

U. S. NUCLEAR REGULATORY COMMISSION  
REGION V

Report No. 70-25/91-01

Docket No. 70-25

License No. SNM-21

Licensee: Rockwell International Corporation  
Rocketdyne Division  
6633 Canoga Avenue  
Canoga Park, California 91303

Facility Name: Santa Susana Field Laboratory (SSFL)

Inspection at: Chatsworth, California

Inspection Conducted: January 15-18, 1991

Inspector:

C. A. Hooker  
C. A. Hooker, Fuel facilities Inspector

1/31/91  
Date Signed

Approved by:

Robert J. Pate  
Robert J. Pate, Chief  
Nuclear Materials and  
Fuel Fabrication Branch

1/31/91  
Date Signed

Summary:

Areas Inspected: This was a routine unannounced inspection of licensee activities during decommissioning including licensee action on violations, followup on open items, operations review, radiation protection, training/retraining, radioactive waste management and environmental protection. Inspection procedures 30703, 92702, 92701, 88020, 83822, 88010, 88035 and 88045 were addressed.

Results: The licensee's performance appeared adequate and their programs appeared capable of accomplishing their safety objectives. No violations or deviations were identified.

DETAILS1. Persons Contacteda. Licensee

- \*D. C. Gibbs, General Manager, Energy Technology Engineering Center
- \*B. S. Pilling, Manager, General Programs Operations
- \*P. D. Rutherford, Manager, Radiation Protection & Health Physics Services
- \*R. J. Tuttle, Radiation Safety Officer
- P. H. Horton, Manager, Nuclear Operations
- J. A. Rowles, Alternate Radiation Safety Officer
- A. Klein, Engineer
- F. H. Badger, Health Physics Engineer

\*Denotes those attending the exit interview on January 18, 1991.

In addition to the individuals noted above, the inspector met and held discussions with other members of the licensee's staff.

2. Followup on Licensee Action on Violations (92702)

Item 70-25/90-01-01 (Closed). This violation involved the licensee's failure to conduct quarterly reviews of the radiation safety program. The inspector verified that effective corrective actions had been implemented to prevent recurrence as stated in the licensee's timely letter dated July 17, 1990. The inspector noted that the licensee had performed and completed the delinquent reviews by the date indicated in their letter, and all subsequent reviews were completed as required. Details regarding the review of these reports are discussed in Section 5.a. below. This matter is closed.

3. Followup of Licensee Action on Open Items (92701)

Item 70-25/90-01-02 (Closed). This item involved the licensee's need to establish procedures for the control and use of their laboratory radioactive counting equipment. Based on review of procedure, "Quality Control Procedures for Alpha/Beta Sample Counters," dated November 5, 1990, the inspector determined that the licensee had effectively initiated a program for the control and use of the subject equipment. The procedure adequately defined tests and controls for assuring the quality of sample measurement results, and described approved methods for achieving the lower limit of detection (LLD) for various types of samples. The inspector also noted that the licensee was effectively implementing the procedure. This matter is closed.

Item 70-25/90-01-03 (Closed). Inspection Report No. 70-25/90-01 described that as of January 1, 1990, the licensee had changed the count time of their stack samples from 100 minutes to 10 minutes without determining what effect the reduced count time had on their LLD. During

this inspection (70-25/91-01), the inspector noted that the licensee had determined that they may not always be capable of achieving a LLD goal of one percent of the most restrictive effluent limit specified in 10 CFR Part 20, Appendix B, Table II, Column 1, for unknown mixtures ( $2.0E-14$  microcuries per milliliter). Since the licensee had retained all of the samples previously counted for 10 minutes, each sample was recounted for 100 minutes. The inspector noted that all stack samples were now being counted for 100 minutes. The procedure described in the above item (70-25/90-01-02), also relates to this item. This matter is closed.

#### 4. Operations Review (88020)

This area was reviewed to determine that operations were being conducted in accordance with the requirements of the License and licensee procedures during decommissioning of the Rockwell International Hot Laboratory (RIHL). Although the licensee's RIHL decommissioning plan is still under NRC review, the removal of equipment for disposal and decontamination activities are being conducted as authorized under their current license.

As discussed in previous inspection reports, the only special nuclear material remaining in the RIHL is from residual low level contamination in discrete areas (cell drains, ventilation ducting upstream of the HEPA filtering systems and sludge in the liquid waste tank). Radioactivity in the RIHL primarily consists of old mixed fission products (Cs-137, Sr-90, Pm-147 and Co-60) as residual contamination from previous activities involved with decladding of irradiated reactor fuel and associated hardware.

The inspector noted that there were very few changes since the last inspection of this area (70-25/91-02). The inspector also noted that the licensee had recently hired two qualified contract Health Physics Technicians (HPTs) and a previously retired staff HPT to assist with decommissioning activities. All equipment had been removed from the hot cells, with decontamination of Cells 1 and 2 nearly completed. The licensee had completed grit blasting the walls of Cell 2 and its associated decontamination room. The paint on the walls in Cells 3 and 4 had not been removed. All of the hoods had been removed from Room 141 and packaged for radioactive waste disposal. There were no decontamination activities in progress within the RIHL during this inspection. The licensee was concentrating on surveying and releasing unused stock material in the RIHL storage yard area.

Decommissioning activities have been conducted by the facility's operating staff, who also assist with similar activities at other onsite facilities operated under the jurisdiction of the Department of Energy (DOE). Most of these individuals are also contracted out for inservice inspection activities at various nuclear power plants. The inspector discussed observations regarding the appearance of limited decommissioning progress at the RIHL with cognizant licensee representatives. The licensee representatives acknowledged the inspectors observations, and stated that they were in the process of hiring six additional workers to augment their current staff for decommissioning of the facility.

Although the requirements for maintaining a criticality monitoring system has been removed from the License, the licensee continues to calibrate and maintain the system operational to serve as an area radiation monitoring system.

The inspector noted that the exhaust ventilation system for the hot cell facility was being maintained fully operational. Room air and stack monitoring instruments were also being maintained fully operational. The facility fire protection system and emergency diesel generator were also being maintained in service. Housekeeping in the RIHL appeared good.

No apparent violations or deviations were identified.

5. Radiation Protection (83822)

The inspector examined the licensee's program for compliance with the requirements of 10 CFR Parts 19 and 20, License Conditions, licensee procedures and recommendations outlined in various industry standards.

a. Radiation Safety Audits and Reviews

Reports of licensee quarterly reviews of the RIHL radiation safety program from the third quarter of 1989 through the third quarter of 1990 were examined. The reviews included evaluations of (1) ambient radiation level measurements with film and/or thermoluminescent dosimeters (TLDs) within and around the facility from 22 fixed locations, (2) routine and non-routine facility contamination surveys, (3) workers exposure from ambient and breathing zone radioactive air sampling measurements, (4) incidents for reportability, (5) personnel external radiation exposures, (6) workers internal exposure from bioassay measurements, (7) radioactive effluent discharges, (8) Controlled Work Permits (CWPs), and (9) monthly facility airflow direction checks. The report also provided a brief description of the major activities that had been performed during the review period. The reports summarized identified deficiencies and recommendations for improvement. The inspector noted that the deficiencies were primarily administrative in nature and did not represent a safety problem. No concerns were identified by the inspector.

b. External Exposure Control

The inspector discussed personnel monitoring with cognizant licensee representatives and reviewed RIHL personnel exposure records from January 1 through September 30, 1990. Personnel monitoring was primarily based on quarterly exchanged film badges processed by a National Voluntary Laboratory Accreditation Program accredited contract vendor. Self reading pocket ion chambers (PICs) were used to supplement exposure estimates between film badge changes. Inspection Report No. 70-25/90-01 described a deficiency in the licensee's program involving the licensee's double reporting of personnel exposures. The licensee had been adding the radiation exposures individuals had accrued from offsite activities (inservice inspections at power reactors) to exposures received onsite, which

were included in the licensee's 10 CFR 20.407(a)(2) annual personnel exposure report. The inspector noted that the licensee was making the necessary changes in their system to correct the matter.

The inspector verified that forms NRC-5 and NRC-4 or equivalent were appropriately maintained in accordance with NRC requirements. The inspector noted that no individual had exceeded the limits specified in 10 CFR 20.101(a).

c. Internal Exposure Control

Based on a review of air sample data from July 1, 1990, through January 16, 1991, and respiratory protection use logs, it appeared that no workers were being exposed to intakes of radioactive material which would exceed the 40-MPC-hour control measure requiring an evaluation pursuant to 10 CFR 20.103(b)(2). Typically the air sample counting data indicated no appreciable worker exposure due to airborne activity.

During facility tours the inspector observed that air sampling stations appeared to be sufficient in number and reasonably representative of the work area being sampled. As appropriate, special breathing zone air sampling was established for workers performing in-cell and other decontamination activities. Engineering controls to contain loose radioactive material were evident.

The licensee's bioassay sampling program continues to consist of quarterly urine samples that are analyzed by a contract laboratory for mixed fission products, plutonium, enriched uranium and uranium element. The type of analysis performed appeared to be appropriately based on an individual's work assignment. A review of urine sample measurement data for 1990 samples indicated that all sample results were less than the minimum detection levels.

d. Respiratory Protection

There were no changes in the licensee's respiratory protection program since the last inspection of this area. The inspector reviewed records of personnel training and qualification, respirator issuance records, toured the licensee's cleaning and repair facility, and observed respirator fit testing. The inspector noted that respirator users had the proper medical clearances, had received and passed the required training, and had been fit tested prior to using respirators. Personnel performing maintenance and repairs on respiratory equipment were trained and certified by the manufacturer of the equipment being used. No work requiring the use of respiratory protection was in progress during this inspection. The inspector noted that the licensee's program was consistent with the requirements delineated in 10 CFR 20.103(c).

e. Control of Radioactive Materials and Contamination, Surveys, and Monitoring

During facility tours, the inspector observed that adequate operating personnel survey instruments were conveniently located at exits from contaminated areas. Although there was no work being performed in contaminated areas, the review of completed CWPs indicated that adequate instructions were being provided to workers which were acknowledged by the signature of the worker.

Based on review of facility survey records, the inspector noted that the licensee's radiation and contamination survey program appeared to be consistent with Part I, Section 3.0 of the License and the requirements specified in 10 CFR 20.201. Based on the review of the licensee's survey data, it appeared that the licensee has continued to maintain excellent control of loose radioactive materials during decommissioning activities.

During facility tours, the inspector noted that radioactive material areas and radiation and high radiation areas were posted and controlled in accordance with the requirements delineated in 10 CFR Part 20.

The licensee's performance in this area appeared adequate and their program appeared capable of accomplishing its safety objectives. No violations or deviations were identified.

6. Operator Training/Retraining (88010)

Due to the current status of the facility, the inspection of this area was primarily focused on radiological safety training and observations made during facility tours.

Personnel assigned to work with radioactive materials were provided formal classroom training on radiological safety prior to starting their job assignment. Formal training consisted of classroom lectures and videos. Upon completion of the formal classroom training, each individual was tested as to their knowledge of the material presented. The inspector noted that the licensee had made a change in their program to require refresher training annually as opposed their previous frequency of every two years. Refresher training also consisted of formal classroom training and examinations. The inspector noted that operators received training on hazardous chemicals, crane operations and general industrial safety applicable to decommissioning activities.

The licensee's performance in this area appeared adequate and their program appeared capable of accomplishing its safety objectives. No violations or deviations were identified.

7. Radioactive Waste Management (88035)

a. Radioactive Effluents

This area was reviewed to determine the licensee's compliance with 10 CFR Parts 20 and 70, License Conditions, licensee procedure and recommendations outlined in various industry standards.

The inspector noted that the only radioactive effluents released from licensed NRC activities continue to be gaseous effluents from the RIHL. The licensee continues to transfer radioactive liquids to the onsite DOE facility for evaporation.

b. Reports

The licensee's semiannual effluent report for the period of January 1 through June 30, 1990, dated July 31, 1990, was reviewed. This timely report was submitted in accordance with 10 CFR 70.59 and provided a summary of the radioactive gaseous effluents released from the facility. The report also provided the LLD values for the activity being measured. The effluent releases were noted to be less than one percent of the limits specified in 10 CFR Part 20, Appendix B, Table II, Column 1. No errors or anomalies were identified.

c. Solid Waste

Solid waste generated at the RIHL continues to be packaged, and transferred to the onsite DOE waste disposal facility and shipped under DOE orders. All radioactive waste is sent to a DOE disposal site. Waste generated at Building T-20 consisted mostly of miscellaneous trash from decontamination activities. The primary radionuclide content of the waste consisted of old mixed fission products, that included Cs-137, Sr/Y-90 and CO-60 as determined by onsite and vendor analysis of contaminants in the facility. Materials placed in waste containers were verified by a second individual. Each waste container was accompanied by a waste packaging verification form that included a description of the items placed in the container, the radioactive contents, waste form and management approval.

The licensee's performance appeared adequate and their program appeared capable of accomplishing its safety objectives. No violations or deviations were identified.

B. Environmental Protection (88045)

The inspector reviewed the licensee's program for compliance with 10 CFR Part 20, License Conditions and licensee procedures.

Changes in the licensee's environmental monitoring program were described in Inspection Report No. 70-25/90-01. The inspector noted that there were no changes since the previous inspection.

The licensee's 1989 environmental monitoring report, submitted by letter dated November 30, 1990, was reviewed at the Region V Office. The report provided a summary of all activities conducted at the Santa Susana Field Laboratory sites, and radiological and non-radiological environmental monitoring sampling results. The report also included the offsite doses and dose commitments to members of the public from radioactive effluents and direct radiation measurements. The data in the report indicated that effluents released from the plant were minimal and well below the 40 CFR 190 EPA Fuel Cycle Standard. No errors or anomalies were identified.

No violations or deviations were identified.

9. Exit Interview

The inspector met with the licensee representatives, denoted in Section 1, at the conclusion of the inspection on January 18, 1991. The scope and findings of the inspection were summarized.

The observations described in the report were discussed with the licensee. The licensee was informed that no violations or deviations were identified.