

APPENDIX E

NOTE: All areas indicated in field notes are not required to be addressed during each inspection

INDUSTRIAL/ACADEMIC/RESEARCH INSPECTION FIELD NOTES
Region 1

Inspection Report No. 95-001

License No. 44-28698-01

Licensee (Name & Address):
Health Physics Services
83 Pine Street
Brattleboro, VT 05301

Docket No. 030-32526

OFFICE at VY: (802) 258-5495

HOME:

Licensee Contact Robert Leach

Telephone No. 802 257-7467

Last Amendment No. 01

Date of Amendment 11/10/93

Priority: 3
Program Code 03225

Date of Last Inspection 11-20-92
Date of This Inspection 12-20-95

Type of Inspection: () Announced () Unannounced
() Routine () Special
() Initial () Reinspection

Next Inspection Date 12/00 () Normal () Reduced () Extended

Summary of Findings and Action:

- () No violations cited, Clear 591 issued
- () Violation(s), 591 issued
- () Violation(s), Regional letter issued
- () Followup on Previous Violations

Were non-cited violations identified during this inspection? () Y () N

Was proprietary information reviewed by or received by the inspector? () Y () N

Inspector: 
(Signature)

Date 12/20/95

Approved: 
(Signature)

Date 12/20/95

1. INSPECTION HIS RY

(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 11/25/92
- C. Open violations from previous inspections:

<u>Requirement</u>	<u>Violation</u>	<u>Corrective Action Taken (Y/N)</u>	<u>Status Open/Closed</u>

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

2. ORGANIZATION AND SCOPE OF PROGRAM

- A. Organizational Structure + Bob Leach, RSO + sole user

+ 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 customers; analyze leak tests; take leak tests
 Usually leak tests of gauges (beta gauges).
 leak tests analyzed in 2nd floor room of private residence.*

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

*4 leaks in 1995 (none > NRC notification threshold)
 ∴ detectable activity < 0.005 uCi
 Over 300 tests analyzed in 1995.*

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] *Bob Teach only* Y N

Remarks:

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

Review Regulations

Licensee trains customers on how to take leak tests.

- 1. If so, briefly describe training program:
- 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

} N/A

- 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 N/A Y N
- 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] N/A Y N
- 7. Procedures for opening packages [20.1906] N/A Y N
- 8. Sewer disposal limits [20.2003] N/A Y N

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

NZ

- A. Audits are required [L/C] () Y () N
- B. Audits or inspections are conducted () Y () N
 - (1) Audits conducted by _____
 - (2) Frequency _____
- C. Content and implementation of the radiation protection program reviewed annually by the licensee [20.1101(c)] () Y () N
- D. Records maintained [20.2102] () Y () N

5. FACILITIES

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

6. MATERIALS

- A. Isotope, chemical form, quantity and use as authorized [L/C] () Y () N
- B. Licensed materials secured to prevent unauthorized removal or access [20.1801, 1802] () Y () N
- C. Leak tests and Inventories [L/C]
 - 1. Performed as required () N/A () Y () N
 - 2. Adequate analysis methodology and sensitivity () N/A () Y () N
 - 3. Records maintained [L/C] () Y () N

Remarks:

exempt quantity stds.

7. RADIATION SUR §

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]:

N/A

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 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] N/A Y N

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] () N/A (✓) Y () N

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] (✓) N/A () Y () N

a. Within unrestricted limits [App B, Table 2] () Y () N

3. Waste incinerated (✓) N/A () Y () N

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/A

a. Compliance with air emissions requirements in Part 20:

Licensee has demonstrated compliance with air emission requirements in 10 CFR Part 20 () Y () N

Basis for compliance determination (circle one or more; provide basis below)

___ (1) Measured concentrations of radionuclides in air effluents are below Appendix B, Table 2 concentrations (and external dose < 50 mrem/yr)

___ (2) Bounding calculations show that air effluents could not exceed Appendix B, Table 2 concentrations (and external dose < 50 mrem/yr)

___ (3) Dose modeling shows that dose equivalent to the individual likely to receive the highest dose does not exceed 10 mrem/yr

___ (4) Licensee does not possess sufficient radioactive material to exceed Part 20 requirements

Basis for Determination: _____

leak test samples with detectable activity are disposed via sewer. Licensee performs calculations to compare to App B 10 CFR 20. OK

Description of effluent monitoring program

- 1. Monitoring system hardware equipment adequate () Y () N
- 2. Equipment calibrated as appropriate () Y () N
- 3. Air samples/sampling technique (charcoal, HEPA, etc.) analyzed with appropriate equipment () Y () N

Remarks:

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] () N/A () Y () N
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 (surveys and material accountability) are maintained [20.2103, 2108] () Y () N

Remarks:

9. RECEIPT AND TRANSFER OF RADIOACTIVE MATERIAL

A. Describe how packages are received and by whom: () N/A

Leak tests samples arrive in the mail (shipped as non-rad).

B. Written package opening procedures established and followed [20.1906(e)] () Y () N

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) above, 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] () N/A () Y () N

J. Arrangements made for packages containing quantities of radioactive material in excess of Type A quantity [20.1906(a)] () Y () N

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

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
- 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] () Y () N
 B. Licensee incorporated ALARA considerations in the
 Radiation Protection Program [20.1101(b)] () Y () N

- C. External simetry (✓) N/A
1. Licensee monitors workers [20.1502(a), L/C] () Y () N
 2. External exposures account for contributions from airborne activity [20.1203] () N/A () Y () N
 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 (✓) 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 (✓) 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) () N/A () Y () N
 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] (✓) N/A
- G. Records of exposures, surveys, monitoring, and evaluations maintained [20.2102, 2103, 2106, L/C] (✓) Y () N

Remarks:

12. NRC INDEPENDENT MEASUREMENTS

NI

A. Survey instrument Serial No. Last calibration

- B. Inspector's measurements were compared to licensee's () Y () N
- C. Describe the type, location, and results of measurements:

13. NOTIFICATION AND REPORTS

() N/A

- A. Licensee in compliance with [19.13, 30.50] (reports to individuals, public and occupational, monitored to show compliance with Part 20) () N/A () Y () N
- B. Licensee in compliance with [20.2201, 30.50] (theft or loss) () None () Y () N
- C. Licensee in compliance with [20.2202, 30.50] (incidents) () None () Y () N
- D. Licensee in compliance with [20.2203, 30.50] (overexposures and high radiation levels) () None () Y () N
- 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] () 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] () Y () N
- C. Other posting and labeling per [20.1902, 1904] and the licensee is not exempted by [20.1903, 1905] () 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
- B. Licensee took appropriate action in response to Bulletins, Generic Letters, etc.

() Y () N
() 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.

Clear 591

20. DEBRIEF WITH LICENSING STAFF

Inspection findings discussed with licensing staff () N/A () Y () N
Items discussed:

21. EPA REFERRAL FORM

EPA referral form for air effluents sent to appropriate EPA regional office per IP 87102

() Y () N () A

22. PERFORMANCE EVALUATION FACTORS

Licensee (name & location)
Health Physics Services
Brattleboro, VT

Inspector Orley
Inspection Date 12/20/95

- 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 () N/A () Y () N
- E. Inadequate consulting services or inadequate audits () N/A () Y () N

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

Regional follow-up on above PEFs citations:

Directions: Take Rt 91 to Vermont. ^{END} Take Exit 1 + follow signs to Brattleboro. After the hospital make your 1st left onto Pine Street. Licensee's residence is on the left. #83

NOTE TO INSPECTOR:
Licensee wishes to be inspected at night. This license authorizes activities at his home residence. Sole user + RSO works at Vermont Yankee during the day + performs leak test analysis at night.