



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

April 17, 2020

Mr. James M. Welsch
Senior Vice President, Generation
and Chief Nuclear Officer
Pacific Gas and Electric Company
Diablo Canyon Power Plant
P.O. Box 56
Avila Beach, CA 93424

SUBJECT: SAFETY EVALUATION REPORT FOR THE PACIFIC GAS AND ELECTRIC
COMPANY HUMBOLDT BAY INDEPENDENT SPENT FUEL STORAGE
INSTALLATION QUALITY ASSURANCE PLAN HBI-L6 REVISION 0 (CAC NO.
001028)

Dear Mr. Welsch:

By letter dated February 14, 2019 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML19045A700), as supplemented on September 3, 2019 (ADAMS Accession No. ML19247E271), Pacific Gas and Electric Company (PG&E) requested approval of Revision 0 to the Humboldt Bay (HB) Independent Spent Fuel Storage installation (ISFSI) Quality Assurance Plan (QAP).

Specifically, PG&E submitted HBI-L6, "Humboldt Bay ISFSI Quality Assurance Plan," Revision 0. In accordance with License Condition 14 of Special Nuclear Material License Number 2514 (SNM-2514) PG&E submitted for NRC approval a stand-alone HB ISFSI QA Plan. PG&E plans to terminate its Humboldt Bay Power Plant, Unit 3 Part 50 license which historically has been applied to its 10 CFR Part 72, Subpart G QAP in accordance with 10 CFR 72.140(d), therefore; the need for a stand-alone NRC approved Title 10 of the *Code of Federal Regulation* (10 CFR) Part 72, Subpart G QAP.

As a result of our review of the proposed Humboldt Bay ISFSI QAP, the staff prepared a safety evaluation report (SER) to document the independent verification against the requirements of 10 CFR Part 72. The enclosed SER contains information regarding the scope of the staff's review and our conclusions for the Humboldt Bay ISFSI QAP, HBI-L6, Revision 0. The staff found that the Humboldt Bay Part 72 ISFSI QAP meets the requirements of 10 CFR Part 72, Subpart G, "Quality Assurance."

If you have any questions regarding this approval of the QAP, please contact me at (301) 415-3174 or Jon Woodfield at (301) 415-8727.

Sincerely,

/RA/

Alayna Pearson, Acting Chief
Inspection and Oversight Branch
Division of Fuel Management
Office of Nuclear Material Safety
and Safeguards

Docket No. 07200027
CAC No. 001028

Enclosure:
Safety Evaluation Report

SUBJECT: SAFETY EVALUATION REPORT FOR THE PACIFIC GAS AND ELECTRIC COMPANY HUMBOLDT BAY INDEPENDENT SPENT FUEL STORAGE INSTALLATION QUALITY ASSURANCE PLAN HBI-L6 REVISION 0 (CAC NO. 001028)

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION REPORT
Docket No. 07200027
Humboldt Bay Independent Spent Fuel Storage Installation Quality Assurance Plan

SUMMARY

By letter, dated February 14, 2019, (Agencywide Documents Access and Management System (ADAMS) Accession No. ML19045A700), as supplemented on September 3, 2019 (ADAMS Accession No. ML19247E271), Pacific Gas and Electric Company (PG&E) (the licensee) submitted the Humboldt Bay (HB) Independent Spent Fuel Storage Installation (ISFSI) Quality Assurance Plan (QAP) to the U.S. Nuclear Regulatory Commission (NRC) for review and approval. Revision 0 (dated 8/28/2019) to the HB QAP titled HBI-L6, "Humboldt Bay ISFSI Quality Assurance Plan" established a quality assurance program to satisfy each of the applicable criteria in accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) Part 72, Subpart G.

QAP HBI-L6 is associated with special nuclear material license SNM-2514, and docket number 07200027 for independent spent fuel storage at the HB site. The QAP is a standalone description of the HB ISFSI QAP which meets the requirements of Part 72, Subpart G.

The NRC staff (the staff) reviewed the application, including relevant supplemental information, using the guidance in NUREG-1567, "Standard Review Plan for Spent Fuel Dry Storage Facilities," Section 12, "Quality Assurance Evaluation," dated March 2000 (ADAMS Accession No. ML003686776). Based on the statements and representations in the QAP Description, as supplemented, the staff concluded that the package meets the requirements of 10 CFR Part 72, Subpart G.

The following sections include the staff's evaluation and findings in the areas related to the review.

EVALUATION

The NRC's regulation 10 CFR 72.24(n) has requirements for each application for a license under Part 72 to include a description of the QA program that satisfies the requirements of Subpart G. Humboldt Bay has already received a license and constructed its ISFSI.

During the application process for its ISFSI, to meet the requirements of regulation 10 CFR 72.140(b), Establishment of (QA) program, HB invoked regulation 72.140 (d), Previously - approved programs. At the time of its application for a specific ISFSI license, HB had a previously NRC approved QAP satisfying the requirements of Appendix B to 10 CFR Part 50. In the HB ISFSI specific license safety analysis report (SAR) (Now UFSAR), in Chapter 11, Quality Assurance, HB notified the NRC, in accordance with 72.4, of its intent to apply its previously-approved QAP to ISFSI activities. HB met the requirements of 72.140(c) and in Chapter 11 of

Enclosure

the ISFSI SAR identified the previously-approved Part 50 QAP by date of submittal to the Commission, docket number, and date of Commission approval.

Soon HB plans to terminate its Part 50, Appendix B QAP. Upon termination, HB will no longer have a previously approved QAP which satisfies the requirements of 72.140(b) and 72.140(d). Therefore, to continue to meet the requirements of 72.140(b) and (c), HB has submitted for NRC approval a standalone QAP satisfying the requirements of Subpart G to Part 72.

The purpose of this evaluation is to review and evaluate the proposed specific license QAP report HBI-L6 to assess whether the HB ISFSI QAP as written continues to comply with the requirements of 10 CFR Part 72, Subpart G. The staff reviewed the description of the HB Part 72 QAP, using the guidance in NUREG-1567, "Standard Review Plan for Spent Fuel Dry Storage Facilities," Section 12, "Quality Assurance Evaluation," dated March 2000 (ADAMS Accession No. ML003686776).

The licensee provides a high-level description in HBI-L6 of its HB ISFSI QAP. It discusses the procedures and controls that are in place to control all quality related activities associated with the HB ISFSI. Since HB already has a license, HB is subject to the NRC staff performing inspections to determine whether the QA program is being implemented effectively.

HBI-L6 addresses each of the 18 criteria of 10 CFR Part 72, Subpart G. The QA program description identifies the items important to safety (ITS) and includes information about managerial and administrative controls to ensure the safe operation of the ISFSI.

In Section 1 of HBI-L6, the HB QA organization is described. QA functional responsibilities are assigned to specific directors and managers within the HB ISFSI organization. The Nuclear Quality Verification Organization has the responsibility for quality assurance. Individuals in this organization do not have direct responsibility for performing the work being verified; are trained and qualified in QA concepts and practices; and are independent of the organization responsible for performing a task. Individuals in this organization are free from direct pressures for cost and schedule that assures the ability to identify quality problems; initiate, recommend or provide solutions through designated channels; and verify implementation of solutions. Individuals within the organization have the authority to stop unsatisfactory work and control further processing, delivery, or installation of nonconforming material. Specific responsibilities are described in implementing procedures.

In Section 2 of HBI-L6, the QA program is described. The HB ISFSI QA Program prescribes the quality requirements and controls that govern the important to safety operations and maintenance activities for the storage of spent nuclear fuel and Greater than Class C waste. A graded approach is used to establish the quality controls applied to ITS Structures, Systems and Components (SSCs). The status and adequacy of the HB ISFSI QAP and implementing procedures shall be regularly monitored and revised, as necessary, to improve its effectiveness. Management of other organizations participating in the quality assurance program shall review regularly the status and adequacy of that part of the QAP they are executing. Implementation of the HB ISFSI QAP is accomplished through separately issued procedures. Indoctrination and continuing training for personnel implementing ITS activities are conducted to assure suitable proficiency is achieved and maintained.

In Section 3 of HBI-L6, Design Control is described. Design activities are controlled to ensure that design, technical, and quality requirements are correctly translated into design documents and that changes to design and design documents are properly controlled.

In Section 4 of HBI-L6, Procurement Document Control is described. Procurement documents shall include those requirements necessary to ensure that the items and services to be provided will have the desired quality.

In Section 5 of HBI-L6, Instructions, Procedures, and Drawings are described. Quality activities are to be prescribed by and accomplished in accordance with documented instructions, procedures, and drawings. Changes to or deviations from established instructions, procedures, or drawings require the same review and approval as the original document. Instructions, procedures, and drawings shall be maintained as quality documents.

In Section 6 of HBI-L6, Document Control is described. A document control system shall be established to identify the current revision of instructions, procedures, specifications, drawings, and procurement documents. Written procedures shall identify those responsible for preparing, reviewing, approving, and issuing documents.

In Section 7 of HBI-L6, Control of Purchased Material, Equipment, and Services is described. Supplier activities that provide purchased material, equipment, and services shall be monitored as necessary to assure such items and services meet procurement document requirements.

In Section 8 of HBI-L6, Identification and Control of Materials, Parts, and Components is described. Materials, parts, and components shall be identified and controlled in a manner to preclude the use of incorrect or defective items. Written procedures shall be in place to describe this process.

In Section 9 of HBI-L6, Special Processes are described. Special processes shall be controlled and performed by qualified personnel using written procedures or instructions in accordance with applicable codes, standards, specifications, criteria, or other special requirements.

In Section 10 of HBI-L6, Licensee Inspections are described. A program for inspection of SSCs and activities affecting quality will be conducted. Implementing procedures will describe the organizational responsibilities necessary to carry out the inspection program. Inspections shall be planned in accordance with approved procedures, and based on drawings, specifications, and other controlled documents. Inspections shall be performed by qualified individuals other than those who performed or directly supervised the activity being inspected.

In Section 11 of HBI-L6, Test Control is described. A testing program will be conducted, as necessary, to demonstrate that SSCs will perform satisfactorily in service. The Test Control Program will ensure that the necessary testing is identified and performed at the appropriate time in accordance with written test procedures that incorporate or reference the requirements and acceptance limits contained in the applicable design documents. The procedures shall provide for evaluation and documentation of the test results and data. The acceptability of the results will be determined by a qualified person or group. Test records will be maintained as quality records.

In Section 12 of HBI-L6, Control of Measuring and Test Equipment is described. Organizational responsibilities by procedure shall be delineated for establishing, implementing, and assuring the effectiveness of the calibration program for measuring and test equipment. During long-term storage of spent fuel at the HB ISFSI, the Diablo Canyon Power Plant Radiation Protection organization will be responsible for the calibration program for HB ISFSI measuring and test equipment.

In Section 13 of HBI-L6, Handling, Storage, and Shipping Control is described. HB ISFSI material and equipment shall be handled, stored, and shipped in accordance with design and procurement requirements that will prevent damage, deterioration, or loss.

In Section 14 of HBI-L6, Inspection, Test, and Operating Status is described. The procedures implementing control of inspection, test, and operating status shall clearly delineate authority for the application, change, or removal of a status identifier. Procedures shall specify the necessary controls for indicating inspection and test status, assuring that required inspections and tests are performed in the prescribed sequence; to prevent inadvertent use of or operation.

In Section 15 of HBI-L6, Nonconformances are described. Items and activities that do not conform to requirements shall be controlled in a manner that will prevent their inadvertent use or installation. Measures shall be established to identify, label and segregate nonconforming items to indicate their unacceptable status and to prevent inadvertent use or installation until the nonconformance is properly dispositioned. Labels associated with a nonconforming item shall only be removed by authorized personnel. Nonconforming conditions are documented, reviewed and accepted, rejected, repaired or reworked in accordance with procedures.

In Section 16 of HBI-L6, Corrective Action is described. Conditions adverse to quality may include, but not be limited to: engineering, design, and drafting errors; equipment failures and malfunctions; deficiencies, deviations; and defective material, equipment, and nonconformances. Conditions adverse to quality shall be identified, controlled, reviewed, and evaluated to determine remedial action and corrective action. The evaluation should be based on safety significance. Corrective actions shall be accomplished in a time commensurate with the safety significance. For significant conditions adverse to quality, the cause for the condition, and the corrective action taken to prevent recurrence shall be documented and reported to appropriate levels of management.

In Section 17 of HBI-L6, QA Records are described. A management control system for the collection, storage, and maintenance of completed QA records shall be maintained. The records management program shall be designed and implemented to assure that the QA records are complete, readily retrievable when needed, and properly stored and protected from damage or destruction during storage by fire, flooding, theft, environmental conditions, or other causes. The retention schedule for QA records is identified in implementing procedures. Electronic QA records, including backup copies, are stored in two redundant electronic media storage systems at physically independent electronic locations. At a minimum, quality records include design records, records of use, and the results of reviews, inspections, tests, audits, monitoring of work performance, and materials analyses. Records required by the HB ISFSI QAP implementing procedures, and furnished by vendors, suppliers, subcontractors, and contractors that perform or supply quality activities ITS SSCs are also QA records and shall be maintained.

In Section 18 of HBI-L6, Audits are described. Measures shall be taken to establish a comprehensive system of planned and periodic audits to assess, monitor, and verify compliance with all aspects of the quality assurance program and determine the effectiveness of the HB ISFSI QAP and implementing activities. Internal, external and supplier audits are performed in accordance with written procedures and/or checklists. Audits are performed by qualified personnel not having direct responsibility in the areas audited. Auditors shall have experience, training or qualifications commensurate with the scope and complexity of their audit responsibility. Audit scopes and schedules are established to meet applicable regulatory

requirements and are based on the status and safety significance of the activities to be audited. At a minimum, internal audits of HB ISFSI operations, in accordance with applicable regulatory requirements are at least once every 24 months or more frequently as performance dictates. External audits of suppliers providing ITS materials, parts, equipment or services to access the effectiveness of the control of quality are scheduled and performed based on the importance of an SSC or activity to confirm implementation of their Quality Program requirements, but at least once every 3 years. Audit reports shall be prepared, issued to and reviewed by responsible management of the audited and auditing organizations. Audit records shall be generated and retained. Follow-up action, including re-audit of deficient areas, shall be taken, where applicable.

EVALUATION FINDINGS

Based upon a detailed review and evaluation of the QA program description contained in the HB ISFSI QAP document HBI-L6, Revision 0, dated 8/28/2019 the staff concludes that:

- The QA program describes requirements, procedures, and controls that, when properly implemented, comply with the requirements of 10 CFR 72, Subpart G.
- The applicant established and delineated the responsibilities, authorities, and duties of persons and organizations performing activities affecting quality.
- The QA program covers activities affecting SSCs important to safety as identified in the current Updated Final Safety Analysis Report.
- The organizations and persons performing QA functions have the independence and authority to perform their functions without undue influence from those directly responsible for costs and schedules.
- The licensee's description of the QA program is in compliance with applicable NRC regulations and industry standards, and the QA program can be implemented for the operation, maintenance, and decommissioning phases of the installation's life cycle.
- The QA program satisfied the requirements of 10 CFR 72.24(n).

REFERENCES

1. PG&E Letter HIL-19-010, "Response to NRC Request for Supplemental Information for the Humboldt Bay Independent Spent Fuel Storage Installation Quality Assurance Plan," dated September 3, 2019 (ADAMS Accession No. ML19247E271)
2. NRC Letter to PG&E, "Acceptance Review of Humboldt Bay Independent Spent Fuel Storage Installation Quality Assurance Plan (Revision 0) – Request for Supplement Information," dated March 29, 2019 (ADAMS Accession No. ML19088A225)
3. PG&E Letter HIL-19-001, "Humboldt Bay Independent Spent Fuel Storage Installation Quality Assurance Plan," Revision 0, dated February 14, 2019 (ADAMS Accession No. ML19045A700)

CONCLUSION

Based on the statements and representations contained in the application for a standalone Quality Assurance Program in accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) Part 72, Subpart G, the staff concluded that the Humboldt Bay ISFSI Quality Assurance Plan, HBI-L6, Revision 0, dated 8/28/2019, is acceptable and in conformance with the applicable requirements of 10 CFR Part 72 Subpart G.

Issued on April 17, 2020.