at DCPP is shown below:

Plant	ISI Interval	ASME Section XI Edition/Addenda (References 8.1 & 8.2)	Interval Start Date	Interval End Date
DCPP Unit 1	4	2007 Edition with 2008 Addenda	May 7, 2015	May 6, 2025
DCPP Unit 1	5	2019 Edition	May 7, 2025	May 6, 2035
DCPP Unit 2	4	2007 Edition with 2008 Addenda	March 13, 2016	March 12, 2026
DCPP Unit 2	5	2019 Edition	March 13, 2026	March 12, 2036

7. Precedent

1. Entergy Operations, Inc., Arkansas Nuclear One, Units 1 and 2, Request for Relief No. EN-20-RR-001, submitted May 27, 2020 (ADAMS Accession No. ML20148M343), approved May 19, 2021 (ADAMS Accession No. ML21118B039).
2. Entergy Operations, Inc., Arkansas Nuclear One, Units 1 and 2, Reduction of Commitment to the Entergy Operation's Quality Assurance Program Manual Description, submitted October 26, 2020 (ADAMS Accession No. ML20300A324), approved May 19, 2021 (ADAMS Accession No. ML21132A279).
3. NextEra Energy, Fleet Relief Request (FRR) 23-01, Proposed Alternative to ASME Section XI Authorizing Implementation of ASME Code Case N-752-1, submitted March 15, 2023 (ADAMS Accession No. ML23074A155), approved June 12, 2024 (ADAMS Accession No. ML24149A286).

8. References

1. American Society of Mechanical Engineers Boiler and Pressure Vessel Code, Section XI (ASME Section XI), 2007 Edition with 2008 Addenda.

2. American Society of Mechanical Engineers Boiler and Pressure Vessel Code, Section XI (ASME Section XI), 2019 Edition.

3. 10 CFR 50.69, "Risk-Informed Categorization and Treatment of Structures, Systems, And Components for Nuclear Power Reactors," USNRC, 69 FR 68047, Nov. 22, 2004.

4. U.S. Nuclear Regulatory Commission, Regulatory Guide 1.201 (For Trial Use), "Guidelines for Categorizing Structures, Systems, and Components in Nuclear Power Plants According to Their Safety Significance," Revision 1, dated May 2006.

5. PG&E Letter DCL-23-077, “License Amendment Request 23-02, Application to Adopt 10 CFR 50.69, ‘Risk-Informed Categorization and Treatment of Structures, Systems and Components for Nuclear Power Reactors,’” dated September 27, 2023 (ADAMS Accession No. ML23270B909).

6. Entergy Letter to NRC dated April 17, 2007, "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 Energy Systems" (ADAMS Accession No. ML071150108), as supplemented by letters dated August 6, 2007 (ADAMS Accession No. ML072220160), February 20, 2008 (ADAMS Accession No. ML080520186), and January 12, 2009 (ADAMS Accession No. ML090120620).

7. Safety Evaluation Report (SER) by the Office of Nuclear Reactor Regulation "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," dated April 22, 2009 (ADAMS Accession No. ML090930246).

8. PG&E Letter DCL-23-054, “License Amendment Request 23-01, Revision to Technical Specifications to Adopt Risk-Informed Completion Times, TSTF-505, Revision 2, ‘Provide Risk-Informed Extended Completion Times – RITSTF Initiative 4b,’” dated July 13, 2023 (ADAMS Accession No. ML23194A228).

9. NRC Letter to PG&E re: “DIABLO CANYON NUCLEAR POWER PLANT, UNITS 1 AND 2 - ISSUANCE OF AMENDMENT NOS. 245 AND 247 RE: REVISION TO TECHNICAL SPECIFICATIONS TO ADOPT TSTF-505, REVISION 2, ‘PROVIDE RISK-INFORMED EXTENDED COMPLETION TIMES – RITSTF INITIATIVE 4b,’” dated May 29, 2024 (ADAMS Accession No. ML24099A219).

10. ASME/ANS RA-Sa-2009, “Standard for Level 1/Large Early Release Frequency Probabilistic Risk Assessment for Nuclear Power Plant Applications,” Addendum A to RA-S-2008, ASME, New York, New York, American Nuclear Society, La Grange Park, Illinois, February 2009.
11. NRC Regulatory Guide 1.200, “An Approach for Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed Activities,” Revision 2, March 2009. (ADAMS Accession No. ML090410014).
12. NEI Letter to NRC, “Final Revision of Appendix X to NEI 05-04/07-12/12-16, ‘Close-out of Facts and Observations (F&Os),’” February 21, 2017 (ADAMS Accession No. ML17086A431).
13. NEI 17-07, Revision 2, “Performance of PRA Peer Reviews Using the ASME/ANS PRA Standard,” August 2019. (ADAMS Accession No. ML19228A242).
14. ASME/ANS RA-Sb-2013, “Addenda to ASME/ANS RA-S-2008 Standard for Level 1/Large Early Release Frequency Probabilistic Risk Assessment for Nuclear Power Plant Applications,” ASME and the American Nuclear Society, June 2013.
15. NEI Guideline 00-04, “10 CFR 50.69 SSC Categorization Guideline,” Revision 0, July 2005 (ADAMS Accession No. ML052910035)
16. NRC Letter to PG&E re: “DIABLO CANYON NUCLEAR POWER PLANT, UNITS 1 AND 2 – ISSUANCE OF AMENDMENT NOS. 247 AND 249 RE: ADOPTION OF 10 CFR 50.69, ‘RISK-INFORMED CATEGORIZATION AND TREATMENT OF STRUCTURES, SYSTEMS AND COMPONENTS FOR NUCLEAR POWER REACTORS’ (EPID L-2023-LLA-0137),” dated December 11, 2024 (ADAMS Accession No. ML24269A083).
17. NRC INFORMATION NOTICE 2025-01: LESSONS LEARNED WHEN IMPLEMENTING ASME CODE CASE N-752, dated February 10, 2025