

1. INSPECTION HISTORY

() N/A - Initial inspection

- A. Violations were identified during any of the last two inspections or two years, whichever is longer () Y () N
- B. Response letter(s) or 591(s) dated _____
- C. Open violations from previous inspections:

| Requirement | Violation | Corrective Action Taken (Y/N) | Status Open/Closed |
|-------------|--|-------------------------------|-----------------------|
| 10CFR 30.3 | Failure to provide inventory to those authorized by the license (New type via) | yes | Closed |
| | | | |
| | | | |
| | | | |

D. Explain any previous violation(s) not corrected or repeated () N/A

2. ORGANIZATION AND SCOPE OF PROGRAM

A. Organizational Structure

Elmer Bennett Howard - RSO Reports to Technical Manager.
 6 person Rad Lab associated with the same license program.
 * Steve Babcock * Randy Riggs

- + Individuals contacted during inspection
- * Individuals present at exit meeting

- 1. Meets license requirements [L/C] () Y () N
- 2. Multiple authorized locations of use and/or laboratories () Y () N
 If yes, may use ATTACHMENT A as a guide for location(s) or lab(s) inspected and note lab numbers where violations are found. () N/A
- 3. Briefly describe scope of activities, including types and quantities of use involving byproduct material, frequency of use, staff size, etc.

3-EGG source, 1163 - 2 are in use and ROTATED for cleaning one is in storage in the RSOE office (locked drawer)
 one X-ray Fluorescence Analyzer with 45mCi, P-32 and C-14
 Am-241 in a TRS-600 Analyser.

- B. Radiation Safety Committee required [L/C] () Y () N
- 1. RSC fulfills license requirements [L/C] () Y () N
- 2. Records maintained [L/C] () Y () N

- C. Radiation Safety Officer
1. Authorized on license [L/C] Y () N
 2. Fulfills duties as RSO Y () N
- D. Use by authorized individuals [L/C] Y () N

Remarks: *Elmer Brown Howard.*

3. TRAINING, RETRAINING, AND INSTRUCTIONS TO WORKERS

- A. Instructions to workers/students per [10 CFR 19.12] Y () N
- B. Training program required [L/C] Y () N

1. If so, briefly describe training program:

- no new personnel
- some students - interest in uranium

2. Training program implemented Y () N
3. Periodic training program required Y () N
4. Periodic training program implemented Y () N
5. Records maintained Y () N

C. Individuals understanding of procedures and Regulations is adequate Y () N

1. Current operating procedures Y () N
2. Emergency procedures Y () N
3. Use of survey instrumentation Y () N

D. Revised Part 20

Workers cognizant of requirements for:

1. Radiation Safety Program [20.1101] Y () N
2. Annual dose limits [20.1301, 1302] Y () N
3. New forms 4 and 5 Y () N () N/A
4. 10% monitoring threshold [20.1502] Y () N
5. Dose limits to embryo/fetus and declared pregnant worker [20.1208] Y () N
6. Grave Danger Posting [20.1902] Y () N N/A
7. Procedures for opening packages [20.1906] Y () N () N/A
8. Sewer disposal limits [20.2003] Y () N N/A

NOTE: Deficiencies in this area, while not always a violation, should be brought to the attention of licensee management at the exit meeting and in the cover letter transmitting the inspection report or NOV.

Remarks:

4. INTERNAL AUDITS, REVIEWS OR INSPECTIONS

- A. Audits are required [L/C] (X) Y () N
B. Audits or inspections are conducted (X) Y () N

(1) Audits conducted by RSS
(2) Frequency Weekly

- C. Content and implementation of the radiation protection program reviewed annually by the licensee [20.1101(c)] (X) Y () N
D. Records maintained [20.2102] (X) Y () N

C. - Part of weekly Review

5. FACILITIES

- A. Facilities as described in license application [L/C] (X) Y () N
B. Describe any Self-contained dry-source-storage irradiators [Part 36] and/or survey instrument calibrators (model, radionuclide, activity, use, etc.) (X) N/A

1. Maintenance of safety-related components performed by authorized persons [L/C] () Y () N
2. Access to keys and/or material controlled [20.1801, 1802, L/C] (X) Y () N
3. Access to high/very high radiation areas controlled [20.1601, 1602, L/C] () Y () N
4. Adequate protection of shield integrity, fire protection [L/C] () Y () N

Remarks:

*Personnel keys to building (total)
3 people authorized to have keys. materials secured properly.*

6. MATERIALS

- A. Isotope, chemical form, quantity and use as authorized [L/C] (X) Y () N
B. Licensed materials secured to prevent unauthorized removal or access [20.1801, 1802] (X) Y () N
C. Leak tests and Inventories [L/C]

1. Performed as required (X) Y () N () N/A
2. Adequate analysis methodology and sensitivity (X) Y () N () N/A
3. Records maintained [L/C] () Y () N

Remarks:

7. RADIATION SURVEYS

N/A

A. Instruments and equipment:

- 1. ~~Appropriate operable survey instrumentation possessed and readily accessible [L/C]~~ () Y () N
- 2. ~~Calibrated as required [20.1501, L/C]~~ () Y () N
- 3. ~~Calibration records maintained [20.2103(a)]~~ () Y () N

B. Briefly describe area survey requirements [20.1501(a), L/C]:

Leak tests only

C. Performed as required [20.1501(a), L/C] () Y () N

- 1. Contamination found () Y () N
- 2. Corrective action taken and documented () Y () N

D. Records maintained [20.2103, L/C] () Y () N

E. Protection of members of the public

- 1. Licensee made adequate surveys to demonstrate either (1) that the TEDE to the individual likely to receive the highest dose does not exceed 100 mrem in a year, or (2) that if an individual were continuously present in an unrestricted area, the external dose would not exceed 2 mrem in any hour and 50 mrem in a year [20.1301(a)(1), 1302(b)] () Y () N
- 2. Unrestricted area radiation levels do not exceed 2 mrem in any one hour [20.1301(a)(2)] () Y () N
- 3. Records maintained [20.2103, 2107] () Y () N

Remarks:

8. RADIOACTIVE WASTE

() N/A

A. Disposal

() N/A

1. Decay-in-storage (X) N/A

- a. Procedures approved [20.2001(a)(2), L/C] () Y () N
- b. In accordance with [L/C] () Y () N
- c. Labels removed or defaced [20.1904(b)] () Y () N

2. Special procedures performed as required [L/C] () Y () N

- 3. Liquid scintillation (LS) media and animal carcasses per [20.2005] () Y () N () N/A
- 4. Improper/unauthorized disposals [20.2001] () Y () N
- 5. Records maintained [20.2103(a), 2108, L/C] () Y () N

B. Effluents

N/A

- 1. Release into sanitary sewer [20.2003] () Y () N () N/A
 - a. Material is readily soluble or readily dispersible [20.2003(a)(1)] () Y () N
 - b. Monthly average release concentrations do not exceed Appendix B values [20.2003] () Y () N
 - c. No more than 5 Ci of H-3, 1 Ci of C-14 and 1 Ci of all other radionuclides combined released in a year [20.2003] () Y () N
 - d. Procedures to ensure representative sampling and analysis properly implemented [20.1501(a)(2), L/C] () Y () N
- 2. Release to septic tanks [20.2003] () Y () N () N/A
 - a. Within unrestricted limits [App B, Table 2] () Y () N
- 3. Waste incinerated () Y () N () N/A
 - a. License authorizes [20.2004(a)(3)] () Y () N
 - b. Licensee directly monitors exhaust () Y () N
 - c. Airborne releases evaluated and controlled [20.1501, 1701] () Y () N
- 4. Control of effluents and ashes [20.1201, 1301, 1501, 2001, L/C] {See also IP 87102, RG 8.37} () Y () N

C. Waste Management

N/A

- 1. Waste compacted [L/C] () Y () N
- 2. Storage area(s) () N/A
 - a. Protection from elements and fire [L/C] () Y () N
 - b. Control of waste maintained [20.1801] () Y () N
 - c. Containers properly labeled and area properly posted [20.1902, 1904] () Y () N
 - d. Package integrity maintained [L/C] () Y () N
- 3. Packaging, Control and Tracking [App. F.III] [20.2006(d)]:

Note: The licensee's waste is likely to be Class A.

- a. Not packaged for disposal in cardboard or fiberboard boxes [61.56(a)] () Y () N
- b. Liquid wastes solidified, i.e., less than 1% freestanding liquid, and void spaces minimized [61.56(a), (b)] () Y () N
- c. Does not generate harmful vapors [61.56] () Y () N

- d. Structurally stable (will maintain its physical dimensions and form under expected disposal conditions) [61.56(b)] () Y () N
 - e. Packages properly labeled [App. F.III.A.2] () Y () N
 - f. Licensee conducts a QC program to ensure compliance with [61.55, 56] and includes management evaluation of audits [App. F.III.A.3] () Y () N
 - g. Shipments not acknowledged within 20 days after transfer are investigated and reported [App. F.III.A.8] () Y () N () N/A
4. Transfers to land disposal facilities () N/A
- a. Transferred to person specifically licensed to receive waste [30.41, 20.2001(b)] () Y () N
 - b. Each shipment accompanied by a manifest prepared as specified in Section I of Appendix F [20.2006(b), App. F.III.A.4] () Y () N
 - c. Manifests certified as specified in Section II of Appendix F [20.2006(c)] () Y () N
- D. Records of surveys and material accountability are maintained [20.2103, 2108] () Y () N

Remarks:

*Shipped over Vanium Source since 1987
As usual.*

9. RECEIPT AND TRANSFER OF RADIOACTIVE MATERIAL

- A. Describe how packages are received and by whom: () N/A
- All Directly to Reg.*
- B. Written package opening procedures established and followed [20.1906(e)] () Y () N *N/A*
 - C. All incoming packages with DOT labels wiped, unless exempted (gases and special form) [20.1906(b)(1)] () Y () N
 - D. Incoming packages surveyed per [20.1906(b)(2)] () Y () N
 - E. Monitoring in (c) and (d) performed within time specified [20.1906(c)] () Y () N
 - F. Transfer(s) between licensees performed per [30.41] () Y () N
 - G. All sources surveyed before shipment and transfer [20.1501(a), 49 CFR 173.475(i), L/C] () Y () N
 - H. Records of surveys and receipt/transfer maintained [20.2103(a), 30.51] () Y () N
 - I. Transfers within licensee's authorized users or locations performed as required [L/C] () Y () N () N/A
 - J. Arrangements made for Type A packages [20.1906(a)] () Y () N

K. Package receipt/distribution activities evaluated for compliance with 20.1301 [20.1302] () Y () N () N/A

Remarks:

10. TRANSPORTATION (10 CFR 71.5(a) and 49 CFR 170-189) () N/A

A. Licensee shipments are:

- delivered to common carriers
- () transported in licensee's own private vehicle
- () both
- () no shipments since last inspection

B. HAZMAT training [172.700-704] () Y () N

C. Packages () N/A

1. Authorized packages used [173.415, 416(b)] () Y () N

2. Performance Test records on file () N/A

a. Special Form Sources [173.476(a)] () Y () N

b. DOT-7A packages [173.415(a)] () Y () N

3. COCs on file with NRC for Type B [71.12(c)(1)] () Y () N

4. Two labels (White-I, Yellow-II, Yellow-III) with TI, Nuclide, Activity, and Hazard Class [172.403, 173.441] () Y () N

5. Properly marked (Shipping Name, UN Number, Package Type, RQ, "This End Up" (liquids), Name and Address of consignee) [172.301, 306, 310, 312, 324] () Y () N

6. Closed and sealed during transport [173.475(f)] () Y () N
Accepted. (Accepted) pursuant to this Article

D. Shipping Papers () N/A

1. Prepared and used [172.200(a)] () Y () N

2. Proper {Shipping name, Hazard Class, UN Number, Quantity, Package Type, Nuclide, RQ, Radioactive Material, Physical and chemical form, Activity, Category of label, TI, Shipper's Name, Certification and Signature, Emergency Response Phone Number, "Limited Quantity" (if applicable), "Cargo Aircraft Only" (if applicable)} [172.200-204] () Y () N

3. Readily accessible during transport [177.718(e)] () Y () N

E. Vehicles () N/A

1. Placarded [172.504] () Y () N

2. Cargo blocked and braced [177.842(d)] () Y () N

3. Proper overpacks (shipping name, UN Number, labeled, statement indicating that inner package complies with specification packaging) [173.25] () Y () N

F. Any incidents reported to DOT [171.15, 16] () Y () N

Remarks:

11. PERSONNEL RADIATION PROTECTION

- A. Licensee performed exposure evaluation [20.1501] (X) Y () N
- B. Licensee incorporated ALARA considerations in the Radiation Protection Program [20.1101(b)] (X) Y () N
- C. External Dosimetry (X) N/A
1. Licensee monitors workers [20.1502(a), L/C] () Y () N
 2. External exposures account for contributions from airborne activity [20.1203] () Y () N () N/A
 3. Supplier _____ Frequency _____
 4. Supplier is NVLAP-approved [20.1501(c)] () Y () N
 5. Dosimeters exchanged at required frequency [L/C] () Y () N
- D. Internal Dosimetry (X) N/A
1. Licensee monitors workers [20.1502(b), L/C] () Y () N
 2. Briefly describe licensee's program for monitoring and controlling internal exposures [20.1701, 1702, L/C]:
 3. Air sampling performed () Y () N
 4. Monitoring/controlling program implemented () Y () N
 5. Respiratory protection equipment [20.1703, L/C] () Y () N
- E. Reports (X) N/A
1. Reviewed by _____ Frequency _____
 2. Inspector reviewed personnel monitoring records for period _____ to _____
 3. Prior dose determined for individuals likely to receive doses [20.2104] () Y () N
 4. Maximum exposures TEDE _____ Other _____
 5. Maximum CDEs _____ Organs _____
 6. Maximum CEDE _____
 7. Licensee sums internal and external [20.1202] () Y () N
 8. TEDEs and TODEs within limits [20.1201] () Y () N
 9. NRC Forms or equivalent [20.2104(d), 2106(c)]
 - a. NRC-4 () Y () N Complete: () Y () N
 - b. NRC-5 () Y () N Complete: () Y () N

10. Worker declared her pregnancy in writing during inspection period (review records) () Y () N () N/A
 If yes, licensee in compliance with [20.1208] () Y () N
 and records maintained [20.2106(e)] () Y () N

F. Who performed PSEs at this facility (number of people involved and doses received) [20.1206, 2104, 2105, 2204] (X) N/A

G. Records of exposures, surveys, monitoring, and evaluations maintained [20.2102, 2103, 2106, L/C] (X) Y () N

Remarks: *on Generally licensed large installations, only.*

12. NRC INDEPENDENT MEASUREMENTS

A. Survey instrument Serial No. Last calibration

Wellen 3 *106232* *8/94*

B. Inspector's measurements were compared to licensee's () Y (X) N

C. Describe the type, location, and results of measurements:

Generally licensed 100mCi Cs-137 source at Employee Access Area less than 0.5mR/hr.

13. NOTIFICATION AND REPORTS

(X) N/A

A. Licensee in compliance with [19.13, 30.50] (reports to individuals, public and occupational, monitored to show compliance with Part 20) () Y () N () N/A

B. Licensee in compliance with [20.2201, 30.50] (theft or loss) () Y () N () None

C. Licensee in compliance with [20.2202, 30.50] (incidents) () Y () N () None

D. Licensee in compliance with [20.2203, 30.50] (overexposures and high radiation levels) () Y () N () None

E. Licensee aware of NRC Ops Center phone number () Y () N

14. POSTING AND LABELING

A. NRC-3 "Notice to Workers" is posted [19.11] (X) Y () N

B. Parts 19, 20, 21, Section 206 of Energy Reorganization Act, procedures adopted pursuant to Part 21, and license documents are posted or a notice indicating where documents can be examined is posted [19.11, 21.6] (X) Y () N

C. Other posting and labeling per [20.1902, 1904] and the licensee is not exempted by [20.1903, 1905] (X) Y () N

Remarks:

15. RECORDKEEPING FOR DECOMMISSIONING

N/A

- A. Records of information important to the safe and effective decommissioning of the facility maintained in an independent and identifiable location until license termination [30.35(g)] Y N
- B. Records include all information outlined in [30.35(g)] Y N

Remarks:

16. BULLETINS AND INFORMATION NOTICES

- A. Bulletins, Information Notices, NMSS Newsletters, etc., received by the Licensee Y N
- B. Licensee took appropriate action in response to Bulletins, Generic Letters, etc. Y N

Remarks:

17. SPECIAL LICENSE CONDITIONS OR ISSUES

N/A

- A. Special license conditions or issues to be reviewed:
- B. Evaluation:

18. CONTINUATION OF REPORT ITEMS

N/A

19. VIOLATIONS, NCVs, AND OTHER ISSUES

N/A

Note: Briefly state (1) the requirement and (2) how and when the licensee violated the requirement. For non-cited violations, indicate why the violation was not cited.

20. PERFORMANCE EVALUATION FACTORS

Licensee (name & location)

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Inspector

M. M. ITNELL

Inspection Date

11/14/94

- A. Lack of senior management involvement with the radiation safety program and/or Radiation Safety Officer (RSO) oversight () Y (~~✓~~) N
- B. RSO too busy with other assignments () Y (~~✓~~) N
- C. Insufficient staffing () Y (~~✓~~) N
- D. Radiation Safety Committee fails to meet or functions inadequately () Y () N (~~✓~~) N/A
- E. Inadequate consulting services or inadequate audits () Y () N (~~✓~~) N/A

Remarks (consider above assessment and/or other pertinent PEFs):

Regional follow-up on above PEFs citations:

END