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PG&E Letter DCL-06-125

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Docket No. 50-275, OL-DPR-80
Docket No. 50-323, OL-DPR-82
Diablo Canyon Power Plant Units 1 and 2
Old Steam Generator Storage Facility Seismic Design

Dear Commissioners and Staff:

Pacific Gas and Electric Company (PG&E) is in the process of replacing the Diablo Canyon Units 1 and 2 steam generators (SG). As part of this project, PG&E is installing an Old Steam Generator Storage Facility (OSGSF) outside the Protected Area and within the site Owner Controlled Area. The OSGSF will be used to provide temporary storage of the old SG removed from Units 1 and 2 containment buildings. The OSGSF design includes an additional storage area that will accommodate future temporary storage of the existing Units 1 and 2 reactor head assemblies. The Units 1 and 2 reactor head replacement project is in the early stages of project planning and design. The OSGSF design is being performed using the guidance of NRC Generic Letter 81-38, "Storage of Low-level Radioactive Wastes at Power Reactor Sites." PG&E has evaluated the OSGSF design, construction and operation and determined that these activities may be done in accordance with the provisions of 10 CFR 50.59.

The Final Environmental Impact Report (FEIR), which was prepared by the California Public Utility Commission to satisfy the California Environmental Quality Act, contained a Mitigation Measure G-3A, which required that the OSGSF incorporate new earthquake data.

PG&E hereby transmits a copy of the OSGSF 10 CFR 50.59 screening evaluation as Enclosure 1. Enclosure 2 contains a copy of the letter to the County of San Luis Obispo Department of Planning and Building, which provides a summary description of the seismic analysis performed for the OSGSF and the necessary information for the County to conclude that mitigation Measure G-3A has been satisfied. PG&E is transmitting this information for the NRC's use in performing its reviews and inspections of the OSGSF as part of the Replacement Steam Generator Project.



If you have any questions regarding this submittal, please contact
Mr. Terence Grebel at (805) 545-4160.

Sincerely,

A handwritten signature in black ink, appearing to read 'Donna Jacobs', written over the printed name.

Donna Jacobs
Vice President – Nuclear Services

Enclosures

cc: Diablo Distribution
cc:/enc. Terry W. Jackson
Bruce S. Mallett
Alan B. Wang

Licensing Basis Impact Evaluation Screen
Old Steam Generator Storage Facility
Revision 0

Licensing Basis Impact Evaluation Screen

1 - BASIC INFORMATION

LBIE SCREEN TITLE: LBIE Screen for OSG Storage Facility	
REFERENCE DOCUMENT NO.: DCP C-049739	DOC. REV. NO.: 0
REFERENCE DOCUMENT TITLE: Old Steam Generator Storage Facility	
PREPARING ORGANIZATION: SGT	PREPARER (PRINT LAST NAME): Ceraldi

2 - DESCRIPTION (Summarize the activity or CTE)

NOTE: This LBIE Screen was started before issue of the current LBIE Screen form in procedure TS3.ID2. Therefore, continued use of this LBIE Screen form is acceptable.

Design Change Package C-049739 provides the design and implementing instructions for Steam Generating Team, West (SGT) to permanently construct an Old Steam Generator (OSG) Storage Facility (OSGSF) outside of the Protected Area and within the site Owner Controlled Area. The OSGSF will be used to provide temporary storage of the OSGs removed from the Unit 1 and Unit 2 Containment Buildings as part of the Diablo Canyon Steam Generator Replacement (SGR) Project. At the election of PG&E, the OSGSF design includes an additional storage area that will accommodate future temporary storage of the existing Unit 1 and Unit 2 Reactor Vessel Heads Assemblies (RVHAs), as part of potential replacement of those components.

The OSGSF is designed to include or provide the following:

1. Provide secure long-term storage for:
 - Eight (8) OSGs (four per operating unit) in a horizontal orientation,
 - Two (2) RVHAs to be stored in one-piece each (including control rod drive mechanism components, cable trays and supports) in a horizontal orientation in separate compartments.
 - Note - The OSGSF is not designed for storage of any other items or materials.
2. Location is east of the 500 kV Switchyard and south of Reservoir Road.
3. Enclosed footprint area is less than 18,000 square feet, and a total height of the structure above grade is less than 30 feet.
4. Facilitate rigging and offloading of the OSGs and RVHAs.
5. Provide adequate storage supports and foundations for the OSGs and RVHAs.
6. Accommodate removal of the stored OSGs and RVHAs for final disposal.
7. The facility floor is a reinforced concrete slab supported by concrete piles capable of supporting the loads anticipated during facility construction and offloading and storage of the OSGs and RVHAs.
8. The floor slab is elevated so that surface water will not enter the building.
9. The surrounding area grade is designed to slope away from the facility, and the drainage system is designed to control surface water and connect with the existing drainage system.
10. The OSGSF is classified as Non-safety-related quality class and PG&E Design class III.
11. ~~Allow personnel access to the area surrounding the building and restricted personnel access to the building interior for inspections (No routine or periodic inspections are anticipated). Access to the area surrounding the OSGSF will be defined upon radiation tests performed by PG&E radiation protection.~~
12. Provide locking access-control doors and concrete labyrinths designed to provide shielding at each entrance. No other access is required.

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13. The design meets the radiological requirements of 40 CFR 190, 10 CFR 20 and Plant license requirements. Refer to the Design Change Evaluation of DCP C-049739 for evaluation of compliance to these requirements.
14. Provide a maximum contact dose rate of 0.2 mR/hour on the exterior wall surface of the building. This value is less than and is bounded by the 0.5 mR/hour radiation dose limitation requirement stated in FSARU Table 12.1-1 for the Plant Occupancy Zone in which the OSGSF is located (Zone O – Unlimited Access).
15. Include a watertight roof membrane or equivalent roofing system and preclude moisture intrusion through cracks in the walls or through the roof membrane or through wall closures.
16. Provide floor sumps and radiological sampling points with weather-shielded external access applied to the sampling pipes only.
17. Include one (1) outside electrical panel for 120 volt AC power to exterior convenience receptacles near the entrance doors.
18. General area exterior lighting mounted on the building exterior and yard poles.
19. The OSGSF is not designed for occupation in any way except for the capability to perform inspections. No routine or periodic inspections are anticipated.
20. The OSGSF is designed to provide adequate clearance between the stored components and any wall surface for inspections. The flange of the RVHAs will be oriented to face the center partition between the RVHA compartments.
21. The building is not designed for any water, wastewater, or telephone services and will have no interior lighting or electrical power.
22. This design change includes extension of the Fire Water Piping system and installation of two valves/hydrants near the OSGSF.

The applicability of specific NRC regulations to the interim storage of removed radioactive contaminated components that are stored onsite is presented below.

Background

The Low-Level Waste Policy Amendments Act (LLWPA) of 1985 required that each state provide, either on its own or in cooperation with other states, for the disposal of low-level waste (LLW) generated within the state by December 31, 1992. The LLWPA established an interim access period from January 1, 1986 to January 1, 1993, during which time states and compacts would be allowed continued access to LLW disposal facilities at Barnwell, South Carolina; Hanford, Washington; and Beatty, Nevada. In accordance with the LLWPA, after January 1, 1993, states must be able to store, manage, or dispose of all LLW.

On January 1, 1993, the Beatty land disposal facility closed. Also on January 1 1993, the Hanford facility closed to all states but the Northwest and Rocky Mountain Compact states. The South Carolina Legislature had voted to keep the Barnwell facility open until June 30, 1994 for states that do not belong to the Southeast Compact and until January 1, 1996 for Southeast Compact states. However, on July 1, 1995 South Carolina left the Southeast Compact and opened Barnwell to waste generators in all states except North Carolina. As a result, waste generators in 31 states are no longer forced to store their waste onsite as they have been since July 1, 1994.

When it became apparent that most waste generators would be storing their LLW onsite after January 1993, the NRC Commission directed the NRC Staff to begin a rulemaking which would establish a regulatory framework containing the procedures and criteria that would apply to onsite storage of LLW beyond January 1, 1996. The NRC's intent was to support the goals that had been established by the LLWPA; however, this proposed rule was subsequently withdrawn by the NRC.

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Discussion

On February 3, 1993, the NRC issued a proposed change to the Federal Regulations (proposed rule) which would amend 10CFR Parts 30, 40, 50, and 70 regarding onsite storage of low-level radioactive waste beyond January 1, 1996. The proposed rule would have established procedures and criteria, for onsite storage of LLW that would apply to all categories of LLW generators. Onsite storage of LLW would not be permitted after January 1, 1996 (other than reasonable short-term storage necessary for decay, or for collection or consolidation for shipment off-site, in the case where the licensee has access to an operating LLW disposal facility), unless the licensee could document that it had exhausted other reasonable waste management options.

The proposed regulations would have required that the licensee attempt to contract, either directly or through the state in which the licensee's facility is located, for the disposal of the waste. The proposed regulations would make these requirements standard license conditions for reactor, materials, fuel cycle, and independent spent fuel storage licenses. Licensees would not be required to make a formal submittal to the NRC to show compliance with the requirements of the regulation and make the documentation available to the NRC for inspection.

The proposed rule was not definitive on what constituted LLW. Therefore, it is not clear from the proposed rule whether or not it would apply to large pieces of equipment such as the original steam generators. Documentation is available, however, which would suggest that large contaminated equipment would not be subject to the proposed rule.

The contention that the original steam generators (OSGs) are not considered LLW, but rather contaminated pieces of equipment was suggested by the NRC Staff in SECY-81-383, a Policy Issue Paper, dated June 19, 1981. In late 1980, the NRC drafted a letter to licensees regarding the storage of low-level radioactive wastes at power reactor sites, based on a submittal from the Tennessee Valley Authority to build a life-of-plant, onsite storage facility at Browns Ferry. As a result of the TVA submittal, the NRC Staff proposed a three-tier approach for the licensing of additional storage of low-level reactor wastes generated at reactor sites. The three tiers are: 1) short-term onsite contingency storage capacity which is an additional storage capability provided through modifications and additions that are closely related to existing handling and storage provisions for reactor operations; 2) intermediate onsite contingency storage facilities which are generally separate facilities that are proposed by a utility to provide several years of LLW storage capacity; and 3) life-of-plant onsite storage facilities which are major, separate facilities as exemplified by the Browns Ferry submittal. A package (SECY-80-511) containing the Staff's proposal, background on the Browns Ferry submittal, the proposed letter to licensees, and a memo on LLW storage at power reactor sites was forwarded to the Commissioners for approval.

Following the issuance of SECY-80-511, the NRC Staff briefed the Commission on the contents of the SECY paper. A number of questions were raised by the Commissioners during the briefing. In the course of developing answers and comments in response to the Commissioners, other issues arose which prompted a revision of the Staff's proposed letter to the licensees informing them of the Staff's plans. These matters were addressed in SECY-81-383. One of the questions asked by a Commissioner and the subsequent Staff response has been extracted from SECY-81-383 and is provided below:

Question: "What is the effect of this proposal on TMI-2 wastes of low-level classification? Does the EPICOR-2 resins fall in this category, and if so how are they to be treated under this proposal? It looks to me as though this proposal leaves Met Ed with a built-in violation, and precious little way to get out of it. Would it be reasonable to characterize this proposal as applying to LLW from normal operations and to exclude accident-recovery wastes?"

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Response: "We have not considered this proposed licensing position to be applicable to the TMI-2 situation. It is our intent that the proposal apply to LLW generated from normal operations and to exclude accident-recovery wastes. Another circumstance that would be excluded is the storage of a steam generator that has been removed from service (e.g., Surry) or the storage of other large, contaminated pieces of equipment. We believe that this point can be clarified by modifying the proposal letter to the utilities to indicate that the policy applies to the LLW generated by normal reactor operation and maintenance that conventionally has been shipped to commercial LLW disposal sites."

The proposed letter to the licensees eventually became Generic Letter 81-38, Storage of Low-Level Radioactive Wastes at Power Reactor Sites," which has been referenced in the proposed rule to 10CFR Parts 30, 40, 50, 70, and 72. The NRC Staff did make the following clarification as stated in SECY-81-383: "...for low-level waste generated by normal reactor operation and maintenance at power reactor site." However, the NRC did not provide the specific example that steam generators were excluded as was indicated in the response to a Commissioner's question in SECY-81-383. The Generic Letter states that, for proposed increases in storage capability for LLW generated by normal reactor operation and maintenance at power reactor sites, the safety of the proposal must be evaluated by the licensee under the provisions on 10 CFR 50.59. The licensee may provide the added capacity, document the 50.59 evaluation, report it to the Commission annually (or as specified in the license), and the five-year license can be renewed, if: (1) the existing license conditions or technical specifications do not prohibit increased storage, (2) no unreviewed safety question exists, and (3) the proposed increased storage capability does not exceed the generated waste projected for five years.

A clarification on the NRC Staff's position as delineated in Generic Letter 81-38 was provided in an NRC Memorandum from L. J. Cunningham, Chief, Radiation Protection Branch, Office of Nuclear Reactor Regulation and P. Lohaus, Chief, Low-Level Waste Management Branch, Office of Nuclear Material Safety and Safeguards to the Directors of the Regions, dated January 31, 1991. Again, the Staff stated that "...radioactive components, such as replaced steam generators or heat exchangers, generated through non-routine maintenance, were not intended to be included within the scope of Generic Letter 81-38."

For previous steam generator replacement projects, the 5-year storage limit defined in Generic Letter 81-38 has not been directly applied to the OSGSF. The reason is, based on previous NRC documentation; the OSGs have not been considered radioactive waste but rather as stored, contaminated equipment to be retained onsite until the plant is decommissioned. This approach has been used by all of the plants that have opted for long-term storage of the OSGs onsite and has been accepted, at least implicitly, by the NRC.

During the proposed rule comment period, D.C. Cook 2, Indian Point 3, Point Beach, and Palisades were contacted for their opinion of the proposed rule and how the rule might impact the future storage of the steam generators that are currently being stored onsite (typically the owner's controlled area). Since they were contacted shortly after the proposed rule was issued, most of the utilities had only begun to assess the potential impact of the proposed rule. However, the utilities did not believe the proposed rule applied to the stored steam generators because they did not consider the steam generators to be LLW, but rather contaminated pieces of equipment. On April 22, 1994 the NRC withdrew the proposed rule which would have amended 10CFR Parts 30, 40, 50, 70, and 72.

With the exceptions of Millstone Unit 2, Salem Unit 1, St. Lucie Unit 1, and Prairie Island Unit 1, every domestic plant that has replaced its steam generators has stored the OSGs onsite in a non-safety related storage facility. The intention for onsite storage has been clearly noted in various steam generator repair reports (SGRRs). Surry 1 & 2, Turkey Point 3 & 4, H.B. Robinson 2, Point Beach 1, and D.C. Cook 2 stated in their SGRR that the steam generators would be stored onsite until the steam generators could be

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shipped off-site to a burial facility or until the plant was decommissioned. In the cases of Surry, Point Beach, and H.B. Robinson, they stated that the steam generators would remain onsite until the plant was decommissioned. In each case, the NRC reiterated in its SER that the OSGs would be stored onsite and finally concluded that the SGRR was acceptable. Palisades, Indian Point 2 and 3, North Anna 1 & 2, Summer, McGuire 1 & 2, Catawba 1, Byron, Braidwood, ANO-2, and Calvert Cliffs 1 & 2 also are storing the OSGs in an onsite storage facility. These plants did not submit an SGRR to the NRC for approval; however, their onsite storage facilities was evaluated under 10 CFR 50.59 that was subject to NRC onsite inspection.

Conclusion

Based on the following, the OSGs and original RVHAs are considered stored components and not LLW.

- Response to the Commissioner's comment in SECT-80-511.
- NRC memorandum from L. Cunningham/P. Lohaus to directors of the Regions.
- Typical practice of storing original steam generators in OSGSFs for previous steam generator replacements.

The NRC provides general guidance on storage facility design in Inspection Procedure 50001, Steam Generator Replacement Inspection (9/6/00) by citing Generic Letter 81-38, Storage of Low Level Radioactive Wastes at Power Reactor Sites. This guidance notes that facility design and operation should assure that radiological consequences of design basis events (fire, tornado, seismic event, flood) should not exceed a small fraction of 10 CFR 100. Because the OSGs and original RVHAs are not considered to be LLW, the requirements of NRC Regulatory Guide 1.143, Design Guidance for Radioactive Waste Management Systems, Structures, and Components Installed in Light-Water-Cooled Nuclear Power Plants do not apply. Meeting the guidance of Generic Letter 81-38 is provided in the DCPD OSGSF design by the following:

- Fire – Fire detection capability is not provided in the original facility design evaluated in this LBIE Screen due to the limited presence of combustible materials resulting from storage of the eight (8) OSGs and two (2) RVHAs. No other items are to be stored within the OSGSF. Additionally, DCP C-049739 includes extension of the Fire Water Piping system and installation of a valve and hydrant near the OSGSF for fire suppression capability.
- Tornado – Although the OSGSF is not designed for tornado loadings, the robust, reinforced concrete structure will provide significant protection to the OSGs and future storage of the RVHAs in the event of such loadings or tornado borne missiles. The building is designed for a wind speed of 70 mph in Exposure Category C. As discussed in FSARU Section 3.3.2, there is a low probability of a tornado occurring at DCPD. Nevertheless, in the event of a tornado, damage to the OSGSF is postulated.

In preparation for exiting their respective containment buildings and onsite transport to the OSGSF, the OSG primary and secondary side penetrations will be sealed by either welded plates or welded plugs. These seals are adequate to contain the radioactivity within the OSG vessels during their transport to the OSGSF and provide a measure of assurance that, in the unlikely event of tornado damage to the OSGSF, the OSGs stored within the facility would remain sealed and not release radiological material. These seals, however, are conservatively assume to fail and allow radiological release if the OSGSF is damaged due to tornado. Based on analysis performed in preparing DCP C-049739, the sum of the radiological dose contributions of all eight (8) Unit 1 and Unit 2 OSGs and the Unit 1 and Unit 2 RVHAs exceeds the threshold value of being well within the allowable accident dose to the public and to the control room operators (i.e., less than 10 percent of the accident dose). To bring this dose sum to under the minimal allowable value for total offsite/control room operator dose from OSGSF damage, enhanced sealing measures will be performed to selected Unit 1 and Unit 2 OSGs as defined in Reference 28, once they are in their storage configurations within the OSGSF. This will preclude their radiological release contributions and ensure acceptable dose consequences even in the event of tornado damage to the OSGSF.

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The enhancements to be performed on the designated OSGs will be implemented as part of DCPs M-050752 and M-049753, Unit 2 and Unit 1 Steam Generator Replacement, and will be limited to providing structural welds in addition to the sealing welds to the primary nozzle covers. The primary-to-secondary side interface (e.g., the steam generator tubes) within the OSG is assumed to remain intact from damage to the OSGSF, based on the Catawba Steam Generator derailment event in Lima, Ohio which occurred October 2, 1995. In this cited case, a B&W Canada-manufactured replacement steam generator, which was being transported for delivery to Catawba Nuclear Station, experienced a rollover/fall from a Schnabel railcar – markedly similar to a drop of an OSG that could potentially be experienced from OSGSF damage. Post-derailment inspections conducted in Lima, Ohio showed no resultant tube damage that could be attributed to this event. Due to scheduling delays brought on by the derailment event, this steam generator was installed not in Catawba Unit 1 as originally planned, but at McGuire Nuclear Station Unit 1, where it remains in service (Reference NRC Inspection Report Nos. 50-413/95-22 and 50-414/95-22).

- Seismic Events – The OSGSF is designed to withstand seismic loads in accordance with the requirements of the California Building Code (CBC) for Seismic Zone 4 and site class Sc. Conservatively, however, damage to the OSGSF should be assumed for seismic loads beyond the CBC requirements, and in such a case, the offsite dose values are assumed to be the same as those resulting from postulated tornado damage as described above.
- Flood – With the location of the OSGSF approximately 305 feet above sea level, there is no potential for this area to be flooded due to a probable maximum tsunami, for which DCP Units 1 & 2 FSAR Update Section 2.4.6.1 describes a flooding level of 34.6 feet above mean sea level. The only other Probable Maximum Flood for which the DCP site is designed is that of maximum flooding of Diablo Creek. For this case, due to the modeled hydraulic capacity of the canyon at maximum flood flows, maximum flood water level would still remain below any safety-related buildings (FSAR Update Section 2.4.3.5) and thus far below the OSGSF. Grading of the area of the OSGSF construction will route rainfall to an acceptable water runoff pattern to ensure no accumulation adjacent to the facility results. In addition, significant measures are included in the facility design (e.g., use of waterstops, sealing of the facility roof and larger openings) to prevent water intrusion into the facility. For the probable maximum precipitation event described in FSARU Section 2.4.3.1, the runoff level will remain below the OSGSF top of floor slab elevation.

3 - SCREENING FOR CHANGES REQUIRING PRIOR REGULATORY APPROVAL

3.1 SECTION 1: Screen for Changes to the Facility License

Does this activity or CTE involve a change to the Facility Operating License, including Appendices (Technical Specifications, Environmental Protection Plan and Antitrust Conditions) or to the Material License, including Appendix (Technical Specifications) for the Diablo Canyon Independent Spent Fuel Storage Installation (ISFSI)? See Appendix 7.8 for ISFSI items to consider.

☐ Y ☒ N

If "yes," contact licensing. A license amendment must be received from the NRC before an activity or CTE impacting the license is implemented.

3.2 SECTION 2: Screen for Regulatory Commitments and Obligations

(a) Does this activity or CTE impact a regulatory commitment or obligation contained in the PCD (procedure changes) or within the scope of XI4.ID2 (non-procedure changes)?

☐ Y ☒ N

If "yes," process the change in accordance with XI4.ID2.

If "no," skip the next question.

(b) According to XI4.ID2, does the activity or CTE impact an obligation that requires prior NRC approval?

☐ Y ☐ N

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If "yes," contact licensing. NRC approval must be received before an activity or CTE impacting the obligation is implemented.

3.3 SECTION 3: Screen for Changes to the Quality Assurance Program

Does the activity or CTE involve a change to the Quality Assurance Program as described in FSAR Update Chapter 17?

☐ Y ☒ N

If "yes," contact quality for an evaluation of the proposed change. Changes to the Quality Assurance Program which reduce program commitments must be submitted to the NRC and receive NRC approval prior to implementation in accordance with 10 CFR 50.54(a)(4). All changes to Chapter 17 are processed in accordance with XI3.ID2.

3.4 SECTION 4: Screen for Other Programs

Does the activity or CTE impact other programs (e.g., the ODCM) which are controlled by regulations, the license or the Technical Specifications? (See Section 4.2.1 of the 10 CFR 50.59 Resource Manual (RM).)

☐ Y ☒ N

If "yes," process in accordance with the procedure(s) for the appropriate activity.

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4 - SCREENING FOR DETERMINING THE NEED FOR AN LBIE OR SAFETY ASSESSMENT

4.0 SECTION 0: Screen for Maintenance Activities (Not applicable to SSCs controlled by the ISFSI License)

Does the proposed activity or CTE involve:

- (a) Maintenance which restores SSCs to their approved design condition?

☐ Y ☒ N

OR

- (b) A temporary alteration supporting maintenance that will be in effect during at-power operations for 90 days or less?

☐ Y ☒ N

If either answer is "yes," and the CTE does not involve ISFSI, the questions in section 4.1, "10 CFR 50.59 and/or 10 CFR 72.48 Evaluation Screen," are not applicable.

4.1 SECTION 1: ☒ 10 CFR 50.59 and/or ☒ 10 CFR 72.48 Screen (see Appendix 7.8) (check one or both as applicable)

OR

☐ N/A either 4.0(a) or 4.0(b) = "Y" and the CTE does not involve ISFSI

- (a) Does the proposed activity involve a change to an SSC that adversely affects an FSARU described *design function*? (See Section 5.2.2.1 of the RM)

☐ Y ☒ N

- (b) Does the proposed activity involve a change to a procedure that adversely affects how FSARU described SSC design functions are performed or controlled? (See Section 5.2.2.2 of the RM)

☐ Y ☒ N

- (c) Does the proposed activity involve a change that adversely revises or replaces an FSARU described evaluation methodology that is used in establishing the *design bases* or used in the *safety analyses*? (See Section 5.2.2.3 of the RM)

☐ Y ☒ N

- (d) Does the proposed activity involve a *test or experiment not described in the FSARU*, where an SSC is utilized or controlled in a manner that is outside the reference bounds of the design for that SSC or is inconsistent with analyses or descriptions in the FSARU? (See Section 5.2.2.4 of the RM)

☐ Y ☒ N

- (e) Does this activity or CTE rely on a vendor 10 CFR 50.59 or 10 CFR 72.48 evaluation which has not been reviewed by the PSRC?

☐ Y ☒ N

A "yes" response to any of the Section 1 questions requires Attachment 8.3, Form 69-20173, "LBIE - Section 1 - 10 CFR 50.59 and/or 10 CFR 72.48 Evaluation" to be completed. Also Attachment 8.5, "LBIE - Section 3 - Safety Assessment," must be completed if required by Appendix 7.6, "Safety Assessment."

4.2 SECTION 2: Fire Protection Program Screen

Does the activity or CTE involve a change to the Fire Protection Program as described in FSARU Chapter 9, Appendix 9.5?

☐ Y ☒ N

A "yes" response to Section 2 questions requires Attachment 8.4, Form 69-20174, "LBIE - Section 2 - Fire Protection Program" to be completed.

4.3 SECTION 3: Screen for Safety Assessments

Does the activity or CTE require a Safety Assessment as described in Appendix 7.6?

☐ Y ☒ N

A "yes" response requires either (1) completing Attachment 8.2, Form 69-10431, "LBIE - Section 0 - General Information & Summary," and Attachment 8.5, Form 69-20175, "LBIE - Section 3 - Safety Assessment" or (2) if the activity or CTE has been determined to be safe by another process, document that in the "Remarks" section of this screen.

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4.4 SECTION 4: Environmental Protection Screen

- (a) Does this activity or CTE have a potential effect on the environment on the basis of Appendix 7.3? If "no," skip the next question and signature. ☐ Y ☒ N
- (b) If "yes," does the activity or CTE result in a noncompliance with the Environmental Protection Plan or create a situation that may be adverse to the environment? ☐ Y ☐ N

A "yes" response to question (b) requires Attachment 8.6, Form 69-20176, "LBIE - Section 4 - Environmental Protection" to be completed. Document a question (b) "no" response in the remarks section below.

ENVIRONMENTAL REVIEWER SIGNATURE	DATE	PRINT LAST NAME
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4.5 SECTION 5: Emergency Plan Screen

- (a) Does the Emergency Plan (EP) require review on the basis of Appendix 7.4? If "no," skip the next two questions and signature. ☐ Y ☒ N
- (b) Does the activity or CTE result in ANY change to the EP? If "no," skip the next question, but complete the signature. Document a question (b) "no" response in the remarks section below. ☐ Y ☐ N
- (c) Is the change to the EP an editorial correction? If "yes," process in accordance with AD1.ID7, and sign below. If "no," complete Attachment 8.7, Form 69-20177, "LBIE - Section 5 - Emergency Plan." ☐ Y ☐ N

EMERGENCY PLAN REVIEWER SIGNATURE	DATE	PRINT LAST NAME
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4.6 SECTION 6: Security Plans Screen

- (a) Do any of the security plans (PSP, SCP, STQP) require review on the basis of Appendix 7.5? If "no", skip the next question and signature. ☐ Y ☒ N
- (b) If "yes", does the activity or CTE result in a change to a security plan? If so, document in the "Remarks" section which plan(s). ☐ Y ☐ N

A "yes" response to question (b) requires Attachment 8.8, Form 69-20178, "LBIE - Section 6 - Security Plan" to be completed. Document a question (b) "no" response in the remarks section below.

SECURITY PLAN REVIEWER SIGNATURE	DATE	PRINT LAST NAME
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5 - CREDITED ACTIONS OR COMPENSATORY MEASURES

Are LBIE Screen/LBIE credited actions or compensatory measures implemented in documents such as approved procedures, ARs, work documents (e.g., W/O, jumper), or drawings?

☐ Y ☒ N/A

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6 - FSARU Change

Does the proposed activity or CTE involve an FSARU change?

☒ Y ☐ N/A

If "yes" process in accordance with XI3.ID2.

7 - REMARKS (Unless obvious, summarize why 10 CFR 50.59 or 10 CFR 72.48 is not applicable and why an LBIE is, or is not, required)

Discussion for 3.1 Section 1, Screen for Changes to the Facility License:

No changes to the DCP Facility License are required to implement DCP C-049739. As demonstrated in the responses to the 10 CFR 50.59 Screen questions of this LBIE, this permanent plant modification may be successfully implemented under 10 CFR 50.59. With regard to the Facility License for the Diablo Canyon Independent Spent Fuel Storage Installation (ISFSI), the construction and use of the OSGSF have no interface with the ISFSI or plant SSCs that are associated with the operation of the ISFSI (including cask transfer/handling equipment located within the DCP). Actual transport of the OSGs for their placement within the OSGSF is addressed in DCPs C-050745, Steam Generator Rigging and Handling Outside Containment (Unit 2), and C-049746, Steam Generator Rigging and Handling Outside Containment (Unit 1). The transport activities which involve passage of the OSGs adjacent to the ISFSI along Reservoir Road are addressed solely in those DCPs. DCP C-049739 is limited in scope to the construction and use of the OSGSF, which will involve transient transport activities past the ISFSI while using Reservoir road to gain equipment and materials access to the OSGSF site.

In preparing this LBIE Screen, the criteria of Appendix 7.7 (ISFSI Pre-Screen) of PG&E Inter-Departmental Administrative Procedure TS3.ID2, "Licensing Basis Impact Evaluations," as well as the ISFSI FSAR were reviewed. The OSGSF designated site is approximately 1600 feet east of the ISFSI with the slope of the intervening hillside preventing a direct line-of-sight. In the interest of ALARA, all OSGSF construction and equipment staging activities will be concentrated in the immediate area of the OSGSF site and well away from the ISFSI. From a radiation dose to personnel standpoint, these factors assure that personnel involved in OSGSF construction and related activities are not working (beyond transient use of Reservoir Road passing by the ISFSI) within any area for which the radiation dose could be received from the ISFSI.

Table 7.5-4 of the ISFSI FSAR describes the compliance of the ISFSI with the annual dose limit requirements of 10 CFR 72.104 for the nearest resident (1.5 miles (7,920 feet) from the ISFSI. Per 10 CFR 72.102(a)(2) and 10 CFR 72.104(a)(3), the radiation dose must take into account both direct radiation effects from the ISFSI and any other radiation from uranium fuel cycle operations within the region (i.e., the nuclear unit themselves). The DCP radiation values applied to the summation are contained in FSARU Table 11.3-32 for the NNW Sector. A DCP C-049739 review of the OSGSF annual radiation dose concluded that the presence of the facility with it contained OSGs and RVHAs would have an insignificant radiation dose effect, and would be within the margins of the conservative annual dose values utilized for plant operation uranium fuel cycle activities. Therefore, 10 CFR 72.104 compliance is maintained.

The activities of OSGSF building construction will involve heavy equipment and necessary construction materials (steel rebar, concrete). But all these activities and the material and equipment staging performed to support them will take place well away from the ISFSI to ensure no credible impact to the ISFSI or its operations. Transient passage of vehicles and equipment by the ISFSI along Reservoir Road will comply with limitations described in the ISFSI FSAR that have been incorporated into DCP site procedures for the use of this road for such factors as vehicle speeds, approach distance to the ISFSI, number of vehicles, fuel sources, fuel types, fuel capacity, and transient materials in order to maintain the risk of fire and explosion bounded by those events described in the ISFSI FSAR (Reference Sections 2.2, Sections 2.2.2, 7.5, 7.6, 8.2.5, 8.2.6, and Table 3.4-1).

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DOC. REV. NO.: 0

7 - REMARKS (Unless obvious, summarize why 10 CFR 50.59 or 10 CFR 72.48 is not applicable and why an LBIE is, or is not, required)

Discussion for 3.2 Section 2, Screen for Regulatory Commitments and Obligations:

The Conditional Use Permit (CUP) prepared for the PG&E DCP SGR and use of the Old Steam Generator Storage Facility provides a detailed evaluation of the potential impact of the OSGSF upon applicable land use policies of San Luis Obispo County Code Section 22.62.040.B.1.a (Site Plan Review) requirements and concludes the acceptability of the OSGSF. The purpose for the CUP is to provide sufficient preliminary information for the County Planning Department to approve the proposed use of the building. Specific and final design details will be provided to the county in the Building Permit application when the design is completed.

Therefore, statements made in the CUP regarding the use of the building (including overall size envelope, general location, and items allowed and prohibited to be stored, etc.) should be considered as preliminary commitments to the county which will be presented in final form in the Building Permit that is subject to change as the design is completed. From the CUP perspective, the principle factors and environmental considerations upon which the Conditional Use Permit conclusion is based include:

1. The OSGSF will be located within the Diablo Canyon Nuclear Power Plant site in a site area composed of previously disturbed terrain that is outside of the public viewsheds, specifically those of Highway 101.
2. Building of the OSGSF will not disturb any natural landscape, and no removal of natural soil or vegetation is required. The OSGSF will be located on a flat, previously graded area with an impermeable surface that has been determined to be geologically stable.
3. No new access routes are required to build the OSGSF or to use it to store OSGs/RVHAs, and the placement of this facility does not interfere with existing transmission lines.
4. In order to assure that the facility size can be accommodated within the existing Public Facilities designation for DCP site, the size of the OSGSF is limited to approximately 18,000 square feet with a maximum height of 30 feet.

More specific OSGSF details are also provided in the Conditional Use Permit. These are a subset of the parallel OSGSF specifications contained in PG&E Specification 10047-N-NPG. As cited within the Conditional Use Permit, specific details of the OSGSF include the following:

- Provide adequate long-term storage for eight one-piece steam generators (four per operating unit) and two reactor vessel head assemblies.
- Facilitate rigging and offloading of the steam generators and reactor head assemblies.
- Provide adequate steam generator storage and reactor vessel head assembly storage supports and foundations.
- Allow easy removal of the stored old steam generators and reactor head assemblies for final disposal.
- Incorporate a reinforced concrete-slab supported by concrete piles capable of supporting the loads anticipated during facility construction and steam generator and reactor head off loading and storage. Slab elevation shall be such that surface water will drain away from the facility.
- Be designed as a "nonsafety-related" structure under NRC regulations and provide secure storage of the steam generators and reactor head assemblies. Furthermore, the Final Environmental Impact Report mitigation measures G-3A and G-4A have been included in the facility design and location, as described in DCP C-049739.
- Allow for personnel access to the outside of the building and restricted personnel access to the building's interior for periodic PG&E surveillance. Note that no routine or periodic inspections are

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7 - REMARKS (Unless obvious, summarize why 10 CFR 50.59 or 10 CFR 72.48 is not applicable and why an LBIE is, or is not, required)

anticipated). Access to the area surrounding the OSGSF will be based on radiological surveys performed by PG&E radiation protection.

- Incorporate a watertight roof membrane or equivalent roofing system. The facility design and construction shall preclude moisture intrusion through construction joints, the roof membrane, or wall closures.
- Provide locking access-control doors and concrete labyrinths designed to provide shielding at each entrance. No other access is required
- Incorporate an outside electrical panel, with a permanent connection to an electrical power source, to provide 120-volt AC power to service convenience receptacles.
- Incorporate floor sumps and radiological sampling points with weather-shielded external access.

Discussion for 3.3 Section 3, Screen for Changes to the Quality Assurance Program

DCP C-049739 is prepared and implemented as part of the DCP Unit 1 and Unit 2 Steam Generator Replacement Project performed by vendor Steam Generating Team, West (SGT). SGT's Quality Assurance (QA) Program complies with the requirements of 10 CFR 50 Appendix B and the licensing commitments described in FSARU Chapter 17 that are applicable to the Steam Generator Replacement Project. Therefore, no changes to the DCP QA Program will be required as a result of SGT-performed SGR Project activities. DCP C-049739 will initiate a change to the Q-List to reflect the addition of the OSGSF to the DCP site.

Discussion for 3.4 Section 4, Screen for Other Programs:

Section 4.2.1 of the USA 50.59 Resource Manual demonstrated was reviewed to determine "Other Programs" potentially affected by implementation of DCP C-049739 (i.e., those programs that are controlled by more specific requirements and criteria that are established by other regulations than 10 CFR 50.59). Per the USA 50.59 Resource Manual guidance, 10 CFR 20 (Standards for Protection Against Radiation) and 40 CFR 190 (Environmental Radiation Protection Standards for Nuclear Power Operations) belong to the "Other Programs" category. As demonstrated by DCP C-049739, the radiological design of the building meets the requirements of 10 CFR 20 and 40 CFR 190, as well as Plant License requirements. Further, DCP Radiation Protection personnel will determine the monitoring requirements for the OSGSF for including the facility in the Offsite Radiological Monitoring Program described in FSARU Section 11.6.

Regarding the plant Offsite Dose Calculation Manual (ODCM), as described in the Section 2 Description of this LBIE Screen, the OSGSF provides secure storage of the contained components which during normal operation conditions results in no contribution to the offsite releases evaluated in the ODCM. However, direct radiation streaming effects also form a part of the ODCM. As part of DCP C-049739 preparation, execution, and closeout, necessary updates will be performed by PG&E to the ODCM using input data provided by DCP C-049739. Offsite releases in the case of tornado or seismic damage to the OSGSF are addressed in the Section 2 Description of this LBIE Screen.

Evaluation of the effects of DCP C-049739 upon the Fire Protection Program, Environmental Protection, Emergency Plan, and Security Plans are presented below in respective discussions below for LBIE Sections 4.2, 4.4, 4.5, and 4.6.

With regard to 10 CFR 72.104 (Criteria for Radioactive Materials in Effluents and Direct Radiation from an ISFSI or MRS), the OSGSF is separated from the ISFSI by approximately 1600 feet with hillside line-of-sight separation. There are no OSGSF construction or future operational activities (beyond transient use of Reservoir Road passing by the ISFSI) that place personnel within any area for which the radiation dose could be received from the ISFSI.

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7 - REMARKS (Unless obvious, summarize why 10 CFR 50.59 or 10 CFR 72.48 is not applicable and why an LBIE is, or is not, required)

Table 7.5-4 of the ISFSI FSAR describes the compliance of the ISFSI with the annual dose limit requirements of 10 CFR 72.104 for the nearest resident (1.5 miles (7,920 feet) from the ISFSI. Per 10 CFR 72.102(a)(2) and 10 CFR 72.104(a)(3), the radiation dose must take into account both direct radiation effects from the ISFSI and any other radiation from uranium fuel cycle operations within the region (i.e., the nuclear unit themselves). The DCP radiation values applied to the summation are contained in FSARU Table 11.3-32 for the NNW Sector. A DCP C-049739 review of the OSGSF annual radiation dose concluded that the presence of the facility with it contained OSGs and RVHAs would have an insignificant radiation dose effect, and would be within the margins of the conservative annual dose values utilized for plant operation uranium fuel cycle activities. Therefore, 10 CFR 72.104 compliance is maintained.

Discussion for Response to 4.1 Section 1, Question A:

Research of the FSARU identified several sections that will be revised to reflect the addition of the OSGSF to the DCP site. Revision of applicable FSARU figures in order to illustrate the addition of the OSGSF will be performed via the DCP engineering drawing update process. The following FSARU sections will include text details appropriate to the applicable section:

- Section 11.5.6, Storage Facilities, will be revised to describe the storage purpose and features of the OSGSF.
- Section 12.1.2.9 will be added to discuss the Shielding/ALARA features of the design of the OSGSF.

Guidance provided by the NRC in Generic Letter 81-38, Storage of Low Level Radioactive Wastes at Power Reactor Sites, notes that facility design and operation should assure that radiological consequences of design basis events (fire, tornado, seismic event, flood) should not exceed a small fraction of 10 CFR 100. The itemized descriptions of design measures taken to comply with the NRC Generic Letter 81-38 guidance are presented in Section 2 to this LBIE Screening. Temporary storage of these OSGs and future placement of the RVHAs are activities not contrary to the FSARU bases for onsite radioactive waste storage and disposal, as described in FSARU Section 11.5 or the Health Physics Program described in FSARU Section 12.3.

The outside Protected Area (within the Owner Controlled Area) location of the OSGSF makes it unlikely that any tornado missiles produced during adverse weather conditions could themselves impact any important to safety systems, structures, and components (SSCs) located within the Protected Area. Nevertheless, the robust reinforced concrete OSGSF design ensures during adverse extreme environmental conditions such as tornados that portions of the OSGSF structure do not become tornado missiles of a character more severe than those assumed for the plant structural design as described in FSARU Sections 3.3.2 and 3.5.4.2. Further, the OSGSF is located remotely from any plant SSCs which could be adversely affected through any credible building failure. Building water runoff is designed to not interfere with any site facilities or systems, structures and components (SSCs). As demonstrated in DCP C-049739, for the probable maximum precipitation event described in FSARU Section 2.4.3.1, the runoff level will remain below the OSGSF top of floor slab elevation.

Buried utilities located in the structure footprint will be appropriately relocated/dispositioned as addressed in DCP implementation instructions in order to preclude any adverse effects.

From the preceding it is concluded that DCP C-049739 does not involve a change to an SSC that adversely affects any FSARU described design functions.

Discussion for Response to 4.1 Section 1, Question B:

Temporary storage of these OSGs and future placement of the RVHAs within the OSGSF are activities not contrary to the FSARU bases for onsite radioactive waste storage and disposal, as described in FSARU Section 11.5 or the Health Physics Program described in FSARU Section 12.3. Therefore, DCP

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7 - REMARKS (Unless obvious, summarize why 10 CFR 50.59 or 10 CFR 72.48 is not applicable and why an LBIE is, or is not, required)

C-049739 does not involve any change to a procedure that adversely affects how FSARU described SSC design functions are performed or controlled.

Discussion for Response to 4.1 Section 1, Question C:

The computer code MCNP4C was used for the shielding calculations. This code is a generalized geometry, time dependent, Monte Carlo transport code that can be used to model complex radiological shielding models. In NUREG-1536, "Standard Review Plan for Dry Cask Storage Systems," the NRC notes that MCNP is an appropriate computer program to be used for shielding analysis and is widely known and recognized for performing such analyses. Since the OSGSF is an on-site storage structure similar to an ISFSI, the NRC concurrence is considered applicable.

The computer code ELISA (Version 2.2) was used for the offsite dose calculation for postulated collapse of the OSGSF which damage stored components and result in radiological releases. ELISA is based on deterministic models for the computation of radioactivity levels, gamma spectra and radiation exposures following routine and accidental releases of fission products, activation products and actinides. ELISA-2 is suitable for the radiological evaluation of practically all postulated design-basis accidents at light-water nuclear power plants. As the postulated collapse of the OSGSF is treated as an accidental release, ELISA is fully suitable for this application. References 22 and 23 of Section 8.1 of this LBIE cite two instances of NRC approved usage of this ELISA computer code.

Therefore, implementation of DCP C-049739 does not involve revising or replacing a FSARU described evaluation methodology that is used to establish the design bases or used in the safety analysis.

Discussion for Response to 4.1 Section 1, Question D:

Construction and use of an onsite facility to temporarily store large radioactive/radiologically contaminated components removed from DCP Units 1 and 2 is a support activity that proceeds from plant maintenance, and is not a test or experiment not described in the FSAR. The design and construction of the OSGSF ensures that the temporary storage of the OSGs and future storage of the Unit 1 and Unit 2 RVHAs are physically secure, environmentally safe, and compliant with applicable standards and regulations for the same. Plant SSCs are neither adversely affected, nor required to be utilized or controlled in a manner that is outside of the reference bounds of the design for that SSC. Construction and use of the OSGSF is fully consistent with analyses and descriptions in the FSARU regarding temporary storage of radioactive/radiologically contaminated components, as described in FSARU Section 12.3.

Therefore, the implementation of DCP C-049739 does not involve a test or experiment not described in the FSARU, where an SSC is utilized or controlled in a manner that is outside the reference bounds of the design for that SSC or is inconsistent with analysis or descriptions in the FSAR.

Discussion for Response to 4.1 Section 1, Question E:

Although this 10 CFR 50.59 review is performed by a vendor (SGT), the document preparation, review, and approval utilize the forms and processes that apply to DCP-prepared 10 CFR 50.59 and 10 CFR 72.48 reviews. Further, both the Preparer and Reviewer signers below in Section 9 (SCREEN CONCLUSIONS) are trained and qualified to perform this role.

Discussion for 4.2 Section 2, Fire Protection Program Screen

As regards the DCP Fire Protection Program, fire detection capability is not required in the OSGSF due to the limited presence of combustible materials resulting from storage of the eight OSGs and two RVHAs. No other items are to be stored within the OSGSF. However, DCP C-049739 includes extension of the Fire Water Piping system and installation of a valve and hydrant near the OSGSF to

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7 - REMARKS (Unless obvious, summarize why 10 CFR 50.59 or 10 CFR 72.48 is not applicable and why an LBIE is, or is not, required)

provide fire suppression capability.

Discussion for 4.3 Section 3, Screen for Safety Assessments

The Design Change Evaluation prepared for and included within DCP C-049739 functions as a general safety assessment of the evaluated design and implementation activities.

Discussion for 4.4 Section 4, Environmental Protection Screen

DCP C-049739 was reviewed against the Environmental Evaluation Pre-Screen Criteria of Appendix 7.3 of PG&E Inter-Departmental Administrative Procedure TS3.ID2, Licensing Basis Impact Evaluations, to determine if any potential environmental impact would result from OSGSF construction and use. Based on the outline presentation of Appendix 7.3, the conclusions of this review are presented below for items where clarification was deemed necessary.

Discharges to the Air

Of the sub-items listed under the "discharges to the air" category of Appendix 7.3, the only applicable items for the OSGSF involve the "use of or changes in fossil fuel powered equipment," and "other construction activities which could impact local air quality (i.e., particulate concentrations)." Specifically, for the OSGSF, these two items apply to the use of diesel powered equipment used to construct the facility itself. The DCP C-049739 predicted usage of such equipment, however, is within the allowances for the site, and is therefore regulatorily permissible.

Discharges of Water or Changes to Water Treatment Systems

Use of the OSGSF is for storage of the OSGs and RVHAs, all of which are dry stored items. The OSGSF is designed to be watertight, both preventing intrusion of water to the building, and preventing any release to the environment. The facility floor is sloped to provide collection of any water at sumps that are monitorable via observation ports that are external to the building. With regard to drainage in the immediate areas outside of the facility, DCP C-049739 designs for and implements a comprehensive drainage plan to assure proper draining of the area and routing of the drainage to the plant drains for discharge. Since drainage tie-ins will be made to the existing site drainage system, no new discharge points will be added.

Hazardous Materials Control Requirements

Construction of the OSGSF will not employ any chemical not already approved for DCP site use. The OSGSF will not be used to store chemicals of any sort. Onsite project storage and use of chemicals will comply with DCP site requirements for the same.

Hazardous Waste Requirements

Use of any construction equipment presents the possibility of leakage of small amounts of petroleum products from the operation of such equipment. This is, however, mitigated to an acceptable level by proper maintenance and frequent inspection of this equipment throughout onsite use. Further, as a responsible operator of such equipment, SGT will have in place contingency response plans to deal environmentally with any unanticipated leakage.

Indian Burial Ground (SLO-2)

The OSGSF site is remote from the Indian Burial Ground (SLO-2).

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7 - REMARKS (Unless obvious, summarize why 10 CFR 50.59 or 10 CFR 72.48 is not applicable and why an LBIE is, or is not, required)

Previously Undisturbed Land

The OSGSF site is wholly located on previously disturbed land. Construction of the OSGSF will require excavation of the structure's foundation, and these activities will be controlled by means appropriate to limit any potential soil erosion. The areas surrounding the facility will be surface stabilized as part of this modification. Grading of the area of the OSGSF construction will route rainfall to an acceptable water runoff pattern, and as mentioned above, DCP C-049739 designs for and implements a comprehensive drainage plan to assure proper draining of the area and routing of the drainage to the plant drains for discharge.

Discussion for 4.5 Section 5, Emergency Protection Screen

DCP C-049739 was reviewed against the Emergency Plan Pre-Screen Criteria of Appendix 7.4 of PG&E Inter-Departmental Administrative Procedure TS3.ID2, Licensing Basis Impact Evaluations, as well as the Emergency Plan itself to determine if any potential impacts to the Emergency Plan would result from OSGSF construction and use. From this review it was concluded that there are no effects of the presence of the newly constructed OSGSF on Emergency Plan illustrations/figures, assumptions, conclusions, or any of the Appendix 7.4 listed Emergency Plan Pre-Screen items.

Discussion for 4.6 Section 6, Security Plans Screen

The OSGSF site is located within the Owner Controlled Area and is outside of and remote from the DCP Protected Area. As such, there are no potential impacts to the Security Plans Pre-Screen items listed in Appendix 7.5 of PG&E Inter-Departmental Administrative Procedure TS3.ID2, Licensing Basis Impact Evaluations, except that the construction of the OSGSF will "result in excavation," specifically of the foundation for the facility. Such excavation, however, due to its remoteness from any plant barriers, walls, fences, or other security zones and equipment, is concluded to have no effect upon the DCP Security Plans.

Discussion for 5, Credited Actions or Compensatory Measures

There are no credited actions or compensatory measures used in implementing DCP C-049739.

Discussion for 6, FSARU Change

DCP C-049739 initiates an FSAR Change Request to add text describing the OSGSF to FSARU Section 11.5.6, *Storage Facilities*, and to Section 12.1.2, *SHIELDING Design Description*. This FSAR Change Request also denotes the location of the OSGSF on FSARU Figure 1.2-1, *Plot Plan*.

8 - REFERENCES/ATTACHMENTS

8.1 References

1. Diablo Canyon Units 1 & 2 Technical Specifications (through Amendments 135 (Unit 1) and 135 (Unit 2))
2. ~~Diablo Canyon Units 1 & 2 Technical Specification Bases (Revision 3)~~
3. Diablo Canyon Units 1 & 2 Environmental Protection Plan (Non-Radiological), August 1985
4. DCP Units 1 & 2 FSAR Update, Sections 2.4.6.1, 2.4.3.5, 3.3.2, 3.5.4.2, 11.5, 11.6, 12.1, 12.2, 12.3, and Table 11.3-32 (Revision 16, June 2005)
5. PG&E Inter-Departmental Administrative Procedure TS3.ID2, Licensing Basis Impact Evaluations (Revision 21)

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8 - REFERENCES/ATTACHMENTS

8.1 References

6. USA 50.59 Resource Manual, Revision 3, November 2005
7. DCCP Emergency Plan (Revision 4)
8. U.S. NRC Generic Letter 81-38, Storage of Low Level Radioactive Wastes at Power Reactor Sites, dated November 10, 1981
9. 10 CFR 20, Standards for Protection Against Radiation, 2006
10. 40 CFR 190, Environmental Radiation Protection Standards for Nuclear Power Operations, 2006
11. 10 CFR 100, Reactor Site Criteria, 2006
12. California Building Code (CBC), 2001
13. Proposed Technical Specifications for Diablo Canyon Independent Spent Fuel Storage Installation, dated January 16, 2004
14. Technical Specification Bases for Diablo Canyon Spent Fuel Storage Installation (ISFSI), dated January 16, 2004
15. NRC Inspection Procedure 50001, Steam Generator Replacement Inspection, issued September 6, 2000
16. NRC Regulatory Guide 1.143, Design Guidance for Radioactive Waste Management Systems, Structures, and Components Installed in Light-Water-Cooled Nuclear Power Plants, Revision 2 (November 2001)
17. Conditional Use Permit, PG&E Diablo Canyon Power Plant SGR OSGSF, dated February 2, 2005
18. PG&E Specification No. 10047-N-NPG, Installation of Replacement Steam Generators for Diablo Canyon Power Plants Units 1 and 2, Revision 0, dated February 25, 2004
19. Calculation No. 52.27.100.535, SGRP: Stormwater/Runoff Near the OSGSF, Revision 0
20. PG&E Action Request No. A0642984, Structural Cover Plates Needed for Old Steam Generators, dated August 10, 2006
21. NRC Inspection Report Nos. 50-413/95-22 and 50-414/95-22, dated December 14, 1995
22. Turkey Point Units 3 and 4, Docket Nos. 50-250 and 50-251, Proposed License Amendments, Selective Implementation of Alternate Source Term: Containment Equipment Door Open During Core Alterations, NRC Accession Nos. ML012010049 (dated 07/18/01) and ML012610227 (dated 9/6/01)
23. Pilgrim Nuclear Power Station, Docket No. 50-293, License No. DPR-35, Proposed License Amendment for a Limited Scope Application of the Alternate Source Term (NUREG-1465) for Re-evaluation of the Fuel Handling Accident Dose Consequences, Rev. 1 (TAC NO. MC2705), NRC Accession No. ML043650060, dated 12/15/04
24. 10 CFR 72.104, Criteria for Radioactive Materials in Effluents and Direct Radiation from an ISFSI or MRS, 2006
25. State of California Public Utilities Commission, Pacific Gas & Electric Company's Diablo Canyon Power Plant Steam Generator Replacement Project (Application No. A.04-01-009), Final Environmental Impact Report, dated August 15, 2005
26. Independent Spent Fuel Storage Installation (ISFSI) Final Safety Analysis Report (FSAR) Update, Revision 1, Sections 2.2.2, 7.5, 7.6, 8.2.5, 8.2.6, and Tables 3.4-1 and 7.5-4
27. Calculation STA-218, "SGRP SG Storage Facility Shielding Evaluation"
28. Calculation STA-240, "SGRP Radiological Consequences of the Collapse of the OSGSF"

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8 - REFERENCES/ATTACHMENTS

8.1 References

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8.2 Attachments

None

9 - SCREEN CONCLUSIONS

Based upon the above criteria, I have determined that an LBIE:

☐ is required.

☒ is not required.

PREPARER SIGNATURE

(Quals: TPROC [if 4.1 = "N/A"], TLBIE, or TLBIEV)



DATE

11/2/06

PRINT LAST NAME

Ceraldi

Based upon my independent technical review, I concur with the above conclusion:

ITR SIGNATURE

(Quals: TPROC [if 4.1 = "N/A"], TLBIE, or TLBIEV)



DATE

11/2/06

PRINT LAST NAME

Chao

10 - LBIE SCREEN DISTRIBUTION

Check the appropriate box:

☐ This is an LBIE screen for a procedure change and is to be processed with the procedure change.

☐ This LBIE screen results in an LBIE being required, and is to be processed with the LBIE.

☒ This LBIE screen results in no LBIE required. Send a completed copy of the LBIE screen to:

Licensing, Attention: LBIE Process Owner.

Letter from Pacific Gas and Electric Company to the
County of San Luis Obispo, dated November 9, 2006,
Completion of Mitigation Measure G-3A, Long Term Seismic Program Update
DCPP Steam Generator Replacement Project



**Pacific Gas and
Electric Company**

Steam Generator Replacement Project
Strategic Projects Department
Diablo Canyon Power Plant

Diablo Canyon Power Plant
P. O. Box 56
Avila Beach, CA 93424

(805) 545-4302
(805) 545-6109 (FAX)

November 9, 2006

Project Letter: SGRP-06-753

Mr. James Caruso
County of San Luis Obispo
Department of Planning and Building
County Government Center
San Luis Obispo, CA 93408

Subject: Completion of Mitigation Measure G-3A, Long Term Seismic Program Update
DCPP Steam Generator Replacement Project
Reference: EIR Mitigation Measure G-3a
Attachments: None

Dear Mr. Caruso:

The purpose of this letter is to inform you PG&E has completed Mitigation Measure G-3A, Long Term Seismic Program Update, as required by the Final Environmental Impact Report (FEIR) for the Steam Generator Replacement Project. This mitigation measure requested:

“The analyses completed for the Long Term Seismic Program shall be refined to incorporate new earthquake data that have been derived since publication of the LTSP. This update should be reviewed by the Diablo Canyon Independent Safety Committee, the NRC, and the CPUC at least 60 days prior to final approval of the OSG Storage Facility design. Based on the updated information, a new Design Earthquake (the seismicity characteristics that structure is designed to withstand) shall be developed for the proposed OSG Storage Facility by PG&E. PG&E shall also confirm that the updated information has been submitted to the NRC for consideration in the OSG Storage Facility design plan.”

Background

The LTSP is a margin assessment used to verify the adequacy of the seismic design of the Diablo Canyon Power Plant, and was conducted by order of the Nuclear Regulatory Commission (NRC) pursuant to the Atomic Energy Act. As a commitment to the NRC at the completion of the LTSP study in the early 1990's, PG&E has maintained a highly qualified geosciences staff to keep informed of new geological, seismic, and seismic engineering information and evaluate such information with respect to its potential significance to Diablo Canyon. The Geosciences Department is charged with studying relevant information gathered from recent seismic events world-wide, and assessing any impact on the seismic design basis of Diablo Canyon. Recent findings are recorded and shared with the NRC. Technical meetings are held with the NRC staff to provide updates on these assessments. As such, the LTSP program is a living program that

will be maintained through the life of the Diablo Canyon plant as a condition of the NRC operating license. Since completion of the LTSP, the Geosciences Department has performed numerous field inspections and analysis of the important recent earthquakes world-wide including the 1999 earthquakes in Turkey and Taiwan, and the 2003 San Simeon and 2004 Parkfield earthquakes. The newly acquired earthquake and ground motion information is assessed and evaluated and the LTSP is 'updated' after every significant earthquake in the world. As an example, the latest seismic information was used in the design of the ISFSI that is now under construction next to the Old Steam Generator Storage Facility (OSGSF) site.

OSGSF Seismic Design Criteria

The technical approach for developing the seismic design criteria for analysis of the OSGSF facilities incorporates the latest information and analysis as is appropriate for this facility. The criteria apply to the analysis of the stability of the slope above the proposed site and the seismic design basis for the storage building.

The seismic hazard characteristics for the OSGSF site were established based on a site-specific evaluation for the OSGSF site using current information. This included the development of a site-specific, elastic design response spectrum considering the geologic, tectonic, seismologic, and soil characteristics associated with the site. Existing characterization of the regional seismic sources was reviewed (and updated as necessary) using data from the Central Coast Seismic Network and the 2003 San Simeon and 2004 Parkfield earthquake events. Earthquake ground motions at the OSGSF site were assessed utilizing the most recent ground motion models, based on the seismic source characterization with consideration of site and other relevant effects. The ground motion representations have a 10-percent probability of being exceeded in 50 years (475-year return period). Because the OSG Facility is not a NRC-defined Class 1 structure, the design of the building conforms to the requirements of the 2001 California Building Code, which is based on the 1997 Uniform Building Code.

The design response spectrum diagrams contain the site specific spectra for soil type S_D ($V_s = 310$ m/s) and for soil type S_C ($V_s = 620$ m/s) (referred to as rock in the diagram) to be applied to the OSGSF site. The four spectra shown for each soil type (Included in the August 2006 report 'Geotechnical foundation design criteria, Old Steam Generator Storage Facility, Diablo Canyon Power Plant, San Luis Obispo, California' by Fugro West and the February 2006 report by William Lettis & Associates, 'Analysis of slope stability for the Old Steam Generator Storage Facility (OSGSF), Diablo Canyon Power Plant) include the average spectra from the 1997 attenuation models (Abrahamson and Silva, 1997; Campbell, 1997; Sadigh and others, 1997; Boore and others, 1997), and the three spectra from the preliminary "New Generation Attenuation" models. All of these spectra are enveloped by the 1997 Uniform Building Code Spectrum for Zone 4 and the applicable near source factors.

Conclusion

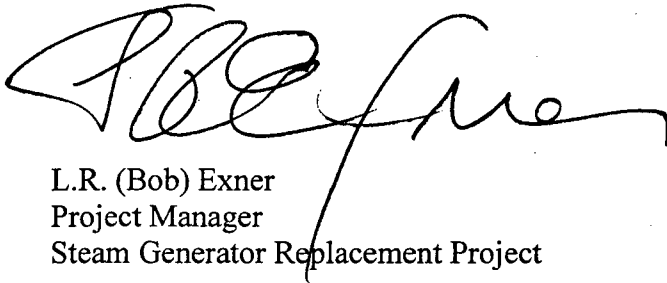
PG&E has complied with the components of Mitigation Measure G-3A as discussed above.

1. The Long Term Seismic Program was refined and incorporates new earthquake data that have been derived since publication of the LTSP.
2. The OSGSF design incorporates the newly updated seismic analyses.

3. The information has been reviewed in accordance with 10 CFR 50.59, and submitted to the NRC by PG&E Letter DCL-06-125 dated November 9, 2006 with a copy to the CPUC and DCISC. This information will be reviewed by the NRC inspectors during construction of the facility.

If you have any questions please contact me at (805) 545-4302.

Sincerely,

A handwritten signature in black ink, appearing to read 'L.R. Exner', written over the printed name and title.

L.R. (Bob) Exner
Project Manager
Steam Generator Replacement Project

cc: Frank Haselton
DCPP SGRP Distribution

LRE: maa