GE Hitachi Nuclear Energy

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~~Proprietary Information Notice~~
Enclosure 1 contains GE-Hitachi Company ~~proprietary information~~ which is to be withheld from public disclosure in accordance with 10CFR2.390. Upon removal of Enclosure 1 the balance of this letter may be made public.

M220078

June 1, 2022

Osiris Siurano-Perez, Project Manager
Fuel Facility Licensing Branch
Division of Fuel Management
Office of Nuclear Material Safety
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Attn: Document Control Desk

Subject: Response to Request for Additional Information for GE Nuclear Test Reactor License Renewal Application

References:
1) NRC License SNM-960, Docket 07000754
2) Revised License Renewal Application for Vallecitos Nuclear Center, dated 3/18/2015 (ML15077A501, ML15077A496)
3) SNM-960 Revised License Renewal Application dated 2/26/2016 (ML16057A711, ML16057A714)
4) Letter D. Heckman (GEH) to O. Siurano-Perez (NRC), SNM-960 Amendment to License Renewal Application, dated 1/7/2022 (ML22007A083)
5) MSTeams meeting on proposed request for additional information between NRC and GEH, held on 5/1/2022
6) Letter O. Siurano-Perez (NRC) to D. Heckman (GEH) Request for Additional Information Regarding Revisions to the 2015 and 2016 Special Nuclear Materials License Number 960 Renewal Applications, dated 5/2/2022 (ML22096A295)

GE Hitachi Nuclear Energy Americas LLC (GEH) is providing the enclosed responses to the NRC's request for additional information (Ref. 6) as discussed on May 5, 2022 (Ref. 5). These responses pertain to the requested amendment to license SNM-960 (Ref. 4) in the form of edits to the 2015 and 2016 revisions to the license renewal application (Ref. 2 and 3) as cited in license condition 10 of the SNM-960 license. Responses are provided in Enclosure 1. Enclosure 2 contains updated Chapters 02 and 10 of the 2015 / 2016 license renewal application.

Please contact me if you have any questions regarding this matter.

Sincerely,

David Heckman
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Date: 2022.06.01 08:48:23 -07'00'

David J. Heckman, Site Regulatory Affairs / Licensing Lead

Vallecitos Nuclear Center

Attachment 1: GEH Affidavit
Enclosure 1: GEH Response to NRC Request for Additional Information (GEH Proprietary)
Enclosure 2: Updated Chapters to License Renewal Applications

DJH 22-009

Attachment 1

AFFIDAVIT

I**, David J. Heckman,** state as follows:

(1) I am the Regulatory Affairs / Licensing Lead, of the Vallecitos Nuclear Center, GE Hitachi Nuclear Energy Americas, L.L.C. (GEH) and have been delegated the function by GEH of reviewing the information described in paragraph (2) which is sought to be withheld in Enclosure 1 to GEH's letter, M220078, Response to Request for Additional Information for GE Nuclear Test Reactor License Renewal Application.

(2) GEH proprietary information is contained in Enclosure 1 to this letter and is identified by the statement "GEH Proprietary Information."

(3) In making this application for withholding of proprietary information of which it is the owner or licensee, GEH relies upon the exemption from disclosure set forth in the Freedom of Information Act (FOIA), 5 USC Sec. 552(b)(4), and the Trade Secrets Act, 18 USC Sec. 1905, and NRC regulations 10 CFR 9.17(a)(4), and 2.390(a)(4) for trade secrets (Exemption 4). The material for which exemption from disclosure is here sought also qualifies under the narrower definition of trade secret, within the meanings assigned to those terms for purposes of FOIA Exemption 4 in, respectively, Critical Mass Energy Project v. Nuclear Regulatory Commission, 975 F2d 871 (DC Cir. 1992), and Public Citizen Health Research Group v. FDA, 704 F2d 1280 (DC Cir. 1983).

(4) The information sought to be withheld is considered to be proprietary for the reasons set forth in paragraphs (4)a. and (4)b. Some examples of categories of information that fit into the definition of proprietary information are:

a. Information that discloses financial, a process, method, or apparatus, including supporting data and analyses, where prevention of its use by GEH's competitors without license from GEH constitutes a competitive economic advantage over GEH and/or other companies.

b. Information that, if used by a competitor, would reduce their expenditure of resources or improve their competitive position in the design, manufacture, shipment, installation, assurance of quality, or licensing of a similar product.

(5) To address 10 CFR 2.390(b)(4), the information sought to be withheld is being submitted to the NRC in confidence. The information is of a sort customarily held in confidence by GEH and is in fact so held. The information sought to be withheld has, to the best of my knowledge and belief, consistently been held in confidence by GEH, not been disclosed publicly, and not been made available in public sources. All disclosures to third parties, including any required transmittals to the NRC, have been made, or must be made, pursuant to regulatory provisions or proprietary and/or confidentiality agreements that provide for maintaining the information in confidence. The initial designation of this information as proprietary information, and the subsequent steps taken to prevent its unauthorized disclosure are as set forth in the following paragraphs (6) and (7).

(6) Initial approval of proprietary treatment of a document is made by the manager of the originating component, who is the person most likely to be acquainted with the value and sensitivity of the information in relation to industry knowledge, or who is the person most likely to be subject to the terms under which it was licensed to GEH. Access to such documents within GEH is limited to a "need to know" basis.

(7) The procedure for approval of external release of such a document typically requires review by the staff manager, project manager, principal scientist, or other equivalent authority for technical content, competitive effect, and determination of the accuracy of the proprietary designation. Disclosures outside GEH are limited to regulatory bodies, customers, and potential customers, and their agents, suppliers, and licensees, and others with a legitimate need for the information, and then only in accordance with appropriate regulatory provisions or proprietary and/or confidentiality agreements.

(8) The information identified in paragraph (2) above is classified as proprietary because it contains details of GEH's processes, design and manufacturing facilities.

(9) Public disclosure of the information sought to be withheld is likely to cause substantial harm to GEH's competitive position and foreclose or reduce the availability of profit-making opportunities. The facility design and licensing methodology is part of GEH's comprehensive safety and technology base, and its commercial value extends beyond the original development cost. The value of the technology base goes beyond the extensive physical database and analytical methodology and includes development of the expertise to determine and apply the appropriate evaluation process. In addition, the technology base includes the value derived from providing analyses done with NRC-approved methods.

The research, development, engineering, analytical and NRC review costs comprise a substantial investment of time and money by GEH. The precise value of the expertise to devise an evaluation process and apply the correct analytical methodology is difficult to quantify, but it clearly is substantial. GEH's competitive advantage will be lost if its competitors are able to use the results of the GEH experience to normalize or verify their own process or if they are able to claim an equivalent understanding by demonstrating that they can arrive at the same or similar conclusions.

The value of this information to GEH would be lost if the information were disclosed to the public. Making such information available to competitors without there having been required to undertake a similar expenditure of resources would unfairly provide competitors with a windfall and deprive GEH of the opportunity to exercise its competitive advantage to seek an adequate return on its large investment in developing and obtaining these very valuable analytical tools.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge.

Executed on this 1st day of June 2022.

David Heckman

Digitally signed by David Heckman
Date: 2022.06.01 08:48:47 -07'00'

David J. Heckman
GE Hitachi Nuclear Energy Americas, L.L.C.

Enclosure 1:

GEH Response to NRC Request for Additional Information

(GEH Proprietary)

Enclosure 2:

Updated Chapters to License Renewal Applications

CHAPTER 2.0
ORGANIZATION AND ADMINISTRATION

2.1 POLICY

The Vallecitos Nuclear Center (VNC) policy is to maintain a safe work place for its employees, to protect the environment, and to assure operational compliance within the terms and conditions of special nuclear material license SNM-960 and applicable NRC regulations. Employees are provided a simple mechanism to report and have safety concerns addressed.

2.2 ORGANIZATIONAL RESPONSIBILITIES AND AUTHORITY

2.2.1 KEY POSITIONS (FIGURE 2.1)

Responsibilities, authorities, and interrelationships among the VNC organizational functions with responsibilities for safe operations and design changes are specified in approved position descriptions and in documented and approved practices. A single individual may be responsible for more than one position or a position may be split between two or more individuals.

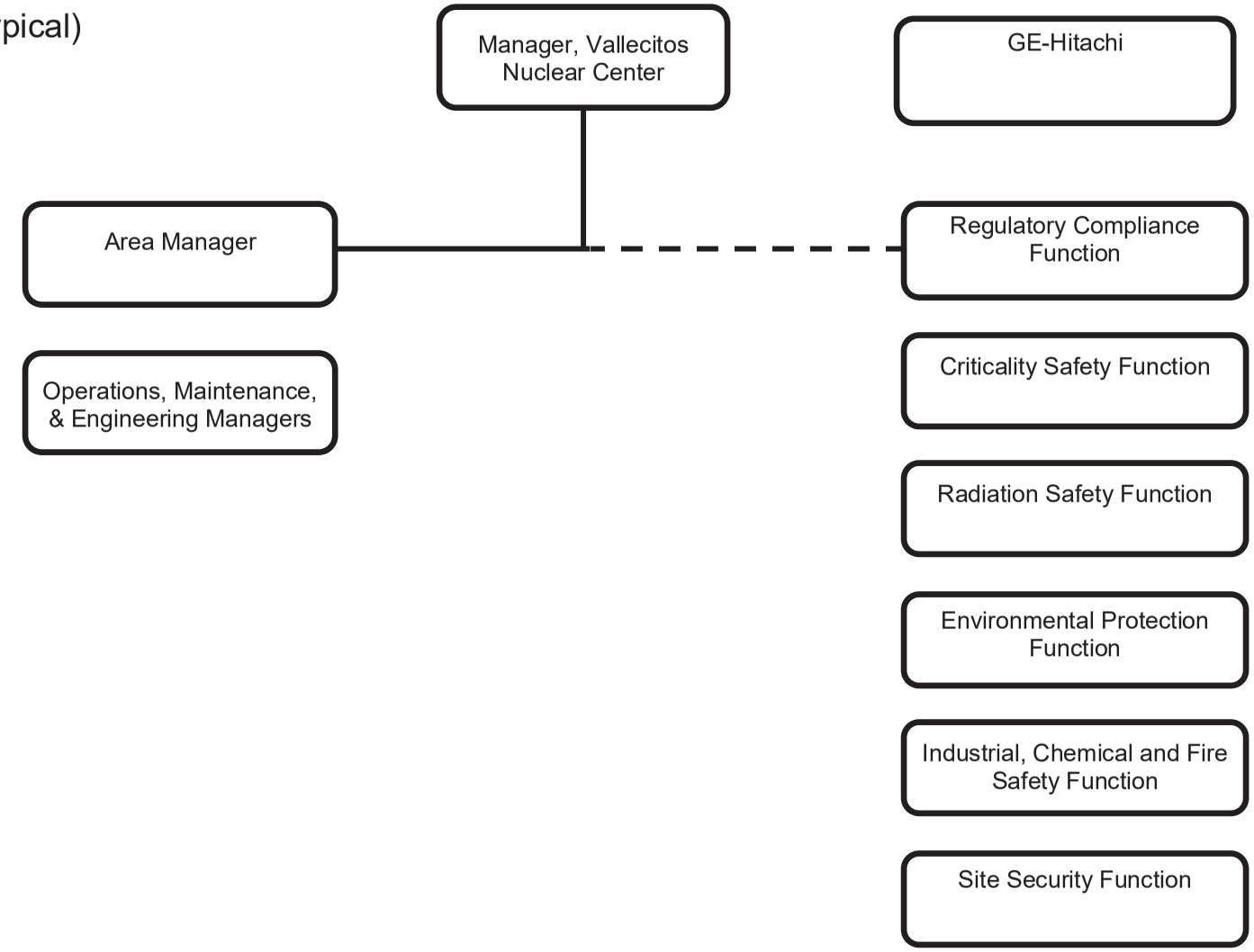
2.2.1.1 Manager, Vallecitos Nuclear Center

The Manager, Vallecitos Nuclear Center is the individual who has overall responsibility for safety and activities conducted at the facility. The Manager, Vallecitos Nuclear Center directs operations by procedure, or through other management personnel. The activities of the Manager, Vallecitos Nuclear Center are performed in accordance with VNC's policies, procedures, and management directives. The Manager, Vallecitos Nuclear Center provides for safety and control of operations and protection of the environment by delegating and assigning responsibility to qualified Area Managers who are charged with maintaining and operating the facility in accordance with applicable building codes and regulations.

The minimum qualifications of the Manager, Vallecitos Nuclear Center are a bachelor's degree and two years experience in nuclear operations or a high school diploma and five years supervisory or technical experience in a nuclear, manufacturing or other technical field. The Manager, Vallecitos Nuclear Center is knowledgeable of the safety program concepts as they apply to the overall safety of a

nuclear facility and has the authority to shutdown any process or facility. The Manager, Vallecitos Nuclear Center must approve restart of any operation shutdown.

Figure 2.1
VNC Organization Chart
(Typical)



2.2.1.2 Area Manager

An Area Manager is designated as the individual who is responsible for ensuring that operations and activities necessary for safe operations and protection of the environment are conducted properly within the assigned area of the facility. Designated Area Manager responsibilities include assuring that licensed activities conducted in accordance with properly issued and approved procedures. The Area Manager also assures that new employees receive appropriate instructions in radiation safety, site emergency procedures, general industrial safety and operating procedures commensurate with assigned duties. The Manager, Vallecitos Nuclear Center approves the assignment of the Area Manager.

The minimum qualifications of the Area Manager is one of the following three options:

Option 1, a combination of:

- Bachelor's degree or equivalent in a science or engineering subject
- Two years supervisory or technical experience in a nuclear, manufacturing or other technical field; and,
- One year of supervisory or technical experience in nuclear operations.

Option 2, a combination of;

- Bachelor's degree or Associate degree;
- Three years supervisory or technical experience in a nuclear, manufacturing or other technical field; and,
- One year of supervisory or technical experience in nuclear operations

Option 3, a combination of;

- High School diploma;
- Five years supervisory or technical experience in a nuclear, manufacturing or other technical field; and,
- Two year of supervisory or technical experience in nuclear operations

The Area Manager shall be knowledgeable of the safety program procedures (including as applicable chemical, radiological, criticality, fire, environmental and industrial safety) and shall have experience in the application of the program controls and requirements, as they relate to their areas of responsibility.

2.2.1.3 Regulatory Compliance Function

The Regulatory Compliance function is administratively independent of production responsibilities and has the authority to shutdown any process or facility in the event that adequate controls for any aspect of safety may not be assured. This function has designated overall responsibility to ensure compliance with federal, state and local regulations and laws governing operation of the licensed activities.

The manager of the Regulatory Compliance function must hold a bachelor's degree or equivalent and have two years of management experience in assignments involving regulatory activities or a high school diploma and five years supervisory or technical experience in a nuclear, manufacturing or other technical field.

2.2.1.4 Criticality Safety Function

The criticality safety function is administratively independent of production responsibilities, has oversight responsibility for the material storage area, and has the authority to shutdown potentially unsafe operations

The criticality safety function includes at least one technically trained person with a bachelor's degree or equivalent in a science or engineering subject, including one year of directly relevant criticality safety experience. Criticality safety staff with less than one year experience will be supervised by a technically trained criticality safety member or the Manager, Regulatory Compliance.

2.2.1.5 Radiation Safety Function

The radiation safety function is administratively independent of production responsibilities and has the authority to shutdown potentially unsafe operations

Designated areas of responsibility include:

- Establish the radiation protection and radiation monitoring programs, including the As Low As Reasonably Achievable (ALARA) program
- Establish the radiation protection design criteria, procedures and training programs to control contamination and exposure to individuals
- Evaluate radiation exposures of employees and visitors, and ensure the maintenance of related records
- Conduct radiation and contamination monitoring and control programs
- Evaluate the integrity and reliability of radiation detection instruments
- Provide analysis and approval of proposed changes in process conditions and process equipment involving radiological safety
- Provide advice and counsel to Site employees and management on matters of radiation safety
- Assess the effectiveness of the radiation safety program through audit programs.

A member of the radiation safety function shall have experience in the assigned safety function, and has authority and responsibility to conduct activities assigned to the radiation safety function. The minimum qualifications of personnel assigned functional responsibility in the radiation safety function shall be:

- The site radiation safety function leader shall hold a bachelor's degree or equivalent in a science or engineering subject, and have at least five years of experience in applied radiation protection. An alternate minimum experience qualification is a professional certification in health physics (CHP).
- A site radiation monitor technician (RMT) in the radiation safety function shall meet one of the following:
- Hold a bachelor's degree or equivalent in a science or engineering subject.
- Have a high school diploma and at least two years experience in Applied Radiation Protection or
- Have eight years experience in health physics or radiation protection.

- Have a high school diploma or equivalent with two years experience in handling radioactive materials or
- Two years of college and four months experience.

2.2.1.6 Environmental Protection Function

The environmental protection function is administratively independent of production responsibilities and has the authority to shutdown operations with potentially uncontrolled environmental conditions

Designated areas of responsibility include:

- Identify environmental protection requirements from federal, state and local regulations which govern SNM-960 operations
- Establish systems and methods to measure and document adherence to regulatory environmental protection requirements and license conditions
- Provide advice and counsel to Site employees and management
- Evaluate and approve new, existing or revised equipment, processes and procedures involving environmental protection activities
- Assure proper federal and state permits, licenses and registrations for non-radiological discharges from the facilities

2.2.1.7 Industrial Health and Safety (Including Chemical and Fire Safety Functions)

Industrial Health and Safety maintains programs generally related to OSHA and Cal/OSH regulations. In regards to SNM-960 operations, functions specifically pertinent are the chemical and fire safety functions. The function is administratively independent of the production responsibilities and has the authority to shutdown operations with potentially hazardous health and safety conditions.

Designated areas of responsibility include:

- Identify industrial health, chemical safety and fire protection requirements from federal, state, and local regulations which govern the SNM-960 operations
- Develop practices regarding non-radiological chemical hazards that could affect the safety of licensed materials
- Provide advice and counsel to Site employees and management on matters of industrial health, chemical and fire safety

- Provide consultation and review of new, existing or revised equipment, processes and procedures regarding industrial safety, chemical safety and fire protection

2.2.1.8 Site Security Function

The site security function is administratively independent of the production responsibilities. Designated areas of responsibility include:

- Provide physical security for the site
- Provide advice and counsel to Site employees and management on matters of site security

2.2.2 MANAGEMENT CONTROLS

Management controls for the conduct and maintenance of VNC's health, safety and environment protection programs are contained in formally approved, written procedures prepared in compliance with a formal document control program.

It is the responsibility of the manager of an activity or area involving radioactive materials to:

Take all necessary steps to plan and organize the work within their area of responsibility, in accordance with approved procedures.

Identify needs for operational procedure revisions when there is a planned change in conditions such as types or quantities of radioactive materials or equipment modifications.

Integrate the results of reviews, inspections, engineering assessments and investigations to correct or improve operational procedures, controls and performance.

2.3 TRAINING

Personnel training is conducted as necessary to provide reasonable assurance individuals are qualified, continue to understand, and recognize the importance of safety while performing assigned activities.

Training is provided for each individual at VNC, commensurate with assigned duties. Training and qualification requirements are met prior to personnel fully assuming the duties of their positions, and before assigned tasks are independently performed. Training relative to safety includes instructions to workers in accordance with 10 CFR 19.12, storage, transfer, and use of radioactive materials, minimization of exposures to radiation and limits, maintaining radiation exposures and radioactivity in effluents ALARA, radiation safety principles, radiation exposure reports, and risks involved in receiving low level radiation exposure. Training relative to safety is also provided on an as needed basis for chemical and fire safety, emergency response, and the responsibility to promptly report any condition that may lead to, or cause a violation of regulations, license requirement, or create unnecessary exposure.

2.3.1 ALARA COMMITTEE

The ALARA Committee is described in Chapter 4, Section 4.2.

2.3.2 VALLECITOS TECHNOLOGICAL SAFETY COUNCIL

Oversight responsibilities of the Vallecitos Technological Safety Council (VTSC) includes SNM 960 licensed activities. VNC's optional VTSC may be convened to provide an independent reviewing body. The VTSC is maintained via charter and is composed of personnel from a broad range of activities and technical disciplines (e.g., Operations, Engineering, EHS, Compliance, Maintenance). Membership is by appointment of the Manager, VNC Operations. The VTSC is responsible to the Manager, VNC Operations and is independent of both the Regulatory Compliance and NTR organizations.

2.4 CHANGE MANAGEMENT

Change Authorization is prepared whenever the work involves changes to:

- Facilities, equipment, or processes so that safety or regulatory compliance considerations differ from those previously analyzed.
- Radioactive material limits.
- Hazardous or potentially hazardous industrial materials where such change is significant in terms of quantities or use.
- The Change Authorization is processed in accordance with a written procedure and reviewed by the appropriate operational and safety functions.

CHAPTER 10.0
DECOMMISSIONING

10.1 DECOMMISSIONING FUNDING PLAN/COST ESTIMATE

A Decommissioning Funding Plan (DFP) and cost estimate has been prepared and submitted pursuant to 10 CFR 70.25 to demonstrate financial capability to support decommissioning and closure activities.

The DFP establishes decommissioning criteria, describes key assumptions, outlines major technical approaches, and provides both a detailed site specific cost estimate and a certification of financial assurance for the decommissioning of facilities and equipment containing licensed radioactive material within the scope of SNM-960. The DFP is current and future revisions will be in accordance with 10 CFR 70.25(e).

The GEH Vallecitos Nuclear Center has been in operations since 1957. The DFP was created in the 1970's and has been periodically revised in accordance with regulations and NRC guidance since that time. This Chapter and the DFP cost estimate provide information that is consistent with many aspects of NUREG/CR-1757 and is also consistent with the previously accepted requirements for providing this information. Also, the current process of determining decommissioning costs has been reviewed to ensure that the applicable evaluation criteria for unrestricted release listed in guidance from NUREG/CR-1757 have been incorporated. In addition, the DFP addresses the key elements of NUREG/CR-1757 including (1) Decommissioning Process (2) Characterization, Survey, and Free Release Criteria; and (3) Financial Assurance, Recordkeeping, and Timeliness. In 2003 as a publicly traded company, GE adopted the use of Financial Accounting Standard Board (FASB) guide 143 to account for decommissioning liability.

10.1.1 The cost estimate is reviewed and adjusted annually. The cost estimate is updated to reflect completed dismantlement activities, current contamination levels or events that could result in subsurface contamination requiring remediation, inflation, changes in waste volume and/or transportation and disposal costs, prices of goods and services, changes in decommissioning techniques, and any other relevant changes in facility conditions. Checklists are used to validate the cost estimate taking into consideration specific factors to determine if changes are warranted. Examples include waste volumes, remediation activities that may have occurred that impacted waste volumes or labor, labor rates, disposal rates, transportation costs, inflation rates, and shared

services (insurance, fees, and utilities). Every three years a more detailed review is performed that includes review and validation of assumptions. These reviews meet the applicable requirements of 10 CFR 70.25(e).

10.1.2 Cost estimates used in this DFP are based on documented and reasonable assumptions including actual costs that have been incurred performing liability reduction activities. Cost estimates are sufficient to allow an independent third party to assume responsibility for decommissioning the facility including labor, equipment, sampling, laboratory and miscellaneous expenses such as overhead and contractor profit.

10.1.3 The cost estimate does not take credit for: 1) any salvage value that might be realized from the sale of potential assets during or after decommissioning, or 2) reduced taxes that might result from payment of decommissioning costs or site control and maintenance costs.

10.1.4 The cost is based on a license termination without the need for continued surveillance. The cost is accreted on an annual basis to account for inflation.

10.1.5 The cost is based on the conditions expected to be present at the end of plant life. However, adjustments are made on an annual basis as described above.

10.1.6 All the major decommissioning tasks or activities outlined in NUREG -1757 are in the cost estimate and include the planning and preparation, decontamination and/or dismantling of radioactive facility components, final radiation survey, packing materials, shipping, waste disposal, equipment/supply, laboratory and miscellaneous costs. The key assumptions are discussed in Chapter 4 and of the DFP.

10.1.7 The plan is for unrestricted release of the facilities covered by the DFP. There are no known areas of confirmed soil or groundwater contamination associated with licensed activities covered by the DFP. Restoration of contaminated areas on facility grounds and site stabilization are assumed to not be required. Nonetheless, the DFP includes a conservative estimate for the removal and disposal of soil that provides shielding for the hillside material storage area and does not anticipate removal of large amounts of soil. Therefore, no cost for restoration, stabilization or long-term surveillance is included.

10.2 COST ESTIMATE ASSUMPTIONS

The original estimates were made for all GE radioactive material licensed facilities at the Vallecitos site which included 4 reactors, the SNM-960 facilities and the State of California byproduct material license CA-0017-1.

All irradiated spent fuel in storage will have been removed from the site prior to initiation of decommissioning and closure activities. The US Department of Energy has contractual responsibility to dispose of this fuel and the cost of such disposal is separately covered under Standard Contracts entered into under the Nuclear Waste Policy Act. If, at the time of desired decommissioning continued storage is required, GEH, as necessary, will make appropriate arrangements to remove the fuel to an authorized recipient.

The estimated total cost provided in the decommissioning funding plan for the SNM-960 facility includes a 25-percent contingency to allow for unforeseen problems that might arise during the activity. The facility will be decommissioned such that the facilities can be released for unrestricted use.

The manpower requirements, timeframes and estimating equations discussed in both NUREGs were used to develop the detailed cost estimate. These estimates were based on interviews with site personnel, scaling factors from building volumes and foot prints, and comparisons to previous other decommissioning projects.

Since 2003 GEH has engaged in liability reduction activities across its facilities. These efforts have further validated that the prepared estimates are conservative and reasonable. In these activities the projected actual costs have consistently been in line with the estimated cost. These include the removal of over 10,000 cubic feet of debris from the former vaporization area of the Wilmington facility, the removal of more than 1,000,000 cubic feet of soil like material from the Wilmington facility, the removal of over 13,000 cubic feet of material from the VBWR in Vallecitos, CA and the removal of over 26,000 cubic feet of material from the process canyons in Morris, IL. All of these projects were accomplished by contract labor and the costs were comparable to the expected cost for labor, packaging, shipment and burial of the materials. The planning and professional cost associated with the future decommissioning of the sites was unaffected and continued to accrete due to inflation over the period of material removal.

10.3 FINANCIAL SURETY

Appropriate financial assurance instruments are provided to demonstrate that sufficient funds will be available when needed for required decommissioning activities. The most recent financial instruments and supporting documentation are shown in Chapter 8 of the DFP. This information is updated and submitted to NRC as needed.