13 FINANCIAL QUALIFICATIONS AND DECOMMISSIONING EVALUATION

13.1 Conduct of Review

The objectives of this evaluation are to ensure that the applicant's financial qualifications for constructing and operating the ISFSI and its provisions for the eventual decommissioning of the ISFSI provide reasonable assurance of adequate protection of public health and safety. The evaluation addresses the applicant's financial qualifications, the design and operational features of the ISFSI that facilitate decommissioning, the proposed decommissioning plan, and the associated financial assurance and record keeping plan for decommissioning.

Financial qualification requirements are specified in 10 CFR 72.22(e). Requirements regarding the decommissioning of the ISFSI are given in 10 CFR 72.24(q), 72.30, and 72.130.

13.1.1 Financial Qualifications Evaluation

In its application dated December 21, 2001, as supplemented by letter dated June 7, 2002, PG&E provided information to address the financial qualification requirements of 10 CFR 72.22(e). This required information includes estimated ISFSI construction costs, estimated operating costs over the life of the ISFSI, and the estimated decommissioning costs and necessary financial arrangements to provide reasonable financial assurance that decommissioning will be carried out after the removal of spent fuel from the ISFSI. PG&E has estimated the construction costs of the ISFSI to be $63 million. The applicant further estimates that the ISFSI operating costs for the duration of the plant operating licenses (through 2025) would be $69 million. These estimates include the procurement of storage casks and canisters, and include the assumption that 50 storage casks will be loaded to retain full core offload capability in both spent fuel pools through the end of the current operating licenses for Units 1 and 2. To ensure a conservative estimate of ISFSI operating costs, the applicant has also made the following assumptions: (1) both units are permanently shut down at the end of the current operating licenses; (2) all of the remaining spent fuel is subsequently removed from the spent fuel pools and placed in the ISFSI (an additional 88 casks); and the ISFSI is operated from 2026 through 2040, due to uncertainties regarding the availability of a permanent Federal repository. This final assumption is only used to conservatively estimate projected costs; if the applicant desired an extension beyond the initial 20-year term of the requested ISFSI license, it would need to submit a license renewal request for NRC approval at a future date. These assumptions regarding ISFSI operation following permanent plant shutdown would result in additional operating costs of $107 million. PG&E estimated that ISFSI decommissioning costs will fall between $12.5 and $13.9 million.

PG&E stated in its application that capital expenditures, and operation and maintenance costs will be covered by revenues derived from electric rates. PG&E is a public utility subject to rates established by the California Public Utilities Commission. On April 6, 2001, PG&E filed a petition for relief under Chapter 11 of the United States Bankruptcy Code. Pending resolution of the proceeding, the Bankruptcy Court must authorize certain capital expenditures. The applicant has contracted with Holtec International, Inc. to provide the dry cask storage system to be used at the Diablo Canyon ISFSI, and that contract has been approved by the Bankruptcy Court. On the basis of the information provided in the license application and in PG&E's letter of June 7, 2002 (Pacific Gas and Electric Company, 2002), the staff finds that PG&E has

demonstrated reasonable assurance of obtaining the necessary funds for ISFSI construction, operation and decommissioning, and that the financial information requirements of 10 CFR 72.22(e) have been met.

13.1.2 Decommissioning Evaluation

13.1.2.1 Design and Operational Features

The requirements of 10 CFR 72.130 specify that the ISFSI must be designed for decommissioning. Provisions must be made to facilitate decontamination of structures and equipment, minimize the quantity of radioactive wastes and contaminated equipment, and facilitate the removal of radioactive wastes and contaminated materials at the time the ISFSI is permanently decommissioned. Also, 10 CFR 72.30(a) requires the submittal of a proposed decommissioning plan that contains sufficient information on proposed practices and procedures for the decontamination of the site and facilities and for disposal of residual radioactive materials after all spent fuel and other stored material has been removed. This plan must identify and discuss those design features of the ISFSI that facilitate its decontamination and decommissioning at the end of its useful life.

The NRC staff has previously reviewed the design of the Holtec HI-STORM 100 storage system, and concluded that its design features will facilitate decontamination and decommissioning. The design and operational features of the HI-STORM 100SA storage system to be used at the Diablo Canyon ISFSI are very similar and will likewise minimize contamination and facilitate decommissioning at the end of the useful life of the ISFSI. These features include procedures for preventing contamination of MPC outer surfaces during loading in the spent fuel pool and for decontaminating the HI-TRAC transfer cask and MPC top lid prior to movement to the CTF. The zero-leakage design of the MPCs, which are loaded and sealed before transfer to the storage pad, and the passive cooling design of the storage system, minimize the potential for radioactive contamination to occur and to spread. The neutron flux levels generated by the spent fuel are expected to be sufficiently low that any activation of the overpacks or storage pads will be insignificant. Any HI-STORM overpacks meeting the free release criteria may be made available to other parties for their use or disposed of as non-controlled material. If these components do become slightly contaminated, the steel-lined interior surfaces will facilitate decontamination efforts. In the unlikely event any residual contamination cannot be sufficiently removed, the overpacks will still be suitable for disposal as low specific activity material in a licensed near-surface disposal site. The transfer cask will be decontaminated as necessary throughout its use in accordance with operating procedures; therefore, at the time of decommissioning, it should be in a condition suitable for free release. If it is not able to be decontaminated to appropriate levels, it can also be disposed of in a near-surface disposal site. Through the imposition of administrative controls, the applicant will limit any contamination on the transfer cask prior to its movement, so neither the CTF structures, nor the cask transporter are expected to become contaminated. However, those components can also be decontaminated, if necessary.

Radiation survey measurements will be made of all components prior to their final dispensation to determine whether they will be subject to further decontamination efforts, disposed of as low-level radioactive waste, or released for re-use or commercial disposal.

13.1.2.2 Decommissioning Plan

The requirements of 10 CFR 72.30(a) specify that each application for an ISFSI license include a proposed decommissioning plan that contains sufficient information on proposed practices and procedures for the decontamination of the site and facilities and for disposal of residual radioactive materials after all spent fuel and other stored material has been removed, in order to provide reasonable assurance that the decontamination and decommissioning of the ISFSI at the end of its useful life will provide adequate protection to the health and safety of the public. The requirements of 10 CFR 72.30(b) specify that the proposed decommissioning plan must also include a decommissioning funding plan containing information on how reasonable assurance will be provided that funds will be available to decommission the ISFSI. This information must include a cost estimate for decommissioning and a description of the method for assuring funds for decommissioning. The requirements of 10 CFR 72.30(c) specify that financial assurance for decommissioning must be provided by some combination of prepayment; a surety method, insurance, or other guarantee; or an external sinking fund. The requirements of 10 CFR 72.30(d) specify that records of information important to the decommissioning of a facility shall be kept in an identified location until the site is released for unrestricted use. These include records of spills or other unusual occurrences involving the spread of contamination around the site; as-built drawings and modifications of structures and equipment in restricted areas where radioactive materials are used or stored; a list of designated, or previously designated, restricted areas, and any contaminated areas requiring documentation; and records of the cost estimate performed and the funding method for the decommissioning funding plan.

The Diablo Canyon ISFSI Preliminary Decommissioning Plan (Pacific Gas and Electric Company, 2001) was prepared and submitted in accordance with the requirements of 10 CFR 72.30. The plan discusses the DCPP ISFSI decommissioning objective, activities and tasks; records; cost estimate; funding plan and decommissioning facilitation.

The ISFSI decommissioning plan is based on PG&E's assumption that the fuel assemblies will remain sealed in the loaded MPCs and will be transported offsite. The HI-STORM overpacks, HI-TRAC Transfer Cask, and other ISFSI components will be decontaminated as necessary, then disposed of as low-level radioactive waste at a licensed disposal site, or as non-controlled material at a commercial facility, as appropriate, or otherwise dispositioned to allow release of the ISFSI site for unrestricted use.

13.1.2.2.1 General Provisions

Each of the elements listed in 10 CFR 72.30 have been provided in the Diablo Canyon ISFSI SAR or in the ISFSI Preliminary Decommissioning Plan. As discussed in Section 13.1.2.1 of this SER, PG&E has described the measures that will provide for the necessary decontamination of the site and facilities and the disposal of residual radioactive materials after all spent fuel and other stored material have been removed.

13.1.2.2.2 Cost Estimate

The cost for decommissioning the Diablo Canyon ISFSI was estimated to be between $12.5 million and $13.9 million (2001 dollars), as stated in the Diablo Canyon ISFSI Preliminary Decommissioning Plan and PG&E's letter of June 7, 2002. This estimate covers the costs for decontamination of ISFSI structures and components, as well as the disposal of any ISFSI-related material as low-level radioactive waste. It does not cover the disposal of non-contaminated ISFSI-related material, which PG&E estimates will cost $6.5 million. By letter dated March 27, 2003 (Pacific Gas and Electric Company, 2003), PG&E provided an updated estimate of the total decommissioning costs for the Diablo Canyon Power Plant of $1.055 billion (2003 dollars). Thus, the ISFSI decommissioning costs represent a small fraction of the total estimated decommissioning costs for the power plant site.

13.1.2.2.3 Financial Assurance Mechanism and Record Keeping

The decommissioning funding mechanism for the Diablo Canyon ISFSI is described in the ISFSI Preliminary Decommissioning Plan. An external sinking trust fund account has been established by PG&E for the decommissioning of the DCPP, and that account contains monies for the decommissioning of the ISFSI. The ISFSI decommissioning costs are identified as separate line items in the detailed cost estimates provided in the decommissioning funding reports for Diablo Canyon Power Plant Units 1 and 2. The PG&E decommissioning funding program meets the appropriate requirements of 10 CFR 72.30(c), as described in the ISFSI Preliminary Decommissioning Plan and in the decommissioning funding reports for Diablo Canyon Power Plant Units 1 and 2.

In the ISFSI Preliminary Decommissioning Plan, PG&E also committed to maintain records in support of ISFSI decommissioning, as required by 10 CFR 72.30(d). Specifically, these records will include records of spills or unusual occurrences involving the spread of contamination around the site, as-built drawings and modifications of structures and equipment in the ISFSI restricted area(s), and decommissioning cost estimates and funding methods. These records will be maintained in accordance with PG&E's existing records management program, which falls under the DCPP Quality Assurance Program, discussed in Appendix E of the Diablo Canyon ISFSI License Application.

13.2 Evaluation Findings

The staff made the following findings regarding the applicant's financial qualifications and decommissioning plans for the ISFSI:

- The staff has determined that the applicant has adequately demonstrated its financial qualifications to construct, operate and decommission the proposed ISFSI, in accordance with 10 CFR 72.22(e).

- The staff has determined that the decommissioning plan submitted by the applicant provides reasonable assurance that the decontamination and decommissioning of the ISFSI at the end of its useful life will provide adequate protection to the health and safety of the public. The staff, therefore, concludes

that the proposed decommissioning plan complies with 10 CFR 72.24(q), 72.30(a) and 72.130.

- The staff has determined that the decommissioning funding plan submitted by the applicant is sufficient to provide reasonable assurance that costs related to decommissioning as characterized by the proposed decommissioning plan have been adequately estimated. The staff, therefore, concludes that the cost estimate in the decommissioning funding plan complies with 10 CFR 72.30(b).

- The staff has determined that the financial assurance mechanisms submitted by the applicant are sufficient to provide reasonable assurance that adequate funds will be available to decommission the ISFSI so that the site will ultimately be available for unrestricted use for any private or public purpose. The staff, therefore, concludes that the financial assurance mechanisms in the decommissioning funding plan comply with 10 CFR 72.30(c).

- The staff has determined that the applicant will maintain all records of information important to the decommissioning of the ISFSI, consistent with the requirements of the DCPP Quality Assurance Program. The staff, therefore, concludes that the record keeping commitments made by the applicant comply with 10 CFR 72.30(d).

13.3 References

Pacific Gas and Electric Company. *Diablo Canyon Independent Spent Fuel Storage Installation Preliminary Decommissioning Plan, Appendix F to License Application*, Docket No. 72-26. Pacific Gas and Electric Company, December 21, 2001.

Pacific Gas and Electric Company. *Diablo Canyon Independent Spent Fuel Storage Installation Supplemental General and Financial Information - 10 CFR 72.22.* Letter DIL-02-008, Pacific Gas and Electric Company, June 7, 2002.

Pacific Gas and Electric Company. *Decommissioning Funding Reports for Diablo Canyon Power Plant Units 1 and 2 and Humboldt Bay Power Plant Unit 3*. Letter DCL-03-035, Pacific Gas and Electric Company, March 27, 2003.