U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

Region V

Report No. 70-25/80-06 (IE-V-393)

Docket No. 70-25 License No. SNM-21 Safeguards Group 1

Licensee: Energy Systems Group
Rockwell International
8900 De Soto Avenue

Canoga Park, California 91304

Facility Name:

Inspection at: Canoga Park, California

Inspection Conducted: June 16-20, 1980

Date of Last Material Control and Accounting Inspection Visit: March 3-7, 1980

Inspectors: B. L. Brock — 7/30/80
B. L. Brock, Chemist — Date Signed

Y. Kobori — 7/31/80
Y. Kobori, Auditor — Date Signed

A. V. Wieder — 7/31/80
A. V. Wieder, Auditor — Date Signed

S. Rowinski — 8/1/80
S. Rowinski, Engineering Aide — Date Signed

Approved by: L. R. Norderhaug — 8/1/80
L. R. Norderhaug, Chief, Safeguards Branch — Date Signed

Inspection Summary:

Areas Inspected: Routine, unannounced safeguards inspection of facility organization, facility operations, measurements and statistical controls, shipping and receiving, storage and internal controls, ID and LEID, records and reports, and management review. The inspection involved 143 inspector hours onsite by 4 inspectors.

Results: No items of noncompliance or deviations were identified in the eight areas inspected.

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[redacted]

DETAILS

1. Key Persons Contacted

*R. G. Jones, Vice President and Controller
*M. Remley, Manager, Health, Safety and Radiation Services
*D. Mason, Program Manager, Fuels and Waste Management
*V. Schaubert, Manager Nuclear Materials Management
C. Nealy, Manager, Analytical Chemistry
R. Jaseph, Staff Engineer, QA Audits and Controls

The inspectors also talked with and interviewed several licensee employees including members of the material control unit, technical and engineering staff and general personnel.

*Denotes those attending the exit interview.

2. Licensee Action on Previous Inspection Findings

There were no open items of noncompliance.

3. Exit Interview

The inspection findings were discussed with licensee personnel identified in Paragraph 1.

No items of noncompliance were identified during the inspection. The following observations were made:

a. The licensee had identified in his internal audit that internal distribution of some FNMC plan changes was not completed. The inspection followup found that distribution had been made to the NRC. The licensee began to implement completion of the internal distribution and stated it would be completed within a week. Distribution was made June 26, 1980.

b. The inspectors observed that the controls on the analytical laboratory waste solution measurements could be improved. The licensee agreed to look at what they are doing, identify the options and take appropriate action. (80-06-01)

c. It was observed that the control charts for some balances had control limits that appeared excessively broad. Although there had been a reasonable basis for the limits, it was less valid for current operations. The licensee agreed to bring the control chart limits into line with current performance of the balances. The minor contribution of the weighing operations on these balances to measurement uncertainties made this an inconsequential item. (80-06-02)

[redacted]

d. The licensee's titration of solutions prepared from dissolution of UAl_x samples was observed to contain small quantities of suspended solids. This practice was questioned. The licensee immediately separated and measured the uranium content of the suspended solids and found the uranium assay was affected by 0.0047% absolute, an inconsequential amount. (80-06-03).

4. Unresolved Items

No unresolved items remain outstanding for this facility.

5. MC 92713B Independent Inspection Effort

a. A tour was taken of the hot cell facility, MBA 54. The cells have been cleaned out and made ready for the expected receipt of about 300 EBR-I, Mark IV, Plutonium-Aluminum fuel pins.

The fuel pins will come from EG&G Idaho, undergo the decladding step at ESG and then be shipped to Savannah River for further reprocessing.

6. MC 85202B Facility Organization

No items of noncompliance were noted.

Energy Systems Group nuclear material control and accounting organization remains the same. One change did take place with the appointment of a new alternate custodian for MBA 8, ATR QA laboratory. The appointment was appropriately documented by a written delegation of authority.

7. MC 85204B Facility Operations

No items of noncompliance were identified.

The licensee's operations remained unchanged from the prior inspection. An additional processing line is being assembled for the production of UAl_x from low enrichment uranium (LEU). The line appears similar to the current line producing UAl_x from high enrichment uranium. Observations were made of weighing furnace charges, furnace loading, melting, crushing, sieving, blending and pressing operations with no discrepancies between procedures and practices. Additional observations in the plate rolling, x-ray fluoroscopy, plate triming, ultrasonic examination, and fuel element assembly revealed no discrepancies between procedures and practices. Tamper-safing practices followed the procedure during current observations.

8. MC 85206B Measurement Control Program

No items of noncompliance were identified.

a. The sieve analysis of the UAl_x powder undertaken because of evidence of a sampling effect resulted in the analysis of seven particle size fractions in duplicate. Although the data is minimal, it is consistent with an indication of a trend wherein

for increasing particle size the uranium assay initially increased then decreased. The increase was 0.83%, absolute, at 71% uranium followed by an 0.58%, absolute, decrease. The weighted average uranium assay from the seven particle size fractions was 71.07% uranium (all seven sieved fractions were within the acceptable product particle size range - undersized and oversized particles were excluded from the evaluation). The possible correlation of uranium assay and particle size has spurred an interest in increased blending before sampling and dissolution of larger samples, all directed towards acquisition of a representative sample for analysis. A recent interlaboratory comparison confirmed the lack of a bias between the New Brunswick Laboratory and the licensee. The licensee's performance in the SALE (Safeguards Analytical Laboratory Evaluation) program also supports the high quality performance of his chemical analysts.

b. During the observation of sample preparation, it was noted that a few very small black specks remained undissolved. It was also noted that the diluted solution weight aliquotted for titration contained suspended (therefore small) white particles. Discussions with the technical staff indicated that previous work had shown the separated solids contained little if any uranium. They also pointed out the lack of a bias between them and NBL. They did, however, expeditiously separate the solids, determine their uranium content and reported that the uranium assay of 71.02% would be changed to 71.0247% by the adjustment resulting from the analysis of the solids. For the current material being assayed with the existing procedure it appears that the uranium content of the solid phase is not significant. It is noted, however, that the solid phase represents an additional uncontrolled parameter operative during the product assay stage. The conditions under which the solids would interfere should be determined and controlled. Alternatively, the solids could be either separately treated and added to the original solution before analysis or measured separately and the analytical result for the solution corrected by the uranium content of the solids. In either case a significant change in the uranium content of the solids which otherwise may result in a significant undetected analytical error would be detected and corrected. The licensee's interest in identifying the source of the 'bias' continues. Measurements to date have not identified the source as a single entity but instead has resulted in additional consideration being given to the possibility that the 'bias' is the net affect from several small (and possibly more difficult to identify) sources.

c. The licensee appropriately follows and responds to measurement system performance. A question arose regarding the control limits on one type of balance where the limits appeared not to reflect the current level of performance. It was determined that the data used for the calculation of the control limits extended over several material balance periods and included data generated prior to significant improvement in the balances' performance. Although combining the earlier data with the more recent data was

statistically justified, it was the inspectors view and the licensee agreed that since improved balance care and practices resulted in improved performance the earlier data should be excluded from the calculation of the control chart limits. It is recognized, however, that the contribution to the limit of error on measurements from the use of these balances is not significant.

d. Scale data was collected on the balance equipment used from the initial to final steps in the fabrication of the fuel plates. Data was not collected on the balance equipment located in the quality assurance lab because of the temporary inaccessibility. Identification no., location, type of scale, model no., insp. sticker visible, calibrated by calibration date and due, capacity, sensitivity and increments were noted. Balance calibrations had been performed at acceptable intervals. Inspection stickers were visible on all balance equipment. Standards were available, and were handled with lifters, or gloved hand and kept under cover when not used. Control charts were kept up to date and visible for balance precision; only approved scales were used for accountability.

9. MC 85208 - Shipping and Receiving

No items of noncompliance were identified.

Nuclear Material Transaction Reports, Form NRC-741, for receipts and shipments of special nuclear material during the period March 1 through May 31, 1980 were reviewed. This examination was made against criteria for preparing/completing the form, timeliness in issuance and completion, correctness of the coding information/quantitative data and evidence of significant shipper-receiver differences.

There were no significant shipper-receiver differences during this period. The licensee also appropriately evaluates cumulative shipper-receiver differences.

However, the review revealed that most NRC-741's issued by the Energy Systems Group (ESG) during this period did not show the shipper's license number and where applicable, the receiver's license number. ESG has agreed to provide the required data on future transaction reports. The review also identified two instances of duplication of "transfer series" numbers on shipments to the University of Missouri (The same transfer series numbers had been used in calendar year 1971 on shipments to the same receiver). ESG has agreed to take corrective action as may be necessary to satisfy informational requirements of the Nuclear Materials Management and Safeguards System.

10. MC 85210B - Storage and Internal Controls

No items of noncompliance were identified.

A random sample was taken of the special nuclear material transfer vouchers used during the period from March 1st through May 30th, 1980.

Each of the sampled vouchers were audited for authorized signatures, accuracy of the mathmatical extensions and voucher totals and their traceability to specific entries in the nuclear material accountability ledgers.

The controls and accounting for the existing tamper seal inventory were audited. Data on seal issues were checked for series continuity, and the issue and usage forms examined for authorized signatures.

Reports of unused seals were confirmed to central perpetual inventory records and to the actual series in the possession of the tamper seal control officer.

11. MC 85214B ID and Associated Limit of Error

No items of noncompliance were identified.

The licensee's calculated ID and LEID are consistent with regulatory requirements and he has established and is maintaining a system of control and accounting such that the limit of error associated with the inventory difference for any material balance period meets the LE criteria pursuant to 10 CFR 70.51.

The review included examination of ESG prepared SNM Inventory Reports issued upon reconciliation of physical inventories held on March 7 and May 1, 1980. Unopened receipts, additions to process, removals from process and ultimate product ledger accounts were examined during this review. SNM Inventory Reports data were traced to these accounts as well as to ESG plant control and subsidiary ledgers.

12. MC 85216B - Records and Reports

No items of noncompliance were identified.

The plant control and EDP subsidiary ledgers for the period March 1 through May 31, 1980 were examined and adjustments of book inventories to physical inventories on March 7 and May 1, 1980 were confirmed. Forms NRC-742, Material Status Report, issued for March 31, 1980, were also verified to the control ledgers for reporting identification symbols LAL and ZAZ.

Documentation for unusual adjustments to the ledgers were also examined. All entries examined were found to be properly supported by documentation.

All SNM shipments were restricted to authorized recipients as specified in 10 CFR 70.42. Two written certifications from transferee's were found to be over eighteen months old. ESG was requested to assure itself of having more current certifications on file for future shipments.

It was noted that as of April 1, 1980, almost all ESG material control and accounting activity (in NRC licensed areas) under Department of Energy (DOE) programs were transferred from reporting identification symbol LAL to symbol ZAZ. This change was made as a result of arrangements between DOE's Idaho Operations Office and San Francisco Operations Office. The NRC inspection and enforcement effort is unaffected by this change.

13. MC 85218B Management Review

No items of noncompliance were identified.

Annual reviews of the nuclear material control and accounting program have been conducted by appropriate individuals and documented in accordance with requirements. Findings needing corrective action were identified and placed on an 'Open Audit List' (OAL) that is circulated twice monthly to the responsible persons and their superiors as a status report on the identified items. The OAL list also serves as a reminder in that it highlights the item, the corrective action, the responsible person and the date the corrective acton is to be completed.

The latest review revealed that changes to some sections of the FNMC, which had been reported to the NRC under 10 CFR 70.32(c) had not received internal distribution. The identified sections were distributed June 26, 1980.

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FORM NRC 766
FEBRUARY 1978
(MC 0535)

UNITED STATES NUCLEAR REGULATORY COMMISSION

INSPECTION & ENFORCEMENT – STATISTICAL DATA

FACILITY NAME Energy Systems Group INSPECTOR(S) B. Brock, R. Robori, A. Winter, J. Steckinsk; PRINCIPAL INSPECTOR Brock

LICENSEE/VENDOR ______ REVIEWER ______

AE TRANSACTION TYPE 1 (CHECK ONE): ☐ Delete ☒ Insert ☐ Modify

DOCKET NUMBER (A) 2–9: 07000025

OR LICENSE NO. (BY PRODUCT) 2–14: ______

REPORT NO. (B) 15–18: 8006

DATES INQ/INVEST/INSP FROM (C) 19–24: 061680 (M M D D Y Y) TO (D) 25–30: 062080 (M M D D Y Y)

REGION CONDUCTING ACTIVITY (E) 31: 5

F INSPECTION PERFORMED BY: 32
1 ☒ REGIONAL OFFICE STAFF 2 ☐ RESIDENT INSPECTOR
3 ☐ PERFORMANCE APPRAISAL TEAM

G TYPE OF ACTIVITY CONDUCTED (CHECK ONE BOX ONLY) 33-34

INSPECTION:
02 ☐ SAFETY
03 ☐ INCIDENT
04 ☐ ENFORCEMENT
05 ☐ MANAGEMENT AUDIT
06 ☐ MANAGEMENT VISIT
07 ☐ SPECIAL
08 ☐ VENDOR
09 ☒ MATL ACCT.
10 ☐ PLANT SEC.
11 ☐ INVENT. VERIF.
12 ☐ SHIPMENT/EXPORT
13 ☐ IMPORT

OTHER:
14 ☐ INQUIRY
15 ☐ INVESTIGATION
(IF INVEST. ALSO CHECK BLOCK S)

H INSPECTION OR INVESTIGATION WARNING: 35
1 ☒ ANNOUNCED 2 ☐ UNANNOUNCED

I INSPECTION SHIFT: 36
1 ☒ DAY SHIFT 2 ☐ OFF-SHIFT 3 ☐ WEEKEND/HOLIDAY

J INSPECTION/INVESTIGATION NOTIFICATION (CHECK ONE BOX ONLY) 37
1 ☐ 591 2 ☒ REGIONAL OFFICE LETTER 3 ☐ REFERRED TO HQS FOR ACTION 4 ☐ REGION LETTER & HQS FOR ACTION

K INSPECTION/INVESTIGATION FINDINGS (CHECK ONE BOX ONLY) 38
1 ☒ CLEAR 2 ☐ NONCOMPLIANCE 3 ☐ DEVIATION 4 ☐ NONCOMPLIANCE & DEVIATION

L ENFORCEMENT CONFERENCE HELD: 1 ☐ 39

M NUMBER OF NONCOMPLIANCE ITEMS IN LETTER TO LICENSEE: 40–41: 00

N NUMBER OF DEVIATION ITEMS IN LETTER TO LICENSEE: 42–43: 00

NOTE: CHANGE MUST BE SUBMITTED ON 766 WHENEVER PREVIOUSLY CITED ITEM OF NONCOMPLIANCE IS OFFICIALLY DELETED FROM THE RECORD.

O NUMBER OF LICENSEE EVENTS 44–45: 00

P 46 INSPECTION FEE
1 ☐ NON-ROUTINE/VENDOR (No Fee) 2 ☐ ROUTINE (No Fee) 3 ☐ ROUTINE (Fee) 4 ☐ ROUTINE (Fee Reduced)

Q 47 CONTENTS 2.790D INFORMATION ☐ 'S' YES

R REGIONAL OFFICE LETTER OR REPORT TRANSMITTAL DATE FOR INSPECTION OR INVESTIGATION

591 OR LETTER ISSUED TO LICENSEE 48–53: ______ (M M D D Y Y)
REPORT SENT TO HQS FOR ACTION 54–59: ______ (M M D D Y Y)
IMMEDIATE ACTION LETTER DATE 60–65: ______ (M M D D Y Y)

S SUBJECT OF INVESTIGATION (CHECK ONE BOX ONLY) 66-67

TYPE A — 10 CFR 20.403:
01 ☐ INTERNAL OVEREXPOSURE
02 ☐ EXTERNAL OVEREXPOSURE
03 ☐ RELEASE TO UNREST. AREA
04 ☐ LOSS OF FACILITY
05 ☐ PROPERTY DAMAGE

TYPE B:
06 ☐
07 ☐
08 ☐
09 ☐
10 ☐

10 CFR 20.405:
11 ☐ INT. OVEREXPOSURE
12 ☐ EXT. OVEREXPOSURE
13 ☐ EXCESS RAD. LEVELS
14 ☐ EXCESS CONC. LEVELS

MISC.:
15 ☐ CRITICALITY
16 ☐ LOSS/THEFT
17 ☐ MUF
18 ☐ TRANSPORTATION
19 ☐ CONTAM/LEAKING SOURCE
20 ☐ ENVIRONMENTAL EVENT
21 ☐ EQUIP. FAILURE
22 ☐ ALLEGATION/COMPLAINT
23 ☐ PUBLIC INTEREST
24 ☐ SABOTAGE
25 ☐ ABNORMAL OCCUR.
26 ☐ OTHER

HEADQUARTERS ENTRIES

T HQS ACTION ON INSP/INVEST REFERRED BY REGION (See Reference List for Code) 68–69: ______

U DATE HQS ENFORCEMENT LETTER, NOTICE, ORDER ISSUED 70–75: ______ (M M D D Y Y)

V CIVIL PENALTY ISSUED: 1 ☐ 76

W DATE 766 ENTERED INTO COMPUTER FILE (MO/YR) 77–80: ______ (M M Y Y)

NOTE: BLOCKS K TO N MUST BE VERIFIED BY IE: HQS WHENEVER ENTRIES ARE MADE IN BLOCKS T, U AND V

AITS REFERENCE ______

Sl d 5

Safeguards

IE V 4/2

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION V
1990 N. CALIFORNIA BOULEVARD
SUITE 202, WALNUT CREEK PLAZA
WALNUT CREEK, CALIFORNIA 94596

[redacted]

January 7, 1981

Docket No. 70-25

Environmental Systems Group
Rockwell International
8900 De Soto Avenue
Canoga Park, California 91304

Attention: Mr. R. G. Jones
Vice President and Controller

Gentlemen:

This letter refers to the routine safeguards inspection of your activities authorized under NRC License No. SNM-21 conducted by Messers. B. Brock, Y. Kobori and A. Wieder of this office and J. Blaylock of NRC-HQ on October 23, 24 and November 3-7, 1980. It also refers to the discussion of our inspection findings held by the inspectors with Dr. M. E. Remley and other members of management and staff on November 7, 1980.

The inspection included examination of activities related to your program for the control and accounting of special nuclear material in accordance with applicable requirements of Title 10, Code of Federal Regulations, Part 70, "Domestic Licensing of Special Nuclear Material," and pertinent license conditions as described in the enclosed inspection report. Within these areas, the inspection consisted of selective examination of procedures and records, interviews with facility personnel and observations by the inspectors.

Within the scope of this inspection, no items of noncompliance were observed.

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[redacted]

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In accordance with Section 2.790(d) of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, documentation of findings regarding your safeguards and security procedures are exempt from disclosure; therefore, the inspection report will not be placed in the Public Document Room and will receive limited distribution.

Sincerely,

LeRoy R. Norderhaug, Chief
Safeguards Branch

Enclosure:
IE Inspection Report
No. 70-25/80-10 (IE-V-412)