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

Region V

Report No. 70-25/80-10 (IF-V-412)
Docket No. 70-25 License No. SNM-21 Safeguards Group 1
Licensee: Energy Systems Group (ESG)
Rockwell International
8900 De Soto Avenue
Canoga Park, California 91304

Facility Name: _____

Inspection at: Canoga Park, California

Inspection Conducted: October 23, 24 and November 3-7, 1980

Date of Last Material Control and Accounting Inspection Visit: June 16-20, 1980

Type of Inspection: Announced, Material Control and Accounting

Inspectors: <u>B. L. Brock</u>	<u>1/6/81</u>
B. L. Brock, Chemist	Date Signed
<u>Y. Kobori</u>	<u>1/6/81</u>
Y. Kobori, Auditor	Date Signed
<u>A. Wieder</u>	<u>1/6/81</u>
A. Wieder, Auditor	Date Signed
<u>J. Blaylock</u>	<u>1/11/81</u>
J. Blaylock, Chemist	Date Signed
Approved by: <u>L. R. Norderhaug</u>	<u>1/16/81</u>
L. R. Norderhaug, Chief, Safeguards Branch	Date Signed

Areas Inspected: Routine announced safeguards inspection of Physical Inventory, Inventory Verification and Records and Reports. The inspection involved 135 hours onsite by 4 inspectors.

Results: No items of noncompliance were identified in the three areas inspected.

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DETAILS

1. Key Persons Contacted

- *M. Remley, Manager, Health Safety and Radiation Services
- *V. Schaubert, Manager, Nuclear Materials Management
- *D. Allen, Nuclear Materials Management Representative
- S. Wode, Management Systems Specialist

Inspectors also talked with and interviewed numerous other licensee employees engaged in production, measurements, and other aspects of material control and accounting.

*Denotes those attending the exit interview.

2. Action on Previous Inspection Findings

There were no outstanding items of noncompliance.

3. Exit Interview

The inspectors met with the licensee representatives (identified in paragraph A) at the conclusion of the inspection on November 7, 1980. The scope of the inspection and the findings were summarized. There were no items of noncompliance identified during this inspection. The following subjects needing attention (although not noncompliance) were pointed out to the licensee:

- . An x-ray density standard needed improved identification. The licensee agreed to review and improve this item (80-10-01).
- . Waste drums from the metallurgical laboratory needed improved packaging or improved liquid solidification to prevent corrosion of the metal drums. The licensee agreed to review and improve the preparation and/or packaging of these items (80-10-02).
- . The identifications of two similar PuBe sources may have been interchanged. The licensee is reviewing the matter and will correct the records as appropriate (80-10-03).
- . The logistic problems of holding for verification selected process material samples need further review and discussion prior to the next inventory verification inspection. Selection of alternate sample items and improved communications between the inspectors, the licensee's Nuclear Material Management personnel, and the licensee's production supervision should alleviate much of the problem.

4. MC-585212B Physical Inventory

No items of noncompliance were identified.

The licensee's program for accounting for SNM and conducting physical inventories was evaluated to assure that the licensee's program is in accordance with his approved FNMC plan and the regulations, and is capable of detecting losses or diversions of special nuclear material (SNM).

In the course of this evaluation, the inspector determined that:

- a. The licensee has established and followed written inventory procedures in accordance with approved physical inventory plans; the procedures specify the usual inventory frequency and describe conditions which would require a special physical inventory.
- b. The licensee has conducted physical inventories at the required frequencies specified in Commission regulations.
- c. The licensee measures the element and isotopic content of all SNM on inventory which had not been measured previously by the licensee and whose content of element and fissile isotope had not been assured by tamper-safing during the material balance period.
- d. Licensee procedures are established and followed to assure that each item is listed at inventory time with no duplications and that perpetual inventory records are up-dated.
- e. The licensee verifies the integrity of the tamper-safing device in place during the inventory and checks the seal identification to the container number.

5. MC-585213B Inventory Verification

No items of noncompliance were identified.

Inventory verification included Nondestructive Assay (NDA) using NRC equipment (a SAM-II) as well as the licensee's NDA systems (a gamma counting plate scanner and a gamma counting barrel scanner). Samples of uranium aluminum alloy (UAL_x) and uranium metal (U) were sent for chemical and isotopic analysis at the New Brunswick Laboratory (NBL) after NDA measurements. The licensee's balances were also used for weight verifications. The calibration of all measurement systems utilized was checked by use of the licensee's standards, subject to further independent verification by virtue of NBL analysis of samples.

Following the physical inventory the number of items to be verified in each category was determined from the equation $S=N(1-\beta^{1/Z})$ with a goal quantity of 4 Kg. S is the number of samples, N is the category population, β is the beta error (which is set at 0.05) and Z is the goal quantity divided by the KG U-235 per item. After calculating the number of items to be verified, the specific items for verification were selected through use of a random number generator. Ineventualities related to item availability were resolved through use of spare randomly selected substitute items. Locating each randomly selected item

verified its presence, weighing attested to the quantity of material and NDA attested to the type of feed material and the quantity of U-235 in fuel plates. Chemical and isotopic analysis of samples submitted to NBL will corroborate the appropriate calibration of the NDA measurement equipment.

a. Uranium Metal

The 16 cans of uranium metal feed (\sim 6 KG U-235/container) in the form of broken buttons were all verified by net weighing. A sample selected from each container was measured by NDA (surface activity) and verified to be consistent (container-to-container) within 10% of the mean specific activity. Count rate variations were attributed to differences in surface contours which caused variations in sample and detector distances. The average weight difference of 0.2 grams was not statistically significant.

Four duplicate samples were taken for independent analysis by NBL.

No defects were identified.

b. UAl_x Powder

The 12 cans of UAl_x powder (\sim 5.6 KG U-235/container) were all verified by gross weighing and NDA measurement. Selected samples were taken in duplicate for chemical and isotopic analysis at NBL. The specific activity of each UAl_x powder container (bottom surface) was within 5% of the mean of all the containers measured. The weight verification (gross weights) was to within 2.5 grams on the average and though statistically significant was not consequential.

No defects were identified.

c. UAl_x (Aluminum Clad) Plates

The 101 UAl_x "product" plates randomly selected from the 2,738 item population (\sim 0.05 KG U-235/plate on the average) were located, serial number verified, and measured by NDA. Plates were measured relative to designated standards using the licensee's plate gamma scanner. Detector/source geometry variations resulting from some plates having been processed through the curve forming step were within verification limits when adjusted (\sim 6.5%) for geometry. Eleven "scrap" plates, from a group of 282 destined for recovery, were selected for independent measurement and found to be consistent with the product plates.

No defects were identified.

d. Waste Drums

Three waste drums were selected from the population of 360 drums (~ 0.01 KG U-235/drum) to cover the range of U-235 normally encountered in drums. The licensee's NDA drum gamma scanner was used for these measurements. Standards were run to check the measurement system performance during the verification measurements. The measurement differences were not statistically significant.

No defects were identified.

e. Conclusion

The inventory verification effort supports the assertion with 95% confidence that the inventory at the Environmental Systems Group of Rockwell International is free of gross defects totaling more than 5 formula kilograms of SNM based on the samples identified and measured in accordance with attribute sampling procedures. This statement is subject to the receipt of acceptable chemical and isotopic analysis of the samples submitted to the New Brunswick Laboratory.

6. MC 85216B - Records and Reports

No items of noncompliance were identified.

Inspection activity was limited to a review of licensee prepared SNM Inventory Reports and supporting records for physical inventory periods commencing May 2, 1980 and ending on September 2, 1980. Material balance data reviewed and traced to summary records included ending inventories of unopened receipts, ultimate product, materials in process and additions to and removals from process during the material balance intervals. Licensee maintains a separate manual subsidiary ledger to record this data. Random entries in the summary records were traced to source documents.

FORM NRC 766
FEBRUARY 1978
(MC 0535)

UNITED STATES NUCLEAR REGULATORY COMMISSION
INSPECTION & ENFORCEMENT - STATISTICAL DATA

FACILITY NAME <u>ENVIRONMENTAL SYSTEMS GROUP</u> INSPECTOR(S) <u>B. BROCK</u> PRINCIPAL INSPECTOR <u>BROCK</u>	
LICENSEE/VENDOR _____ REVIEWER _____	
TRANS-ACTION TYPE 1 (CHECK ONE) <input type="checkbox"/> Delete <input type="checkbox"/> Insert <input type="checkbox"/> Modify	DOCKET NUMBER (A) _____ OR LICENSE NO. (BY PRODUCT) _____ REPORT NO. (B) _____ DATES INQ/INVEST/INSP FROM (C) _____ TO (D) _____ M M D D Y Y M M D D Y Y REGION CONDUCTING ACTIVITY (E) <u>5</u>
INSPECTION PERFORMED BY: <u>32</u> <input checked="" type="checkbox"/> REGIONAL OFFICE STAFF <input type="checkbox"/> RESIDENT INSPECTOR	
F <input type="checkbox"/> PERFORMANCE APPRAISAL TEAM	
TYPE OF ACTIVITY CONDUCTED (CHECK ONE BOX ONLY)	
G 33 34 INSPECTION OTHER 02 <input type="checkbox"/> SAFETY 05 <input type="checkbox"/> MANAGEMENT AUDIT 08 <input type="checkbox"/> MATL ACCT. 13 <input type="checkbox"/> IMPORT 14 <input type="checkbox"/> INQUIRY 03 <input type="checkbox"/> INCIDENT 06 <input type="checkbox"/> MANAGEMENT VISIT 10 <input type="checkbox"/> BLANT SEC. 15 <input type="checkbox"/> INVESTIGATION 04 <input type="checkbox"/> ENFORCEMENT 07 <input type="checkbox"/> SPECIAL 11 <input type="checkbox"/> INVENT. VERIF (IF INVEST. ALSO CHECK BLOCK 5) 08 <input type="checkbox"/> VENDOR 12 <input type="checkbox"/> SHIPMENT/EXPORT	
H 35 INSPECTION OR INVESTIGATION WARNING: <input checked="" type="checkbox"/> ANNOUNCED <input type="checkbox"/> UNANNOUNCED	
I 36 INSPECTION SHIFT: <input type="checkbox"/> DAY SHIFT <input type="checkbox"/> OFF-SHIFT <input type="checkbox"/> WEEKEND/HOLIDAY	
J 37 INSPECTION/INVESTIGATION NOTIFICATION (CHECK ONE BOX ONLY): <input type="checkbox"/> 591 <input type="checkbox"/> REGIONAL OFFICE LETTER <input type="checkbox"/> REFERRED TO HQS FOR ACTION <input type="checkbox"/> REGION LETTER & HQS FOR ACTION	
K 38 INSPECTION/INVESTIGATION FINDINGS (CHECK ONE BOX ONLY): <input checked="" type="checkbox"/> CLEAR <input type="checkbox"/> NONCOMPLIANCE <input type="checkbox"/> DEVIATION <input type="checkbox"/> NONCOMPLIANCE & DEVIATION	
L 39 ENFORCEMENT CONFERENCE HELD: <input type="checkbox"/> 39	
M 40 41 NUMBER OF NONCOMPLIANCE ITEMS IN LETTER TO LICENSEE: <u>2</u> <u>0</u>	NOTE: CHANGE MUST BE SUBMITTED ON 766 WHENEVER PREVIOUSLY CITED ITEM OF NONCOMPLIANCE IS OFFICIALLY DELETED FROM THE RECORD.
N 42 43 NUMBER OF DEVIATION ITEMS IN LETTER TO LICENSEE: <u>1</u> <u>0</u>	
O 44 45 NUMBER OF LICENSEE EVENTS: <u>1</u> <u>0</u>	
P 46 INSPECTION FEE: <input type="checkbox"/> NON-ROUTINE/VENDOR (No Fee) <input type="checkbox"/> ROUTINE (No Fee) <input type="checkbox"/> ROUTINE (Fee) <input type="checkbox"/> ROUTINE (Fee Reduced)	
Q 47 CONTENTS 2.7900 INFORMATION <input type="checkbox"/> 'S' YES	
R REGIONAL OFFICE LETTER OR REPORT TRANSMITTAL DATE FOR INSPECTION OR INVESTIGATION	
591 OR LETTER ISSUED TO LICENSEE: <u>010781</u> REPORT SENT TO HQS FOR ACTION: _____ IMMEDIATE ACTION LETTER DATE: _____ M M D D Y Y M M D D Y Y M M D D Y Y	
S SUBJECT OF INVESTIGATION (CHECK ONE BOX ONLY) 66-67	
TYPE A 10 CFR 20.403 TYPE B 10 CFR 20.405 MISC. 01 <input type="checkbox"/> INTERNAL OVEREXPOSURE 06 <input type="checkbox"/> 11 <input type="checkbox"/> INT. OVEREXPOSURE 15 <input type="checkbox"/> CRITICALITY 21 <input type="checkbox"/> EQUIP. FAILURE 02 <input type="checkbox"/> EXTERNAL OVEREXPOSURE 07 <input type="checkbox"/> 12 <input type="checkbox"/> EXT. OVEREXPOSURE 16 <input type="checkbox"/> LOSS/THEFT 22 <input type="checkbox"/> ALLEGATION/COMPLAINT 03 <input type="checkbox"/> RELEASE TO UNREST. AREA 08 <input type="checkbox"/> 13 <input type="checkbox"/> EXCESS RAD. LEVELS 17 <input type="checkbox"/> MUF 23 <input type="checkbox"/> PUBLIC INTEREST 04 <input type="checkbox"/> LOSS OF FACILITY 09 <input type="checkbox"/> 14 <input type="checkbox"/> EXCESS CONC. LEVELS 18 <input type="checkbox"/> TRANSPORTATION 24 <input type="checkbox"/> SABOTAGE 05 <input type="checkbox"/> PROPERTY DAMAGE 10 <input type="checkbox"/> 19 <input type="checkbox"/> CONTAM/LEAKING SOURCE 25 <input type="checkbox"/> ABNORMAL OCCUR. 20 <input type="checkbox"/> ENVIRONMENTAL EVENT 26 <input type="checkbox"/> OTHER	
T HEADQUARTERS ENTRIES	
HQS ACTION ON INSP/INVEST REFERRED BY REGION: _____ (See Reference List for Code)	
U DATE HQS ENFORCEMENT LETTER, NOTICE, ORDER ISSUED: _____	
V CIVIL PENALTY ISSUED: <input type="checkbox"/>	
W DATE 766 ENTERED INTO COMPUTER FILE (MO/YR): _____	

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

AITs REFERENCE



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

Safeguards

1E-V-423

APR 3 1981

Docket No. 70-25

Energy 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 Messrs. B. Brock, and G. Nelson of this office on March 16-20, 1981. It also refers to the discussion of our inspection findings held by the inspectors with Dr. M. E. Remley and members of your staff on March 20, 1981.

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 examinations 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.

In accordance with Section 2.790(d) of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, documentation of the findings of your control and accounting procedures for safeguarding special nuclear materials are exempt from public disclosure; therefore, the enclosed inspection report will not be placed in the Public Document Room.

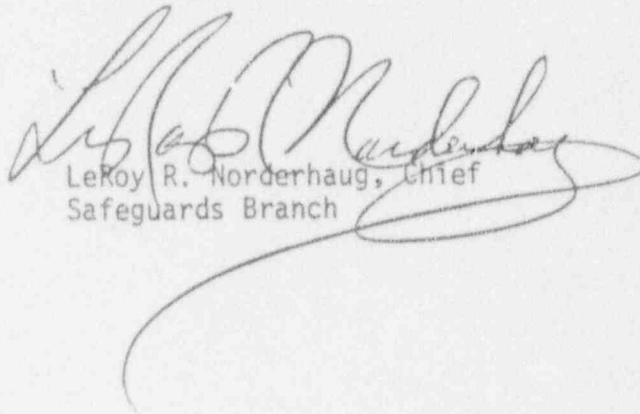
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APR 3 1981

Should you have any questions concerning this letter, we will be glad to discuss them with you.

Sincerely,



LeRoy R. Norderhaug, Chief
Safeguards Branch

Enclosure:
IE Inspection Report
No. 70-25/81-02/IE-V-433