APPENDIX A
INDUSTRIAL/ACADEMIC/RESEARCH INSPECTION FIELD NOTES

Region 1

Inspection Report No. 99-001 License No. 06-13053-04

Licensee (Name & Address): Docket No. 030-30292

BAYER CORPORATION
400 MORGAN LANE
WEST HAVEN, CONNECTICUT
06516-4175

Licensee Contact J. TAYKIN Telephone No. (203) 931-5175

Amendments Issued Since Last Inspection: (Numbers) 04
Dates of Above Amendments: 6-6-95

Priority: 2
Program Code 03610

Date of Last Inspection 12-8-94
Date of This Inspection MARCH 9 & 10, 1999

Type of Inspection:

( ) Announced (✓) Unannounced
(✓) Routine ( ) Special
( ) Initial ( ) Reinspection

Next Inspection Date 4/2002 ( ) Normal ( ) Reduced (✓) Extended

Justification for change in normal inspection frequency:

94-001 inspection clear
99-001 inspection clear
> meets criteria to extend

Summary of Findings and Action:

(✓) No violations cited, Clear NRC Form 591 or regional letter issued
( ) Violation(s), NRC Form 591 issued
( ) Violation(s), regional letter issued
( ) Followup on previous violations

Information in this record was deleted in accordance with the Freedom of Information Act, exemptions 6
FOIA- 2006-0219

Inspector: Richard H Gaden (Signature) Date March 10, 1999

Approved: Pamela J Henderson (Signature) Date April 6, 1999

D/1

Field notes are to be used by the inspector to assist with the performance of the inspection. Note that all areas indicated in the field notes are not required to be addressed during each inspection. However, for those areas not covered during the inspection, a notation ("Not Reviewed") should be made in each section where applicable. Additionally, all areas covered during the inspection should be documented in sufficient detail to describe what activities and/or records the inspector observed. For example, the types of records that were reviewed and the time periods covered by those records should be noted. If the licensee demonstrates any practices at your request, describe those demonstrations. The observations and demonstrations you describe in this report, along with measurements and some records review, should substantiate your inspection findings.

NOTE: For inspections of radioactive drug distributors, ensure that all applicable sections (regarding 10 CFR Part 32) of the radiopharmacy field notes are completed.

1. **INSPECTION, LICENSING, AND INCIDENT HISTORY**

A. Violations were identified during any of the last two inspections or two years, whichever is longer. (N/A = Initial insp.) ( ) N/A ( ) Y (✓) N

B. Response letter(s) or 591(s) dated N/A

C. Violations from previous inspection(s):

REQUIREMENT CITED	STATUS
12-8-94 CLEAR	

D. Any repeat violation(s) identified? ( ) Y ( ) N N/A
If "Yes," explain:

E. License amendments issued since last inspection, or program changes noted in the license:

AMENDMENT #	DATE	SUBJECT
04	6-6-95	NAME CHANGE

F. During this inspection, was the licensee's implementation of all of the above amendments or program changes inspected/observed? (✓) N/A ( ) Y ( ) N

G. During this inspection, were any violations identified involving any of the above amendments or program changes? (✓) N/A ( ) Y ( ) N

H. List any incidents or events reported to NRC since the last inspection (Note: "None" indicates that regional event logs, event files, and the licensing file have no evidence of any incidents or events since the last inspection): (✓) None

INCIDENT OR EVENT

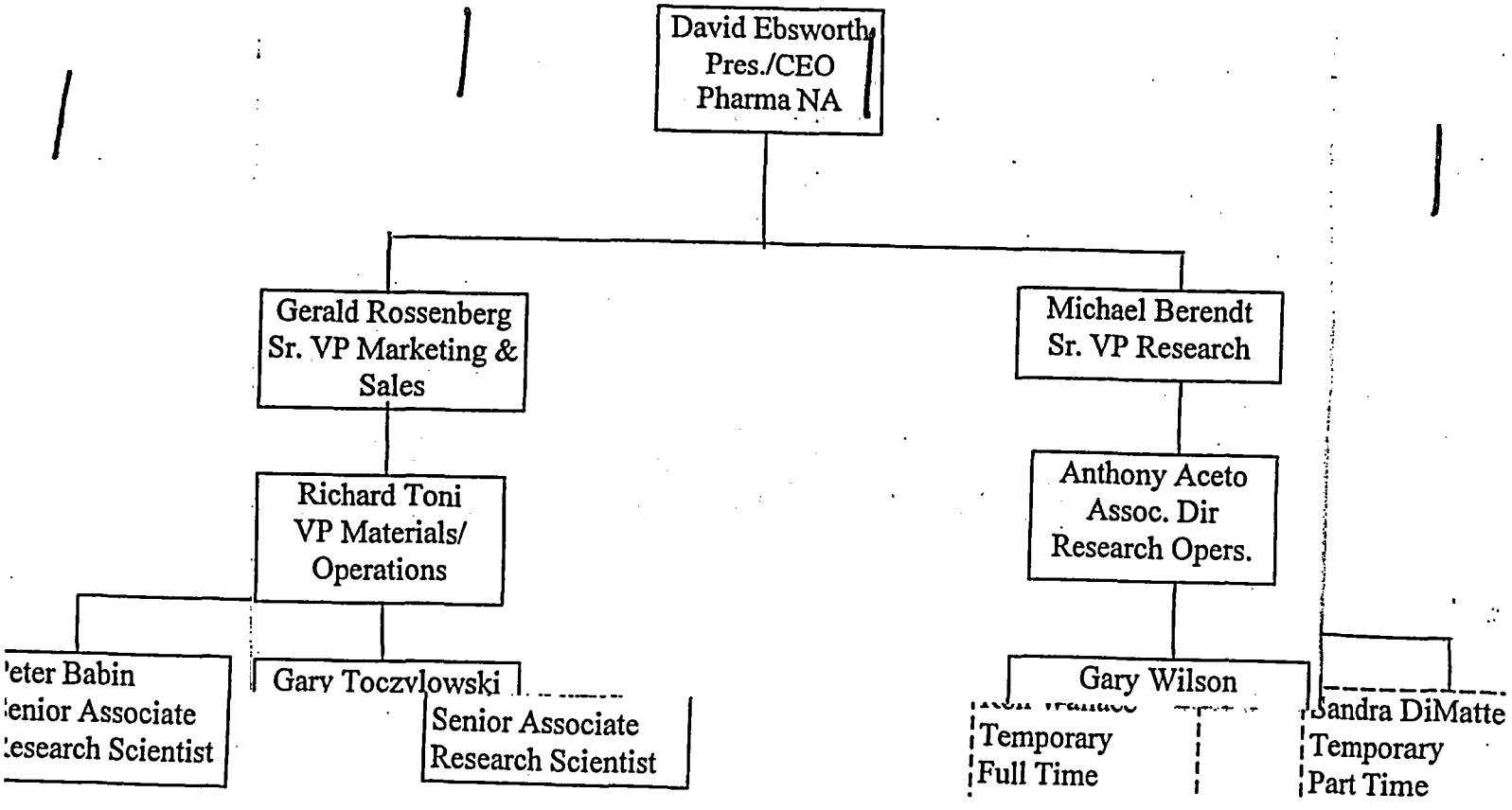
I. During this inspection, were the incidents/events reviewed with the licensee, and was the licensee's follow-up to the incidents/events examined? (✓) N/A ( ) Y ( ) N

J. Describe the licensee's follow-up in response to the events/incidents listed in 1.H.:

Comments:

2. **ORGANIZATION AND SCOPE OF PROGRAM**

A. Describe the licensee's organizational structure to indicate the "chain-of-command" from senior management to authorized users of licensed material. Show or describe where the RSO and Chairperson of the RSC are located in the licensee's organization and to whom they report:



B. Identify licensee personnel contacted during the inspection (including those individuals contacted by telephone).

J. M. TAMKIN - PSO
R. EARIS - PROJECT MANAGER
* G. TOCZYLOWSKI - DIRECTOR
*+ G. A. WILSON - CHAIR PSC
R. HONG - RESEARCHER
T. HOUSLEY - RESEARCHER
* P. BABIN - H.P. TECH
B. BLOOMQUIST - RESEARCHER
S. WILHEMS - RESEARCHER

(Use the following identification symbols:)
Individuals present at entrance meeting
* Individuals present at exit meeting
+ Individuals contacted by telephone

C. Authorized for multiple locations of use ( ) Y (✓) N
If yes, may use ATTACHMENT A as a guide for inspecting laboratories.

D. Authorized for multiple permanent field office locations ( ) Y (✓) N
(1) Inspection performed at multiple field offices ( ) Y ( ) N/A
(2) If "Yes," list office locations inspected:

E. Authorized for temporary job site locations ( ) Y (✓) N
(1) Inspection performed at temporary job site(s) ( ) Y ( ) N/A
(2) If not, describe why not:

F. Briefly describe scope of activities, including types and quantities of use involving licensed material, frequency of use, staff size, etc.

RAM IS USED 7 DAYS A WEEK. LARGE TYPE A BROAD SCOPE PROGRAM WITH AN ACTIVE RSC. SINCE 1994 ACTIVITY HAS INCREASED WITH EXCEPTION OF IODINATION, ONLY (8) I-125 SINCE 1994. P_{32}, P_{33}, S_{35}, H_3, C_{14} USED 300\350 AUTHORIZED USERS WITH POSSIBLE EXPANSION OF 150 MORE BY 2000. RESEARCH & DEVELOPMENT DRUG WORK. APPROXIMATELY 95 RAM LABORATORIES W ONE LARGE COMMON LABORATORY. HAVE SEVERAL NI-63 SOURCES IN GAS CROMATOGRAPHS (11) VARIAN, PERKIN-ELMER, H.P. & CJ BRUGN

3. **MANAGEMENT OVERSIGHT**

A. Radiation Safety Committee (RSC) required [L/C][1] (✓)Y ( ) N

(1) RSC fulfills license requirements [L/C] MEETS (4) (✓)Y ( ) N

(2) Records maintained [L/C] (✓)Y ( ) N

B. Radiation Safety Officer (RSO)

RSO & RSC SEEM TO WORK CLOSELY TOGETHER. RSO TAKES A DIRECT INTEREST IN PROGRAM. MEES HER JOB VERY SERIOUSLY. BUT HAS OTHER DUTIES. CURRENTLY 30% RSO DUTIES. DOES HAVE ASSISTANCE (2) FULL TIME & 2 PART TIME TECHS. SHOULD DEVOTE 50% TIME TO RSO DUTIES

(1) Authorized on license [L/C] (✓)Y ( ) N

(2) Fulfills duties as RSO (✓)Y ( ) N

C. Audits, Reviews, or Inspections

(1) Audits are required [L/C] (✓)Y ( ) N

(2) Audits or inspections are conducted ( )Y ( ) N

Audits conducted by RSO & COMPANY

Frequency CORPORATE EVERY (2) YRS; RSO ANNUAL

(3) Content and implementation of the radiation protection program reviewed annually by the licensee [20.1101(c)][2] (✓)Y ( ) N

(4) Records maintained [20.2102] (✓)Y ( ) N

1998 AUDIT PERFORMED BY JIM ROMENKO HEALTH PHYSICS CONSULTANT

D. Use by authorized individuals [L/C] (✓)Y ( ) N

E. If supervision permitted by the license or by regs, authorized users supervise adequately [L/C] (✓)Y ( ) N

PI SUPERVISE USE OF THEIR ASSISTANTS

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[1] Here and throughout the field notes, "L/C" means "license condition."

[2] Here and throughout the field notes, sections of 10 CFR are referenced only by their section numbers.

4. **FACILITIES**

A. Facilities as described in license application [L/C] (✓)Y ( ) N
B. Facilities are secured to prevent unauthorized access [L/C] (✓)Y ( ) N
C. Describe any self-contained dry-source-storage irradiators and/or survey instrument calibrators (model, radionuclide, activity, use, etc.) (✓)N/A

VERY GOOD SECURITY TO PREVENT UNAUTHORIZED ACCESS TO FACILITIES & LABS. (2) LAYER KEY CARD SYSTEM; 24 HOUR GUARD FORCE W PATROLS. VERY LIMITED ACESS POINT TO SITE. ALL VISTORS MUST REGISTER & GET A BADGE & A ESCORT

(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

Basis for Findings: INSPECTOR REVIEWED RSC MINUTES FOR: 9-16-97 1-11-98; 3-12-98; 7-30-98; 9-21-98. ADEQUATE REP. PROTOCOL & ALARA REVIEWS. INSPECTOR TOURED SELECTED LABS. 210; PACOMMON; 331: DISCUSSIONS WITH RSO & RECORD REVIEWS. NO CHANGE IN FACILITY DESIGN

5. **EQUIPMENT AND INSTRUMENTATION**

A. Instruments and equipment: EBERLINE RM-6, LUDLUM 3

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

B. Procedures established to identify and report safety component defects [21.21] (✓)Y ( ) N

Basis for Findings:
DURING TOUR OF LABS. INSPECTOR EXAMINED SURVEY INSTRUMENTS FOR OPERABILITY / CALIBRATION. REVIEW OF CALIBRATION CERTIFICATES FOR INSTRUMENTS IN USE IN P_{32} & S_{35} LABS. INSPECTOR DETERMINED THE CAMERA IN MULTI-USE HOT LAB HAD BEEN DISCONNECTED SINCE NO CONTAMINATION ACCIDENTS HAD OCCURRED. INSPECTOR ADVISED RSO TO MOVE IT OR HOOK IT BAK-UP TO SECURITY IT SEEMED TO BE EFFECTIVE. FOR DETAILS RE: SURVEY INSTRUMENTS SEE ATTACHED COPY OF METERLIST DATED 3-9-99.

6. MATERIALS RECEIPT, USE, TRANSFER, AND CONTROL

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

(1) Licensed material in storage in controlled or unrestricted areas is secured from unauthorized removal or access [20.1801] (✓) Y ( ) N

(2) Licensed material in controlled or unrestricted areas and not in storage is controlled and under constant surveillance [20.1802] (✓) Y ( ) N

(3) Access to restricted areas is limited [20.1003] KEY CARD SYSTEM USED ( ) Y ( ) N

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

RAM RECEIVED IN RECEIVING DEPT. H.P. CALL WITHIN 3 HR. H.P. SURVEYS & TRANSPORTS TO LAB. FOR WIPE TEST & STORAGE. RAM THEN TRANSFERED TO USER. ≈ 1000 PACKAGES RECEIVED IN 97

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

E. All incoming packages with DOT labels wiped, unless exempted (gases and special form) [20.1906(b)(1)] (✓) Y ( ) N

F. Incoming packages surveyed [20.1906(b)(2)] (✓) Y ( ) N

G. Monitoring in (E) and (F) above, performed within time specified [20.1906(c)] (✓) Y ( ) N

H. Transfer(s) between licensees performed [30.41] ( ) Y ( ) N/A

I. All sources surveyed before shipment and transfer [20.1501(a), L/C] (✓) Y ( ) N

J. Records of surveys and receipt/transfer maintained [20.2103(a), 30.51] PACKAGE RECEIVING LOG (✓) Y ( ) N

K. Transfers among licensee's authorized users or locations performed as required [L/C] "ISOTOPE INVENTORY SHEET" REVIEWED ( ) N/A (✓) Y ( ) N

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

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

Basis for Findings:

INSPECTOR REVIEWED COMPUTERIZED ORDERING SYSTEM. TESTED LIMIT ORDERS FOR AUTHORIZED USERS. INSPECTOR INTERVIEWED TECHS. & REVIEWED 1998 SHIPPING & RECEIVING RECORDS. INSPECTOR CROSS CHECKED PI POSSESSION LIMITS WITH PROTOCAL AUTHORIZATIONS & COMPUTER RECORDS. FOR DETAILS SEE ATTACHED COPY OF "RADIOISOTOPE CONTAINER SUMMARY" FOR P_{32} & S_{35}. DISCUSSIONS WITH RSO REGARDING MATERIAL RECEIPT, USE, TRANSFER, & CONTROL

7. TRAINING, RETRAINING, AND INSTRUCTIONS TO WORKERS

A. Instructions to workers/students [10 CFR 19.12] (✓)Y ( ) N

B. Training program required [L/C] (✓)Y ( ) N

(1) If so, briefly describe training program:
LICENSEE HAS AN EXTENSIVE TRAINING PROGRAM WHICH IS DOCUMENTED ON COMPUTER. REFRESHER TRAINING GIVEN BY RSO 4/6 HOURS PER YEAR. IN 96 154 INDIVIDUALS TRAINED FOR DETAILS SEE ATTACHED COPY OF "1996 RESEARCH SAFETY TRAINING EFFORTS"

(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. Individual's 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 NRC 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/A
(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

Basis for Findings:
DISCUSSIONS W RSO & REVIEW OF TRAINING RECORDS
INTERVIEWS W (3) RESEARCHERS

8. AREA RADIATION SURVEYS AND CONTAMINATION CONTROL

A. Briefly describe area survey requirements [20.1501(a), L/C]:
SURVEYS ARE DONE DAILY BY AUTHORIZED USERS. WEEKLY & MONTHLY SURVEYS ARE PERFORMED BY TECH. SURVEYS INCLUDED RESTRICTED & UNRESTRICTED AREAS

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

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

C. Records maintained [20.2103, L/C] (✓) Y ( ) N
D. Handling and use of radioactive materials [L/C]

(1) Protective clothing worn (✓) Y ( ) N
(2) Personnel routinely monitor or frisk themselves after procedures or before leaving (✓) Y ( ) N
(3) No eating/drinking/smoking in use/storage areas (✓) Y ( ) N
(4) No food, drink, or personal effects stored in use/storage areas (✓) Y ( ) N
(5) Proper dosimetry worn (✓) Y ( ) N
(6) Radioactive waste disposed in proper containers (✓) Y ( ) N
(7) No pipetting by mouth (✓) Y ( ) N
(8) Use of shielding/distance while using/storing material (✓) Y ( ) N

Basis for Findings:
OBSERVATIONS BY THE INSPECTOR OF USERS & DISCUSSIONS W RSO. REVIEW OF 1998 SURVEY RESULTS

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)]; **(3) the air emissions to the atmosphere are and within the constraint level [20.1101]** (✓) 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, 20.2107] (✓) Y ( ) N
10 AREA FILM BADGES EXCHANGED MONTHLY

F. Leak tests and Inventories [L/C]
2 L.T. NI-63 LAST 1-29-99

(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

Basis for Findings: INSPECTOR REVIEWED NI-63 INVENTORY FOR 1998 LAST INVENTORY 1-29-99. FOR DETAILS SEE ATTACHED COPY. INVENTORY OF RAY CONTINUOUS. INSPECTOR COMPARED INVENTORY WITH POSSESSION LIMITS. DISCUSSIONS W RSO INSPECTOR REVIEWED "RADIATION SAFETY MANUAL" DATED 10/28/97. COMPLETE & UPDATED

9. 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 Dosimetry ( ) 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 | I

(3) Processor LANDAUER Frequency MONTHLY

(4) Processor 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]:

THYROID BIOASSAYS PERFORMED BEFORE AND AFTER IODINATIONS. FEW IODINATIONS PERFORMED IN 1998
NO INTERNAL BODY BURDENS DETECTED

(3) Air sampling performed (✓) Y ( ) N

(4) Monitoring/controlling program implemented (✓) Y ( ) N

(5) Respiratory protection equipment [20.1703, L/C] ( ) Y ( ) N | A

E. Reports ( ) N/A

(1) Reviewed by RSO Frequency MONTHLY

(2) Inspector reviewed personnel monitoring records for period 1/98 to 1/99

(3) Prior dose determined for individuals likely to receive doses [20.2104] ( ) Y ( ) N

(4) Maximum exposures TEDE < 40 mrem Other _____

(5) Maximum CDEs 0 Organs _____

(6) Maximum CEDE 0

(7) Licensee sums internal and external [20.1202] ( ) Y ( ) N | A

(8) TEDEs and TODEs within limits [20.1201] (✓) Y ( ) N

(9) NRC Forms or equivalent [20.2104(d), 2106(c)]

(a) NRC Form 4 ( ) Y ( ) N Complete: (✓) Y ( ) N
(b) NRC Form 5 ( ) Y ( ) N Complete: ( ) Y ( ) N NA

(10) Worker declared her pregnancy in writing during inspection period (review records) (✓) N/A ( ) Y ( ) N

If "yes," licensee in compliance with
dose to embryo/fetus [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, 20.2104-2105, 20.2204] (✓) N/A

G. Records of exposures, surveys, monitoring, and evaluations maintained [20.2102-2103, 20.2106, L/C] (✓) Y ( ) N

H. Licensee advises each worker annually of worker's dose [19.13(b)] (✓) Y ( ) N

Basis for Findings:
INSPECTOR REVIEWED BADGE RESULTS. INTERVIEWED WORKERS. & EXAMINED IODINATION RESULTS SINCE 1994 JMCI

10. **RADIOACTIVE WASTE MANAGEMENT** ( ) 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 [20.2005] (✓) N/A ( ) Y ( ) N
(4) Improper/unauthorized disposals [20.2001] ( ) Y (✓) N
(5) Records maintained [20.2103(a),20.2108, L/C] (✓) Y ( ) N

B. Effluents ~~VI~~ ( ) 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, 20.1701] ( ) Y ( ) N

(4) Control of effluents and ashes [20.1201, 20.1301, 20.1501, 20.2001, L/C] {See also IP 87102, RG 8.37} **(N/A)**

(a) Air effluent less than 10 mrem constraint limit [20.1101] **( )Y ( ) N**

(b) If no, licensee reported appropriate information to NRC **( ) Y ( ) N**

1. Corrective actions implemented and on schedule **( ) Y ( ) N**

(c) Description of effluent monitoring program

(I) Monitoring-system hardware equipment adequate ( ) Y ( ) N

(ii) Equipment calibrated as appropriate ( ) Y ( ) N

(iii) Air samples/sampling technique (charcoal, HEPA, etc.) analyzed with appropriate equipment ( ) Y ( ) N

Basis for Findings: LICENSEE UTILIZED TWO BROKERS. U.S. ECOLOGY FOR LSC & SEG FOR DRY. INSPECTOR REVIEWED RADIOACTIVE WASTE MANIFESTS FOR 1998 PER 10CFR 20.2006. WASTE RECORDS ARE MAINTAINED IN THE SAFETY OFFICE AS REQUIRED BY 10CFR 20.2108 DISCUSSIONS W RSO

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, 20.1904] (✓) Y ( ) N

(d) Package integrity maintained [L/C] (✓) Y ( ) N

NVI

(3) Packaging, Control and Tracking [Part 20, 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 of surveys and material accountability are maintained [20.2103, 2108] (✓) Y ( ) N

Basis for Findings:
HOLD SHORT-LIVED LIQUID RADIOACTIVE WASTE AT LEAST (5) HALF LIVES PRIOR TO DISPOSAL. RECORD REVIEWS & DISCUSSIONS W RSO

11. RECORDKEEPING FOR DECOMMISSIONING

NYI

A. Records of information important to the safe and effective decommissioning of the facility maintained in an independent and identifiable location until license termination. ( ) Y ( ) N

B. Records include all required information [30.35(g)] ( ) Y ( ) N

(1) List of restricted areas [30.35(g)(3)] indicates that laboratories or other rooms have been released since the last inspection ( ) Y ( ) N

(2) Confirmatory measurements show that each room is within release limits, and licensee records adequately document the basis for releasing each room ( ) Y ( ) N

C. Copies of the licensee's decommissioning cost estimates and funding methods on file ( ) Y ( ) N

D. If the licensee uses a parent company guarantee or a self-guarantee as funding method, does the file contain a copy of the financial test performed for the licensee's most recently completed fiscal year? ( ) N/A ( ) Y ( ) N

E. If "Yes" to D., do the financial test ratios meet the criteria in 10 CFR Part 30, Appendix A, Section II for parent company guarantees and Appendix C, Section II for self guarantees? ( ) Y ( ) N

F. Date that licensee's financial assurance instrument was submitted to NRC, if applicable: _____ ( ) N/A

G. Date that licensee's decommissioning plan was submitted to NRC, if applicable: _____ ( ) N/A

H. Have radiological conditions at the licensee's facility changed since the financial assurance mechanism and/or decommissioning plan was submitted due to:

(1) Incidents or events? ( ) N/A ( ) Y ( ) N

(2) Unplanned process upsets or changes? ( ) N/A ( ) Y ( ) N

(3) Unauthorized material, form, or possession limit changes? ( ) N/A ( ) Y ( ) N

(4) Any other changes? ( ) N/A ( ) Y ( ) N

If "Yes" to any of the above (1)-(4), notify regional management.

Basis for Findings (include comments and measurements on any areas the licensee released for unrestricted use):

12. **COMPLIANCE WITH DECOMMISSIONING TIMELINESS RULE**

A. License to conduct a *principle activity* has expired or been revoked ( ) Y (✓) N

B. Licensee has made a decision to permanently cease *principal activities*, at the entire site, or any separate buildings, or any outdoor areas, including inactive burial grounds ( ) Y (✓) N

C. A 24-month duration has passed in which no *principal activities*, have been conducted under the license at the site, or at any separate buildings, or any outdoor areas, including inactive burial grounds ( ) Y (✓) N

D. If "Yes" to either A or B or C:

(1) Identify Site/Bldg/Area: _____

(2) Date of occurrence of A, B, or C: _____

NOTE: If "No" to A and B and C, decommissioning timeliness rule does not apply. If "Yes" to either A or B or C, then complete Attachment B, "Decommissioning Timeliness Field Notes," for this licensee.

Basis for Findings: DISCUSSIONS W/ PSO & OBSERVATIONS BY INSPECTOR

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

A. Licensee Transports: *[complete sections (1) - (4), as applicable]*

(1) Limited Quantities, and/or Instruments and Manufactured Articles: (Radioactive Material, excepted package, [additional info], 7, UN 2910) ( ) N/A

(a) Package meets general design requirements [173.410] ( ) Y ( ) N

(b) Radiation level ≤ 0.005 mSv/hr (0.5 mrem/hr) (Exclusive use instruments and articles, 2 mrem/hr) ( ) Y ( ) N

(c) Contamination less than 173.443 limits, QC examination/test performed prior to each shipment [173.475(l)] ( ) Y ( ) N

(d) Limited Quantity Package marked "Radioactive" [173.421(a)(4)] ( ) Y ( ) N

(e) 173.422 certification statement attached/enclosed ("This package conforms to the conditions and limitations specified in...") ( ) Y ( ) N

(2) Type A Quantities (Radioactive Material, nos, 7, UN 2982) ( ) N/A

(a) Packaging:

(I) Packaging is proper for contents (i.e., DOT 7A), is unimpaired, and is prepared correctly [173.475(a)-(f)] ( ) Y ( ) N

(ii) All packages meet general design requirements [173.410] ( ) Y ( ) N

(iii) DOT 7A Package meets additional Type A design requirements [173.412, 178.350] ( ) Y ( ) N

(b) Recordkeeping:

(I) Special Form source records [173.476(a)] ( ) Y ( ) N

(ii) DOT 7A performance/design documentation [173.415(a)] ( ) Y ( ) N

(c) Hazards communications requirements (consult the "NRC field reference charts" that correspond to elements (I) through (v), below):

(I) Shipping Papers [172.200-205] ( ) Y ( ) N

(ii) Marking Packages [172.300-338] ( ) Y ( ) N

(iii) Labeling Packages [172.400-450] ( ) Y ( ) N

(iv) Placarding Vehicles [172.500-560] ( ) Y ( ) N

(v) Emergency Response information and guidance [172.600-604] ( ) Y ( ) N

(d) Radiation level/Contamination limits [173.441, 173.443]

(I) Package levels within limits ( ) Y ( ) N

(ii) QC examination/test performed prior to each shipment [173.475(I)] ( ) Y ( ) N

(3) Type B Quantities (Radioactive Material, nos, 7, UN 2982) ( ) N/A

(a) Packaging is proper for contents (i.e., Type B), is unimpaired, and is prepared correctly [173.475(a)-(f)] ( ) Y ( ) N

(b) Inspector must complete Section 2 of NRC Inspection Procedure (IP) 86740

(c) Sections 2.c. and 2.d., shown in the previous section for Type A Quantities, also apply. Complete those sections.

(4) LSA Material and SCO (Radioactive Material, LSA, nos, 7, UN 2912) or (Radioactive Material, SCO, nos, 7, UN 2913) ( ) N/A

(a) If licensee makes significant LSA/SCO shipments, inspector should complete Inspection Requirement 03.02 of Temporary Instruction (TI) 2515/133 (issued 3/15/96)

(b) Otherwise, if licensee has a minor LSA/SCO program:

(i) Licensee properly characterizing material as LSA/SCO [173.403] ( ) Y ( ) N

(ii) All packages meet general design requirements [173.410] ( ) Y ( ) N

(iii) Proper LSA/SCO packaging selected and used [173.475, 173.427] ( ) Y ( ) N

(iv) Placarding exclusive use vehicles, marking package "Radioactive-LSA" or "Radioactive-SCO," as appropriate [173.427(a)(6)] ( ) Y ( ) N

(v) Shipping Papers [172.200-205] (see "NRC field reference chart" for content and exceptions) ( ) Y ( ) N

B. <u>DOT HAZMAT Employee Training Program</u> [49 CFR 172.700-704]:

(1) Each HAZMAT employee receives training and is tested [172.702] ( ) Y ( ) N

(2) Recurrent training at least every 2 years [172.704(c)(4)] ( ) Y ( ) N

(3) HAZMAT employee training includes general awareness, function-specific, and safety training [172.704] ( ) Y ( ) N

(4) HAZMAT employer recordkeeping includes employee name, completion date, description/copy/location of training materials, name and address of training provider, and certification [172.704(d)] ( ) Y ( ) N

C. <u>Carrier Modal Specific Requirements, Highway Transportation</u> [49 CFR Part 177]: ( ) N/A

(1) Driver Training, or CDL w/ HAZMAT endorsement [177.800, 177.816] ( ) Y ( ) N

(2) Incident Reporting to DOT [177.807, see also 171.15 and 171.16] ( ) Y ( ) N

(3) Shipping Paper Accessibility (on seat or in driver's side door pocket, readily visible) ( ) Y ( ) N

(4) Placarded Vehicles Routing and Driver Training requirements [177.825 and 49 CFR 397 Subpart D (i.e., the motor carrier regs)] ( ) Y ( ) N

(5) Sum of total package TIs on non-exclusive use vehicle < 50 [177.842(a)] ( ) Y ( ) N

(6) Packages blocked/braced for transport [177.842(c)] ( ) Y ( ) N

D. Miscellaneous Requirements

(1) No labeled packages carried in passenger compartments [173.448(c)] ( ) Y ( ) N

(2) Overpack requirements observed, if packages are offered in overpack. Overpack marked w/ proper shipping name and number, package and overpack labeled as needed, marked "inner package complies ...." [173.24] ( ) Y ( ) N

(3) Expanded and changed A1/A2 values from the 4/1/96 rule changes have been implemented [173.435] (verify only once per licensee) ( ) Y ( ) N

(4) Written instructions included with exclusive use shipments [173.403] ( ) Y ( ) N

Basis for Findings:

14. **POSTING AND LABELING**

A. NRC Form 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 and 20.1904, respectively, and the licensee is not exempted by 20.1903 or 20.1905 (✓) Y ( ) N

Basis for Findings:

INSPECTOR TOURED FACILITY ALL POSTINGS & LABELING CORRECT

15. GENERIC COMMUNICATION OF INFORMATION

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

Basis for Findings:
DISCUSSIONS W PSO DETERMINED WAS RECEIVING ALL NRC GENERIC COMMUNICATIONS TOOK APPROPRIATE ACTION

16. NOTIFICATION AND REPORTS

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 [(301)-816-5100] ( ) Y ( ) N

F. Licensee in compliance with [20.2203] (constraint on air emissions) 8-18-98 REVIEW **( ) None (✓) Y ( ) N**

Basis for Findings:
DISCUSSIONS W RSOF RECORD REVIEWS

17. SPECIAL LICENSE CONDITIONS OR ISSUES ( ) N/A

A. Special license conditions or issues to be reviewed:

B. Evaluation:

18. OBSERVATIONS/DEMONSTRATIONS OF LICENSED ACTIVITIES

Briefly describe the activities and procedures observed and/or demonstrated during the inspection. For example, if you observed licensee personnel working in radiation areas using licensed material or performing functions associated with radiation safety such as receiving or transporting licensed material; conducting or receiving training; disposing of radioactive waste; conducting surveys; or making measurements, then describe what you saw. If the licensee demonstrated any practices at your request, describe those demonstrations. The observations and demonstrations you describe here, and elsewhere in the "Basis for Findings" sections of this report, along with measurements and some records review, should substantiate your inspection findings.

Describe what activities or procedures were observed and/or demonstrated by the licensee during the inspection:

LICENSEE DESCRIBED IN DETAIL SECURITY PROCEDURES ASSOCIATED W RAM STORAGE

The following sections should be completed in a narrative format by the inspector to briefly describe the measurements performed by the inspector, inspection findings, and any post-inspection communications with regional staff.

19. **NRC INSPECTOR'S MEASUREMENTS** ( ) N/A

A.

Survey instrument	Serial No.	Date of calibration
LUDLUM 14C	6596	4-16-98

B. Inspector performed CONFIRMATORY measurements (✓) Y ( ) N

C Inspector performed INDEPENDENT measurements (✓) Y ( ) N

D. Briefly describe the types of measurements performed (i.e., exposure rates, wipe tests, soil samples, air flow measurements, etc.), locations where measurements were taken, the results of these measurements (mR/hr, dpm, etc.), and whether inspector's results conflicted with the licensee's measurements. If independent measurements were not made, justify why they were not performed on this inspection:

INSPECTOR PERFORMED CONFIRMATORY MEASUREMENTS IN RESTRICTED AREAS. ALL READINGS ≤.2MR/HR. COMPARE TO LICENSEE'S RESULTS. ALL READINGS IN UNRESTRICTED AREA ≤.02 MR/HR. COMPARE OK

20. **CONTINUATION OF REPORT ITEMS** (✓) N/A

21. **VIOLATIONS, NON-CITED 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 (NCVs), indicate why the violation was not cited. Attach copies of all licensee documents needed to support the violation.

CLEAR

22. **DEBRIEF WITH REGIONAL STAFF**

A. Was inspection feedback provided to regional licensing staff? ( ) Y (✓)N

If "Yes," name of individual on the licensing staff: _____

If "Yes," describe issues discussed:

B. Briefly describe post-inspection communications with other regional staff (inspector's supervisor, Agreement State officer, State liaison officer, etc.):

DISCUSSED RESULTS W/ SUPERVISOR
UNRESOLVED ITEM SECURITY OF RAM
IN LAB. DURING OFF HOURS WHEN
CLEANING PEOPLE ARE PRESENT. RESOLVED
WITH 3/6-99 TEL. CALL TO RSO. AN AUTHORIZED
INDIVIDUAL ALLOWS ENTRY & REMAINS IN AREA
WHEN CLEANING PERSONNEL ARE PRESENT.

23. **PERFORMANCE EVALUATION FACTORS (PEFs)**

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 conducted	(✓) N/A ( ) Y ( ) N

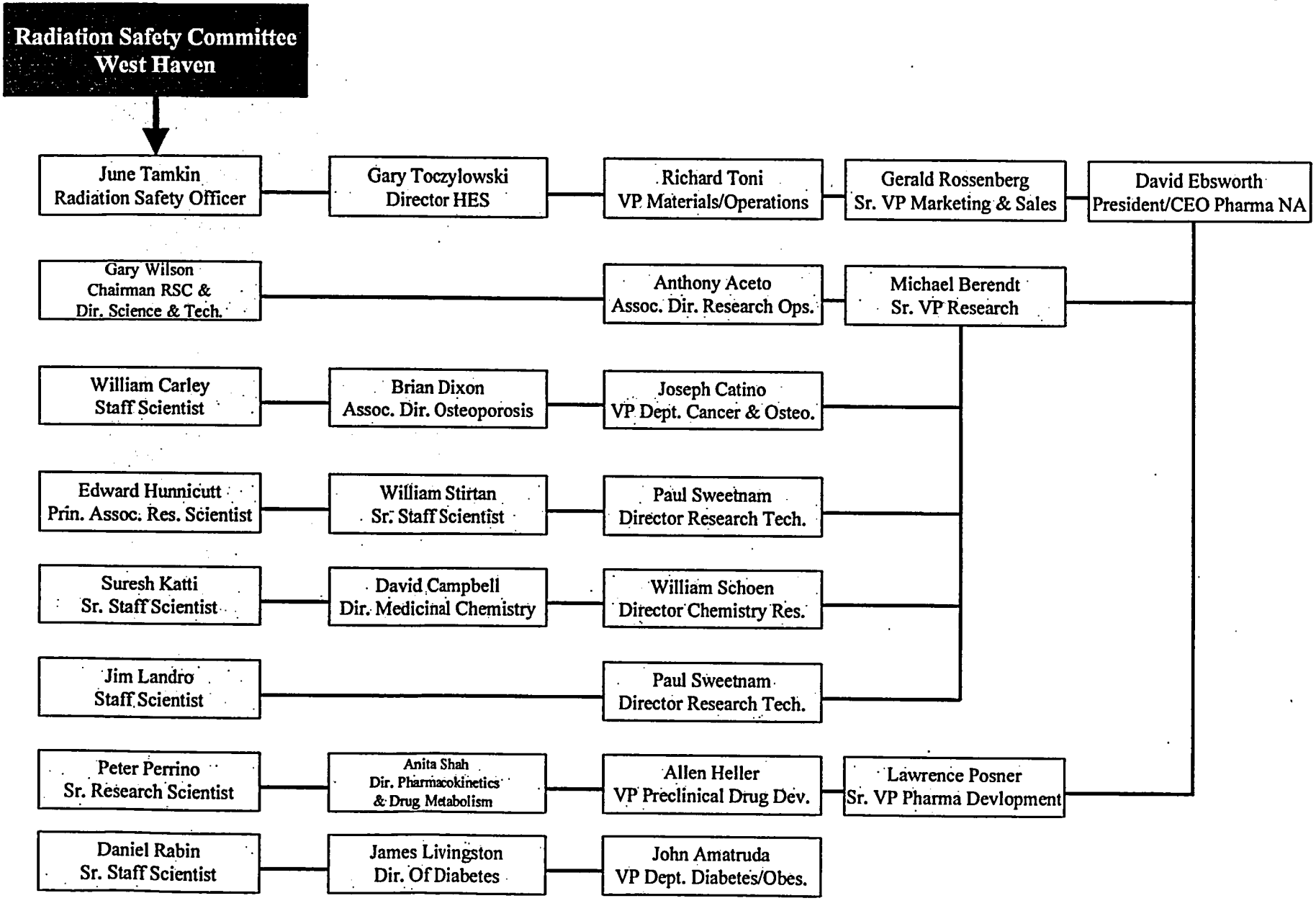
Remarks (consider the above assessment and/or other pertinent PEFs with regard to the licensee's oversight of the radiation safety program):

RSO'S NON RADIATION DUTIES TAKE 70% OF TIME. CURRENTLY ONLY GIVING 30% TO PROGRAM. SHOULD NOT GIVE ≤ 50% FOR BROAD SCOPE COULD BE A POTENTIAL PROBLEM IF PROGRAM EXPANDS. DISCUSSED AT EXIT MEETING

Regional follow-up on above PEFs citations:

END

Attachments:
A. "Laboratory Inspection Field Notes"
B. "Decommissioning Timeliness Inspection Field Notes"


Radiation Safety Committee
West Haven
June Tamkin
Radiation Safety Officer
Gary Toczylowski
Director HES
Richard Toni
VP Materials/Operations
Gerald Rossenberg
Sr. VP Marketing & Sales
David Ebsworth
President/CEO Pharma NA
Gary Wilson
Chairman RSC &
Dir. Science & Tech.
Anthony Aceto
Assoc. Dir. Research Ops.
Michael Berendt
Sr. VP Research
William Carley
Staff Scientist
Brian Dixon
Assoc. Dir. Osteoporosis
Joseph Catino
VP Dept. Cancer & Osteo.
Edward Hunnicutt
Prin. Assoc. Res. Scientist
William Stirtan
Sr. Staff Scientist
Paul Sweetnam
Director Research Tech.
Suresh Katti
Sr. Staff Scientist
David Campbell
Dir. Medicinal Chemistry
William Schoen
Director Chemistry Res.
Jim Landro
Staff Scientist
Paul Sweetnam
Director Research Tech.
Peter Perrino
Sr. Research Scientist
Anita Shah
Dir. Pharmacokinetics
& Drug Metabolism
Allen Heller
VP Preclinical Drug Dev.
Lawrence Posner
Sr. VP Pharma Devlopment
Daniel Rabin
Sr. Staff Scientist
James Livingston
Dir. Of Diabetes
John Amatruda
VP Dept. Diabetes/Obes.

LAB SURVEYS

LABS	DATE	COMMENTS
RA-269	12/14/98	RW
RA-205	10/8/98	JT
RA-COMMON	12/17/98	RW
RA-105D,F,G	12/14/98	FG,(RW)
RA-160A,B,C	12/31/98	PB
RA-204	10/7/98	JT
RA-204A	10/7/98	ANIMAL
RA-204B	10/7/98	JT
RA-209	3/5/99	SD
RA-210	3/5/99	PB
RA-211	5/11/98	DECOMMISSIONED
RA-211TC	3/1/99	PB
RA-212	11/12/98	
RA-212A	11/12/98	SD
RA-213	3/9/99	SD
RA-216	12/21/98	SD
RA-217	12/11/98	PB
RA-219	12/11/98	PB
RA-221	3/2/99	PB
RA-251	3/1/99	PB
RA-257	12/12/98	RW
RA-259	10/9/98	RW
RA-260	3/5/99	SD
RA-262	11/7/98	JT
RA-264	3/2/99	PB
RA-267	12/12/98	RW

LABS	DATE	COMMENTS
RA-306	10/9/98	SD
RA-309	10/8/98	RW
RA-311	10/9/98	RW
RA-313	12/21/98	RW
RA-316	10/12/98	SD
RA-317	10/8/98	RW
RA-319	12/15/98	RW
RA-321	12/15/98	RW
RA-323	12/21/98	SD
RA-357	10/10/98	SD
RA-360	10/12/98	SD
RA-364	10/8/98	RW
RA-367	12/10/98	PB
RA-369	12/10/98	PB
RB-COMMON	12/17/98	RW
RB-008A	12/8/98	FG, (RW)
RB-010B	12/7/98	FG, (RW)
RB-010C	12/8/98	FG, (RW)
RB-012B	12/8/98	FG, (RW)
RB-014X	12/8/98	FG, (RW)
RB-015	12/16/98	RW
RB-107	10/13/98	
RB-107C	10/8/98	
RB-109	10/12/98	
RB-109C	10/8/98	
RB-111	5/15/98	DECOMMISSIONED
RB-113	11/17/98	DECOMMISSIONED
RB-115	10/8/98	

LABS	DATE	COMMENTS
RB-115C	10/8/98	
RB-117	10/13/98	
RB-117C	10/8/98	
RB-121	10/12/98	
RB-121A	10/12/98	
RB-121B	10/12/98	
RB-123	10/8/98	SD
RB-131	12/5/98	
RB-169A,B	12/30/98	PB
RB-205	10/8/98	SD
RB-207	3/8/99	PB
RB-207C	3/8/99	PB
RB-209	6/25/98	DECOMMISSIONED
RB-211	3/8/99	PB
RB-211C	3/8/99	PB
RB-212	12/5/98	PB
RB-212C	12/5/98	PB
RB-213	12/10/98	PB
RB-213C	12/10/98	PB
RB-214	10/24/98	
RB-214C	11/7/98	
RB-215	12/22/98	
RB-217	10/12/98	
RB-219	10/31/98	
RB-219C	10/12/98	
RB-220	10/13/98	
RB-221	10/13/98	
RB-221C	10/12/98	

LABS	DATE	COMMENTS
RB-222	10/24/98	
RB-222C	12/5/98	
RB-224	12/9/98	RW
RB-231	10/31/98	
RB-232	10/31/98	
RB-234 (TC)	12/5/98	SD

Date	Name	PI	cpm thy.	cpm bkg	MDA	nCi	Reason
12/8/95		—	43	39	58	0	Post Iodination
12/8/95			48	37	55	0	Post Iodination
12/14/95			44	39	58	0	Pre Iodination
12/14/95			39	36	54	0	Pre Iodination
12/18/95			48	35	53	0	Post Iodination
12/18/95			44	33	50	0	Post Iodination
1/23/96			36	37	55	0	Pre Iodination
1/24/96			50	37	55	0	Post Iodination
2/26/96			49	33	50	0	Pre-Iodination
2/27/96			41	37	55	0	Post-Iodination
6/6/96			53	45	65	0	Pre-Iodination
6/7/96			46	54	76	0	Post-Iodination
7/22/98			138	135	170	0	Pre-Iodination
7/30/98			137	117	149	0	Post Iodination

Cmp

46

THYROID MONITORING

NAME: [redacted] DATE: 7/30/98

Ex 6

SOCIAL SECURITY [redacted]

PRINCIPAL INVESTIGATOR: —

DEPARTMENT: Cancer

RADIONUCLIDE USED: I-125 (Post-Iodination scan)

DATE WHEN LAST USED IODINE: 7/28/98

COUNTS PER/MINUTE -THYROID: 137

COUNTS PER/MINUTE -BACKGROUND: 117

EFFICIENCY: 0.059 cpm/dpm

DPM: 0

Critical Count: 149

Nanocurie(s): 0

Ex 6

[redacted] 7/30/98

(Signature) (Date)

Forms/Thyroid.wpd 6/9/97

```
old.  8: where upper(isotope_symbol)=upper('&2')
new   8: where upper(isotope_symbol)=upper('35s')
```

RADIOISOTOPE CONTAINER SUMMARY FOR 35s

Inv#	Rec'd On	Init.Amt	Curr.Amt (mCi)	Owner	PI
5537	27-SEP-95	1	1	WILHELMS	WILHELMS
8030	20-AUG-97	1	~~1~~	~~HAMMOND~~	WIRAK
8917	09-MAR-98	1	1	LYGA	VASAVADA
10839	03-FEB-99	1	1	KEIPER	CLAIRMONT (B24)
10962		1	1	KEIPER	CLAIRMONT
10649	29-DEC-98	1	1	KEIPER	CLAIRMONT
10417	06-NOV-98	1	1	BLUE	BLUE
10846	08-FEB-99	1	.94	DZIUBA	WIRAK (B31) 3rd ~~II~~
9666	03-AUG-98	1	.82	DZIUBA	WIRAK
8434	08-DEC-97	.5	.5	MAYSM	BLOOMQUIST
10066	21-SEP-98	.5	.5	GOREWILLSE	DAVISAAN
10287	21-OCT-98	.5	.5	MARRERO	~~EUSTICE~~ Osterman (35S)
10283	21-OCT-98	.5	.45	KASPER	GALLO
5145	28-JUN-95	1	.4	WILHELMS S.	WILHELMS ~~II~~ (B31)
5469	11-SEP-95	.4	.4	~~BARNETT~~	~~BARNETT~~ JTP
2630	07-JUN-93	.25	.25	~~GRUSKIN~~	~~MCCLELLAND~~
7882	21-JUL-97	.25	.25	~~WALLACE~~	~~YOUNG~~ T. Housley
9533	08-JUL-98	.25	.25	WATERBURY	DAS-k
7021	04-DEC-96	.25	.24	SARR	BRUEGGEMEIER
3434	08-MAR-94	.25	.19	~~SEPERACK~~	~~SEPERACK~~ Rong Hong Inst. cancer
2506	26-APR-93	.25	.17	~~SEPERACK~~	~~SEPERACK~~
7823	02-JUL-97	.5	.13	~~HAMMOND~~	WIRAK
2760	15-JUL-93	.25	.12	~~GRUSKIN~~	~~MCCLELLAND~~
8283	05-NOV-97	.1	.1	FU	BLUE (B31)
2761	15-JUL-93	.25	.05	~~GRUSKIN~~	~~MCCLELLAND~~
7301	04-MAR-97	.05	.05	KENNURE	~~BARBOSA~~
10213	08-OCT-98	.05	.05	ALTMAN	WIRAK
5560	29-SEP-95	.05	.025	~~VALDEZ~~	~~SCUDERI~~
5640	19-OCT-95	.05	.025	~~VALDEZ~~	~~SCUDERI~~
2496	22-APR-93	.25	.015	~~GRUSKIN~~	~~MCCLELLAND~~
2641	01-JUL-93	.013	.013	~~BARNETT~~	~~BARNETT~~

31 rows selected.

Tracer? 210

9613	21-JUL-98	.25	.25	CARLEY	CARLEY
7533	14-APR-97	.25	.25	SARR	BRUEGGEMEIER
7358	24-FEB-97	.25	.25	JACKSON	WIRAK
7094	18-DEC-96	.25	.25	VELAZQUEZ	BLOOMQUIST
6983	18-NOV-96	.25	.25	VELAZQUEZ	BLOOMQUIST
6756	23-SEP-96	.25	.25	SARR	BRUEGGEMEIER
6687	09-SEP-96	.25	.25	SARR	BRUEGGEMEIER
6616	12-AUG-96	.25	.25	SARR	BRUEGGEMEIER
5865	10-JAN-96	.25	.25	SHRIKHANDE	BHARGAVA
8314	12-NOV-97	.25	.25	SARR	BRUEGGEMEIER
6007	21-FEB-96	.25	.25	SHRIKHANDE	BHARGAVA
6105	25-MAR-96	.25	.25	ARRANDALE	RABIN
6385	28-MAY-96	.25	.25	BARNETT	BARNETT
6418	07-JUN-96	.25	.25	SHRIKHANDE	BHARGAVA
6445	21-JUN-96	.25	.25	SHRIKHANDE	BHARGAVA
7486	25-MAR-97	.25	.15	JACKSON	WIRAK
7548	21-APR-97	.25	.1	JACKSON	WIRAK
7300	10-FEB-97	.25	.05	JACKSON	WIRAK

72 rows selected.

```
old   8: where upper(isotope_symbol)=upper('&2')
new   8: where upper(isotope_symbol)=upper('32p')
```

RADIOISOTOPE CONTAINER SUMMARY FOR 32p

Inv#	Rec'd On	Init.Amt	Curr.Amt	Owner	PI
6462	01-JUL-96	1	1	HULL	YOOWARREN-k
6948	11-NOV-96	1	1	HULL	YOOWARREN-k
7132	06-JAN-96	1	1	HULL	YOOWARREN-k
7347		1	1	VELAZQUEZ	BLOOMQUIST
8435	08-DEC-97	1	1	MAYSM	BLOOMQUIST
8396	25-NOV-97	1	1	MAYSM	BLOOMQUIST
9796	31-AUG-98	1	1	MACDOUGALL	LIVINGSTON
9831	01-SEP-98	1	1	LYGA	VASAVADA
9832	01-SEP-98	1	1	CARLEY	CARLEY
10612	09-DEC-98	1	1	VANDENBERG	ROSSOMANDO
10389	04-NOV-98	1	1	VANDENBERG	ROSSOMANDO
10230	14-OCT-98	1	1	VANDENBERG	ROSSOMANDO
10218	09-OCT-98	1	1	LIVINGSTON	LIVINGSTON
9830	01-SEP-98	1	1	LYGA	VASAVADA — (B31)
7393	05-MAR-97	.5	.5	MAYSM	BLOOMQUIST
9333	27-MAY-98	.5	.5	LYGA	VASAVADA
10571	02-DEC-98	.5	.5	CARLEY	CARLEY
10959		.5	.5	DAVISAAN	DAVISAAN
10919	24-FEB-99	.5	.5	DAVISAAN	DAVISAAN
10401	04-NOV-98	.5	.5	LYGA	VASAVADA
10062	15-SEP-98	.5	.5	CARLEY	CARLEY (B31) - S. Phan
10106	22-SEP-98	.5	.5	CARLEY	CARLEY
9600	20-JUL-98	.5	.5	WITMAN	CLAIRMONT
7869	17-JUL-97	.5	.5	MAYSM S.	BLOOMQUIST (B24) *
9827	02-SEP-98	.5	.45	WITMAN	CLAIRMONT (B24)
10847	08-FEB-99	.5	.44	DAVISAAN	DAVISAAN
5756	21-NOV-95	.25	.25	SHRIKHANDE	BHARGAVA
5766	27-NOV-95	.25	.25	SHRIKHANDE	BHARGAVA
5769	27-NOV-95	.25	.25	FENG	GREGOR
5800	12-DEC-95	.25	.25	SHRIKHANDE	BHARGAVA
5808	12-DEC-95	.25	.25	SHRIKHANDE	BHARGAVA
5827	20-DEC-95	.25	.25	SHRIKHANDE	BHARGAVA
5856	04-JAN-96	.25	.25	SHRIKHANDE	BHARGAVA
6496	09-JUL-96	.25	.25	SHRIKHANDE	BHARGAVA
6471	02-JUL-96	.25	.25	BLUE	BLUE
10928	01-MAR-99	.25	.25	GOREWILLSE	DAVISAAN
10877	12-FEB-99	.25	.25	CARLEY	CARLEY
10664	05-JAN-99	.25	.25	CARLEY	CARLEY
10482	17-NOV-98	.25	.25	CARLEY	CARLEY
10257	13-OCT-98	.25	.25	CARLEY	CARLEY
10201	06-OCT-98	.25	.25	CARLEY	CARLEY
10173	30-SEP-98	.25	.25	CARLEY	CARLEY
9535	29-JUN-98	.25	.25	LYGA	VASAVADA

RADIOISOTOPE CONTAINER SUMMARY FOR 32p

Inv#	Rec'd On	Init.Amt	Curr.Amt	Owner	PI
9439		.25	.25	LYGA	VASAVADA
9317	19-MAY-98	.25	.25	CARLEY	CARLEY
9291	18-MAY-98	.25	.25	BIANCA (P.L.)	TAMKIN
9204	24-APR-98	.25	.25	MAYSM	BLOOMQUIST
9181	17-APR-98	.25	.25	CARLEY	CARLEY
8916	09-MAR-98	.25	.25	LYGA	VASAVADA
8893	04-MAR-98	.25	.25	LYGA	VASAVADA
9789	25-AUG-98	.25	.25	CARLEY	CARLEY
9788	25-AUG-98	.25	.25	CARLEY	CARLEY
9727	12-AUG-98	.25	.25	CARLEY	CARLEY
9708	07-AUG-98	.25	.25	GREGOR	GREGOR

RADIOISOTOPE STATUS SUMMARY

TAG	LICENSE LIMIT	AMOUNT ON-SITE	AMOUNT IN PROCESS
123I	50.000	.000	.000
125I	1000.000	21.600	.910
131I	1000.000	.000	.000
14C	5000.000	55.290	1.080
153Gd	10.000	.000	.000
32P	10000.000	41.190	5.000
33P	10000.000	30.490	3.750
35S	10000.000	23.200	1.800
36Cl	10.000	.000	.000
3H	5000.000	213.680	3.970
42K	100.000	.000	.000
45Ca	350.000	1.000	.000
51Cr	100.000	.000	.000
55Fe	100.000	.000	.000
86Rb	100.000	.000	.000

15 rows selected.

1998 - Research Safety Training Efforts

I. New BRC Employee Training - (3.0hr)
Radiation Safety - 1.5hr
Bloodborne Pathogen - 0.75hr
Chemical Hygiene Plan - 0.75hr

II. Radiation Safety Video Training - 1hr

III. Radiation Safety Training - Contractor, Distribution, Utilities, Individual - 1hr

IV. Radiation Safety Training - Departmental/Group Sessions - 1.5hr

V. " " " - Non-Research - 1.0hr

VI. " " " - Biennial Refresher - 1.5hr

VII. New BRC Employee BBP & Chemical Hygiene Training - 2.0hr

VIII. " " " NRC Security Checklist -

Category #	Hours/Session	Total# of Sessions	Total# of Individuals Trained
I.	1.5	12	132
II.	1.0	6	11
III.	1.0	11	18
IV.	1.5	25	460
V.	1.0	4	91
VI.	1.5	2	20
VII.	2.0	12	(132) duplicated
VIII.	0.25	N/A	814
			1546

Inventory of Ni-63 sources that were surveyed on ~~8/4/98~~ 1/29/99 RGW

	Source Manufacturer	Serial #	Activity	Location
T	Varian	B691	8mCi	A21-124
T	Perkin-Elmer	1604	15mCi	A21-219
T	Varian	B117	15mCi	A21-124
T	Varian	A1882	8mCi	A21-124
T	Varian	B231	15mCi	A21-124
T	Varian	A2341	15mCi	A21-124
T	Varian	A10627	15mCi	A21-124
T	CJ Brugn Co.	T799	15mCi	A21-124
T	Varian	A3772	8mCi	A21-124
T	H.P.	F4928	15mCi	B24-117c
T	H.P.	K1461	15mCi	B31-251

Next leak test date for the above sources is on or before ~~2/4/99~~ 7/29/99 RGW

RGW = Ronald G. Wallace
RONALD G. WALLACE

T = Tested

MANUFACTUR	SERIAL#	PROBE	LOCATION	RS#	CAL DATE	CAL DUE	COMMENTS
NOTES		44-9 / 44-3					DATE OF LAST MODIFICATION: 3/5/99
EBERLINE PRM-6	847	n/a	RB 008A	#9A	5/18/98	5/18/99	
EBERLINE ASP-1	3264		RB-115,117		6/10/98	6/10/99	
EBERLINE E-120-E	9233	n/a	RB 008A		7/24/98	7/24/99	
DOSIMETER	9704.004	9704.044	RA-313,212		12/3/98	12/3/99	Hong Rong
EBERLINE E-120	11839	n/a	RA-257		1/26/99	1/26/2000	under hood on right
KEITHLEY 36150	41282		RB 008A	# 5	11/2/98	11/2/99	RS
LUDLUM 2	52109		RA-262,267		7/22/98	7/22/99	SENG
LUDLUM 3	54605		RA-321		4/14/98	4/14/99	
LUDLUM 3	55085		RA-309		1/13/99	1/13/2000	
LUDLUM 2	55556		RA-257		9/18/98	9/18/99	
LUDLUM 2	55582		RB 008A	# 75	5/29/98	5/29/99	
LUDLUM 3	55588		RA-269		11/2/98	11/2/99	BLUE
LUDLUM 2	55620	- / -	RB-213?		12/3/98	12/3/99	44-7:44461
LUDLUM 2	55624	- / -	RB 008A		1/12/99	1/12/2000	44-7:44460
KEITHLEY 36150	59799		RB 012B	# 13	4/19/98	4/19/99	
LUDLUM 3	62610		RA-210		9/18/98	9/18/99	
LUDLUM 3	65866	56583/ -	RA-209	# 40	1/12/99	1/12/2000	NIEDBALA
KEITHLEY 36150	69412	-	RB 008A	# 25	11/2/98	11/2/99	
LUDLUM 3	69926	- /62169	RA-269		1/14/98	1/14/99	44-7:62168 @RSA 3/3/99
LUDLUM 3	70988		RB 008A	# 12A	1/13/98	1/13/99	44-7: 063572 @RSA 3/3/99
LUDLUM 3	71432	- /63666	RB 008A	# 11A	12/3/98	12/3/99	RS
LUDLUM 3	79113		RA-360		1/13/98	1/13/99	@RSA 3/3/99
LUDLUM 3	81267		RA-319		5/29/98	5/29/99	
LUDLUM 3	82330	075886/100032	RB 008A		1/12/99	1/12/2000	
KEITHLEY	84038		RB 008A	# 151	10/14/98	10/14/99	RS
KEITHLEY	84044		RB 012B	# 152	10/14/98	10/14/99	RS
LUDLUM 3	92075		RB-220		10/31/98	10/31/99	NORI
LUDLUM 18	95388	94700/94701	RB 014X	# 1	1/12/99	1/12/2000	RS
LUDLUM 18	95397	94698/118951	RB 008A	# 2	1/28/99	1/28/2000	RS
LUDLUM 3	96412		RB-220		10/31/98	10/31/99	NORI
LUDLUM 3	97406	- / -	RB 008A	# 74	12/6/98	12/6/99	RS - Cal'd for mR/hr 44-7: 96700
LUDLUM 3	97903		RA-321		10/13/98	10/13/99	WIRAK

MANUFACTUR	SERIAL #	PROBE	LOCATION	RS #	CAL DATE	CAL DUE	COMMENTS
LUDLUM 3	97916		RA-319		11/2/98	11/2/99	
LUDLUM 3	97950	096630/-	RA-219		2/16/99	2/16/2000	FRACASSO
LUDLUM 3	99347		RB-232, 221		9/18/98	9/18/99	LIVINGSTON
LUDLUM 3	99500		RB-221		10/31/98	10/31/99	LIVINGSTON
LUDLUM 3	99857		RB-214		10/31/98	10/31/99	BLOOMQUIST
LUDLUM 500	100282		RB 008A	# 4	7/24/98	7/24/99	Radiation Safety Pulser
LUDLUM 2200	102810		RB 008A	# 9	7/24/98	7/24/99	Radiation Safety Scaler/Ratemeter
LUDLUM 3	103585		RB 008A	# 3	4/19/98	4/19/99	RS
LUDLUM 3	103633		RA-269		6/10/98	6/10/99	JORDAN
LUDLUM 3	103638		RB-212		11/2/98	11/2/99	
LUDLUM 9	104652		?	# 11	5/18/98	5/18/99	RS
LUDLUM 9	104664		RB 012B	# 12	5/18/98	5/18/99	RS
LUDLUM 9	104667		RB 012B	# 10	5/18/98	5/18/99	RS
LUDLUM 3	104808	104566/ --	RA-267		1/12/99	1/12/2000	says Vasavada
LUDLUM 3	104869	136692/ -	RB 008A	#59	9/18/98	9/18/99	RS
LUDLUM 3	105240				10/31/98	10/31/99	RS
LUDLUM 3	106147	105460/119276		# 14	2/17/98	2/17/99	RS @RSA 3/3/99
LUDLUM 3	106228	105881/ -	RB-219		1/12/99	1/12/2000	ANN DAVIS
LUDLUM 3	107031	107306/108551	RB 131		1/28/99	1/28/2000	
LUDLUM 3	107101			# 9	7/24/98	7/24/99	
LUDLUM 3	107144			# 7	5/18/98	5/18/99	
LUDLUM 3	107227	107421/107620		# 8	1/12/99	1/12/2000	RS Peter's meter
LUDLUM 3	107229	107640/118954	RB 008A	# 6	1/12/99	1/12/2000	RS Fred's Meter
LUDLUM 3	107898				5/29/98	5/29/99	says Gregor
LUDLUM 3	109422	- /010933	RA-357		12/3/98	12/3/99	tag says the 44-3 is a 44-9, cert says it's a 44-3
LUDLUM 3	109600		RB-213		7/17/98	7/17/99	Rossomando Lab
LUDLUM 3	109640		RB-222		4/14/98	4/14/99	SWEET
LUDLUM 3	109830	111145/ -	RB-222		1/26/99	1/26/2000	SWEET
LUDLUM 3	109852	- /150680	RB-212		3/19/98	3/19/99	Being used by Joanne Chen
LUDLUM 3	110200		RA-357		7/17/98	7/17/99	
LUDLUM 3	111800		RA-323		7/17/98	7/17/99	says Greve RA 323 meter
LUDLUM 3	113859		RA 217		7/24/98	7/24/99	ELTING
LUDLUM 3	114252	114674/88864	RB-213 ?		12/3/98	12/3/99	

MANUFACTUR	SERIAL #	PROBE	LOCATION	RS#	CAL DATE	CAL DUE	COMMENTS
LUDLUM 3	115078		RB 008A		7/24/98	7/24/99	
LUDLUM 2200	116596	- /118593	RB 008A	# 10A	5/18/98	5/18/99	
LUDLUM 9	117125		RB 008A	# 22	1/14/98	1/14/99	RS ION CHAMBER @RSA 3/3/99
LUDLUM 9	117138		RB 008A	# 23	1/26/99	1/26/2000	RS
LUDLUM 177	117816		RB 010B	# 24	4/16/98	4/16/99	RS
LUDLUM 3	117902		RA-364/A21?		4/14/98	4/14/99	BRINI/DAVIS
LUDLUM 3	118028	119189/107624	RB 008A	# 17	12/3/98	12/3/99	RS
LUDLUM 3	118046			# 16	5/29/98	5/29/99	
LUDLUM 3	118059		RB 008A	# 15	10/13/98	10/13/99	
LUDLUM 3	118071	119191/105461	RB 015A	# 18	1/28/99	1/28/2000	RS June's meter
LUDLUM 3	118098	(119190)/11895	RB 008A	# 21	12/3/98	12/3/99	RS
LUDLUM 3	118123	118965/118957	LNR RA 269	# 19	10/13/98	10/13/99	RS Roberta's meter
LUDLUM 3	118728	119193/102690	LNR RA 311	# 20	1/13/99	1/13/2000	RS Tc-99
LUDLUM 3	119087	119964/ -	RA-313		1/26/99	1/26/2000	HONG RONG
LUDLUM 3	119262	120623/ -	RA-221		4/16/98	4/16/99	
LUDLUM 177	119723		RB 012B	# 26	5/29/98	5/29/99	
LUDLUM 177	120410		RB 014X	# 27	4/16/98	4/16/99	
LUDLUM 18	120954			# 36	2/18/98	2/18/99	RS @RSA 3/3/99
LUDLUM 177	121900	124755/133576	RB012B	# 30	2/16/99	2/16/2000	RS
LUDLUM 177	121910	104781/133571	RB 012B	# 32	1/28/99	1/28/2000	
LUDLUM 177	121928	124750/133700	RB 012B	# 33	2/16/99	2/16/2000	RS
LUDLUM 177	121959	124760/133710	RB 012B	# 29	2/16/99	2/16/2000	RS
LUDLUM 177	121989	139883/133707	B24 DOCK	# 31	1/28/99	1/28/2000	
LUDLUM 3-97	123186		RB 012B	# 34	2/16/99	2/16/2000	RS 44-38: 128538
LUDLUM 3-97	123195		RB 012B	# 35	2/15/99	2/15/2000	RS 44-38: 128536
LUDLUM 9	123321		RB 012B	# 38	1/26/99	1/26/2000	RS ION CHAMBER
LUDLUM 9	123322		RB 012B	# 37	1/26/99	1/26/2000	RS ION CHAMBER
LUDLUM 9	123340		RB 012B	# 39	1/26/99	1/26/2000	RS ION CHAMBER
LUDLUM 3	124344	129398/ -	RB 012B hd	# 73	1/13/99	1/13/2000	RS package meter in hood
LUDLUM 3	124745		RA-221		6/10/98	6/10/99	
LUDLUM 3	124801		RB-211		7/31/98	7/31/99	CLAIRMONT
LUDLUM 3	127505		RA-213		1/13/99	1/13/2000	TAYLOR/GALLO
LUDLUM 3	133366	138343/ -	RA-216		1/26/99	1/26/2000	WILHELM/HOUSLEY

MANUFACTUR	SERIAL#	PROBE	LOCATION	RS #	CAL DATE	CAL DUE	COMMENTS
LUDLUM 3	133468	138341/ -	RA-369		1/26/99	1/26/2000	HTS
LUDLUM 3	135485	- /138109	RA-357		1/13/99	1/13/2000	HTS
LUDLUM 3	136692	139874/140228	RB 010B refr	# 65	7/31/98	7/31/99	RS also ASM-7 (long handled GM probe)
LUDLUM 3	136824	139759/140234	LNR RA 360	# 62	3/18/98	3/18/99	RS
LUDLUM 3	136836	139738/140222	RB 008A	# 61	3/18/98	3/18/99	RS Rick's meter
LUDLUM 3	136855	139739/140226	?	# 66	3/19/98	3/19/99	RS
LUDLUM 3	136971	139741/140235	RA 210	# 64	3/18/98	3/18/99	RS
LUDLUM 3	137147	139850/140223	RB Waste	# 63	3/18/98	3/18/99	RS Ron's meter
LUDLUM 3	140247		RA 217		7/24/98	7/24/99	ELTING
LUDLUM 3	143810	146338/146279	RB-207		12/3/98	12/3/99	BURNS
LUDLUM 3	144912	147746/151013	RA 311		1/23/98	1/23/99	GEDRICH @RSA 3/3/99
LUDLUM 3	145276	- /142929	RA 360		1/20/98	1/20/99	HTS ROBOTS @RSA 3/3/99
LUDLUM 3	151806	154559/ -	RB-117		11/2/98	11/2/99	