

U. S. NUCLEAR REGULATORY COMMISSION

REGION V

Report No. 50-70/82-02

Docket No. 50-70 License No. TR-1 Safeguards Group _____

Licensee: General Electric Company

P. O. Box 460

Pleasanton, California 94566

Facility Name: General Electric Test Reactor (GETR)

Inspection at: Vallecitos Nuclear Center

Inspection conducted: July 29, and September 7, 1982

Inspectors: GP Yuhos Ben 10/19/82
 E. M. Garcia, Radiation Specialist Date Signed

GP Yuhos 10/19/82
 G. P. Yuhos, Radiation Specialist Date Signed

Approved by: F. A. Wenslawski 10/20/82
 F. A. Wenslawski, Chief, Reactor Radiation Protection Section Date Signed

Approved by: H. E. Book 10/20/82
 H. E. Book, Chief, Radiological Safety Branch Date Signed

_____ Date Signed

Summary:

Inspection on July 29, and September 7, 1982; Telephone Conversations on July 30 and September 14, 1982 (Report No. 50-70/82-02)

Areas Inspected: Special unannounced inspection by regional based inspectors of the spent fuel shipping program, compliance with the conditions of the Certificate of Compliance No. 5942, and the requirements expressed in 10 CFR 71. Radiation and contamination surveys were also performed. The inspection involved 22 inspection hours by two NRC inspectors.

Results: No items of noncompliance or deviations were identified.

DETAILS

1. Persons Contacted

- R. Darmitzel, Manager Irradiation Processing Operation
- +*W. King, Manager, Nuclear Safety & Quality Assurance
- +E. Strain, Compliance Engineer
- +*J. Cherb, Senior Engineer - Quality Assurance
- R. Hallquist, Acting Manager GETR Operations
- W. Springsteen, Specialist, RP and S Project Engineering
- P. Swartz, Senior Engineer, Design Engineering Services
- *D. Smith, Senior Engineer, Nuclear Safety

+ Indicates those individuals attending the preliminary exit interview on July 29, 1982.

* Indicates those individuals attending the exit interview on September 7, 1982.

2. Initial Inspection Effort July 29, 1982

By letter dated July 21, 1982, General Electric Company informed NRC Region V of their intent to ship Spent Nuclear Fuel from the GETR facility. The fuel was to be shipped from Vallecitos Nuclear Center to an authorized recipient. This inspection was to examine the licensee's preparations for the spent fuel shipment.

The inspectors reviewed the status of the Spent Fuel Shipping Program. The applicable regulations are in Part 71 of Title 10 of the Code of Federal Regulations (10 CFR 71). Section 71.3 requires that the licensee have a general or specific license to ship licensed material. Section 71.12 provides a general license for shipment to individuals already having another license issued pursuant to Title 10. The general license is subject to certain conditions including: (1) The package has a Certificate of Compliance (C of C) or other approval provided by the NRC. (2) The licensee has a copy of the C of C. (3) The licensee complies with the terms and conditions of the C of C and Part 71. (4) The licensee is a registered user of the package. (5) The licensee has an NRC approved quality assurance program satisfying the provisions of Section 71.54.

The inspectors determined that (1) the Model GE-700 shipping cask has been issued Certificate of Compliance number 5942. On July 29, 1982, the effective certificate revision was Revision 4. (2) The licensee is a registered user of this shipping cask. (3) The licensee has established and implemented a quality assurance program. This program is identified as QAP-1, "Quality Assurance Program for Shipping Packages for Radioactive Material," Revision 1, March, 1980. This program has been reviewed and approved by the NRC. (4) The licensee had copies of Certificate of Compliance number 5942 Revision 4.

To determine compliance with the conditions of the C of C, the inspectors observed part of the preparation of the first shipment. The spent fuel was being loaded in shipping container number 701. The licensee has prepared a procedure entitled "Model 700 Shielded Shipping Container Procedure," with three checklists. The checklists are for the disassembly, loading, and final inspection and assembly of the shipping cask.

The inspectors observed the performance of Steps 32 to 36 of the loading checklist. These steps involve the removal of the cask from the pool, the securing of the lid, torquing the lid bolts, and testing for leaks. The licensee staff performed these steps as required by the procedure and checklist. The inspectors made the following observations:

- A. The lid bolts measure 3 inches and are the type required by the C of C.
- B. The vent valve, drain valve and relief valves had quality assurance acceptance stickers.
- C. The torque wrench used had GE identification number 29462 and was within calibration.
- D. The licensee staff torqued the lid bolts to 100 foot-pounds. This was consistent with Step 35 of the check list but inconsistent with Note 5 of drawing 289E646 of the C of C. This drawing requires 225 inch-pounds.
- E. The cask-lid seal was leak tested, as required by the procedure, at 15+0.5 psig for 15 minutes. This is inconsistent with note 4 for of the C of C drawing which requires a 10 psi 30 minutes leak test.
- F. A radiation survey performed by the inspector found the contact radiation levels to be less than 3 mr/hr above background. The inspector used a NRC Eberline RO-2 ion chamber serial number 837 calibrated on July 9, 1982 and due for calibration on October 9, 1982.
- G. Drawing 289E646 Revision 3 under Note 3 requires that the stainless steel shipping base be painted. The base is not painted.
- H. The C of C limits the maximum weight of the packaging to 23,000 pounds. The licensee's letter of July 21, 1982 providing advance notification of the spent fuel shipment lists the cask weight at 34,000 pounds.

The inconsistencies appeared to be the result of the licensee using revisions of the packaging drawings different from the one's specified in the C of C. The affected drawings are listed below:

<u>Revision 4 of C of C Dwg. No.</u>	<u>Licensee Using</u>
237E325, Rev. 2	Rev. 3
10604331, Rev. 0	Rev. 1
289E646, Rev. 3	Rev. 6
289E642, Rev. 2	Rev. 3
129D4059, Rev. 1	Rev. 2

The licensee also stated that they were seeking a new revision to the C of C. The proposed revision would include a new set of drawings.

3. Preliminary Exit Interview

The inspectors met with licensee representatives denoted in paragraph 1. The inspectors summarized the scope and findings of the inspection. The licensee was made aware that pursuant to 10 CFR 71.3, the conditions of the existing revision of the C of C must be complied with in order to have a license to ship. The licensee stated that they would determine the status of the proposed revision to the C of C before they would proceed with shipments. The inspectors suggested that a quality assurance audit be performed prior to the first shipment. The precautions to be taken to insure that the returning empty casks would not be contaminated above regulatory limits were also discussed.

On July 30, 1982, the licensee management informed NRC Region V management that based upon the inspectors' findings, the shipment of spent fuel was being postponed. A new shipping schedule would be established when the new revision of the C of C was issued.

4. Continued Inspection Effort September 7, 1982

Revision 5 of Certificate of Compliance No. 5942 was issued on August 25, 1982. The licensee's shipment of spent fuel has been made pursuant to this revision. Changes of this revision from the previous one include higher maximum gross weights for the package and a new set of certificate drawings.

The inconsistencies and comments identified by the inspector during the initial visit have been resolved. The new drawings do not address the conditions for leak testing the lid seal or the torque on the lid bolts. These conditions are specified in the licensee's procedure. Under the new C of C, the stainless steel shipping base is not required to be painted. The package weight

limits are consistent between documents. The returning empty casks have not been contaminated above regulatory limits and quality assurance has participated in the planning and preparations for shipment. The inspector compared the requirements of 10 CFR 71.54, "Routine Determinations," to the licensee's procedure. These requirements are addressed in the procedure in specific steps or throughout different sections. The inspector reviewed the licensee's records of the first four shipments made in this series and found that the routine determinations appear to have been performed. While reviewing the records for the determination of operability and setting of the pressure relief valve (PRV), the inspector noted a discrepancy. The records for cask 702 indicated a PRV installed which was not recorded as being tested and properly set. It appeared that the discrepancy was due to an error in recording the serial number since the six digit number differs only by one digit. The cask was in transit at the time. The licensee agreed to inspect the PRV serial number upon arrival at the site and inform the inspector of their findings. The Senior Engineer-Quality Assurance telephoned the inspector on September 14, 1982 to confirmed that indeed the error was one of recording. The PRV installed had in fact been properly tested and set. The error was on the number recorded in the list of components of cask 702.

During the second site visit the inspector observed the collection of the cask water sample and the establishment of 1000 cubic inch of air void on shipment number 5. The inspector also took a smear survey of the cask and base. Contamination levels were well below those specify in 49 CFR 173.397. The smears were counted on NRC's NMC PC-55 windowless gas proportional counter serial number 77-2712-05. The instruments efficiencies for PU-239 (40%) and Tc-99 (30%) were used in determining the activity.

No items of noncompliance or deviations were identified.

5. Exit Interview

The inspector met with the individuals noted in paragraph 1. The extent and findings of the inspection were presented. The licensee was informed that no items of noncompliance had been identified.