

Conformance with Regulatory Requirements

Sealed Source
Safety Section

Edwin Piner
Brian Smith
December 1990

Table of Contents

A. Background	pg. 1
B. Summary of Findings	pg. 3
C. Inspection Frequencies	pg. 7
D. Detailed Findings by Activity Type	pg. 9
E. Graphs of Findings	pg. 31
F. Examples of Violations	pg. 40

A. Background

In late September 1990, computer printout lists were obtained of active NRC specific and general licensees, mostly industrial, with the primary codes:

- (1) 03110 - Well Logging Byproduct and/or SNM Tracer and Sealed Sources
- (2) 03111 - Well Logging Byproduct and/or SNM Sealed Sources Only
- (3) 03112 - Well Logging Byproduct Only-Tracers Only
- (4) 03120 - Measuring Systems Fixed Gauges
- (5) 03121 - Measuring Systems Portable Gauges
- (6) 03122 - Measuring Systems Analytical Instruments
- (7) 03124 - Measuring Systems Other
- (8) 03211 - Manufacturing and Distribution Broad-Type A
- (9) 03212 - Manufacturing and Distribution Broad-Type B
- (10) 03213 - Manufacturing and Distribution Broad-Type C
- (11) 03214 - Manufacturing and Distribution Other
- (12) 03218 - Nuclear Laundry
- (13) 03234 - Waste Disposal Service Processing and/or Repackaging
- (14) 03240 - General License Distribution 32.51
- (15) 03310 - Industrial Radiography - Fixed Location
- (16) 03320 - Industrial Radiography - Temporary Job-site
- (17) 03511 - Irradiators Other Less Than 10,000 Curies
- (18) 03521 - Irradiators Other Greater Than 10,000 Curies.

Also in late September 1990, computer printouts were obtained of summary reports of inspections of the 18 groups of gauge licensees over the past 7 years. The computer printout provided a list of:

- the name
- report number
- when letter form 591 was issued
- enforcement conference (yes,no)
- severity level
- and a description of the findings.

There were approximately 2,729 inspections of general and specific licensees during that period. Each violation was briefly stated in the report. Many of the licensees were inspected more than once in that period.

B. Summary of Findings

There is a total of 6,356 reports of inspection for the period. A total of 3,627 (57%) of the reports show no violation of regulatory requirements. The other 2,729 (43%) reports each show one or more violations of regulatory requirements resulting in 6,222 violations (averaging 2.3 violations per report). The most frequent violations are:

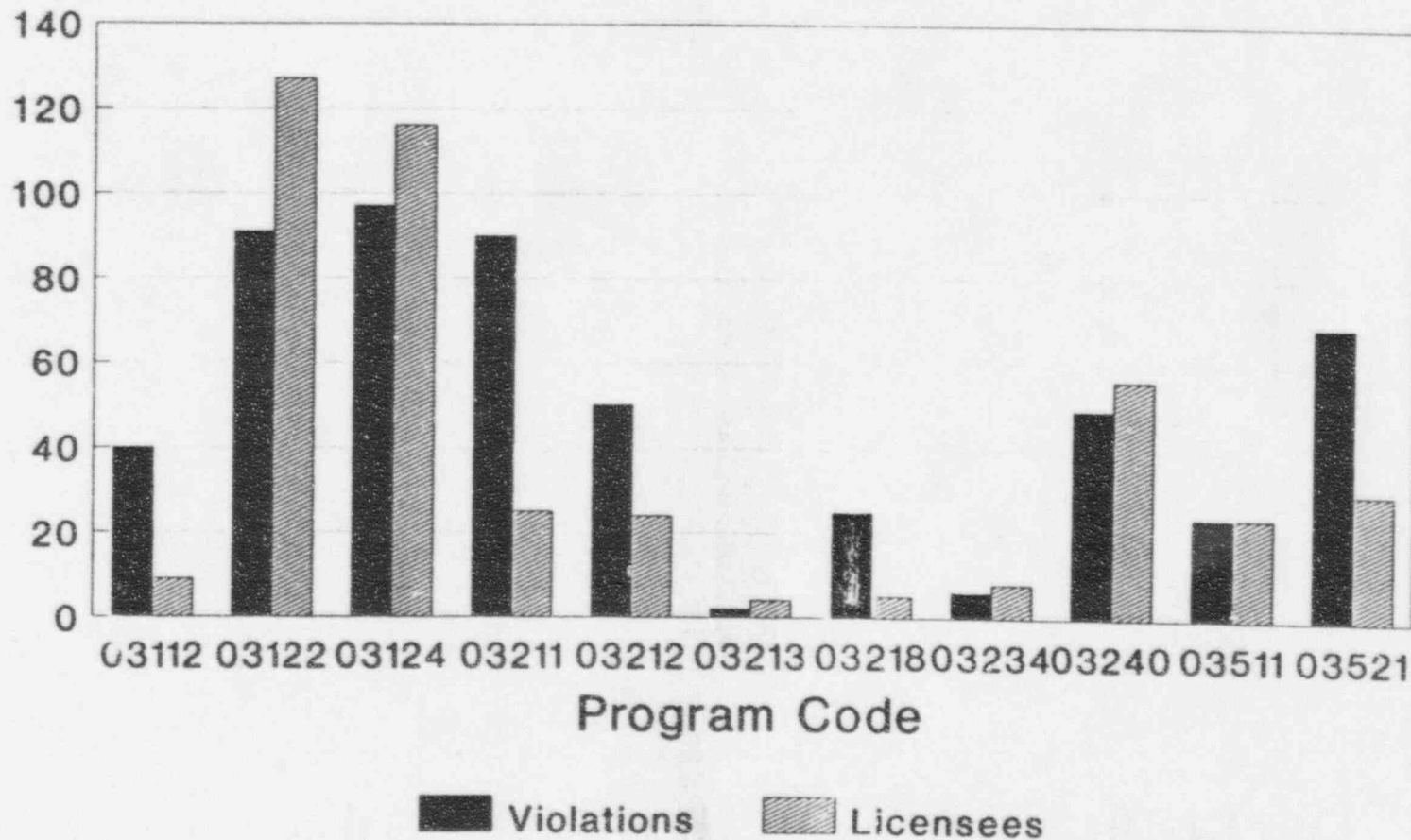
1. Failure to comply with transportation regulations (labeling, secure during transport, approved transport packaging, etc.) - 974 or 16%*
2. Failure to perform and record periodic leak tests as required by license condition - 820 or 13%
3. Failure to perform and record periodic inventory as required by license condition - 606 or 10%
4. Lack of personnel monitoring and records of such - 457 or 7%
5. Failure to post notices to workers as required by 10 CFR 19.11 - 447 or 7%
6. Lack of calibration of survey meters and pocket dosimeters and records of such - 256 or 4%
7. Unauthorized users - 181 or 3%

* Due primarily to portable density gauges.

The following two graphs represent the total number of violations for each program code. The first graph shows only those program codes with less than 100 violations. The second shows only those with greater than 100 violations.

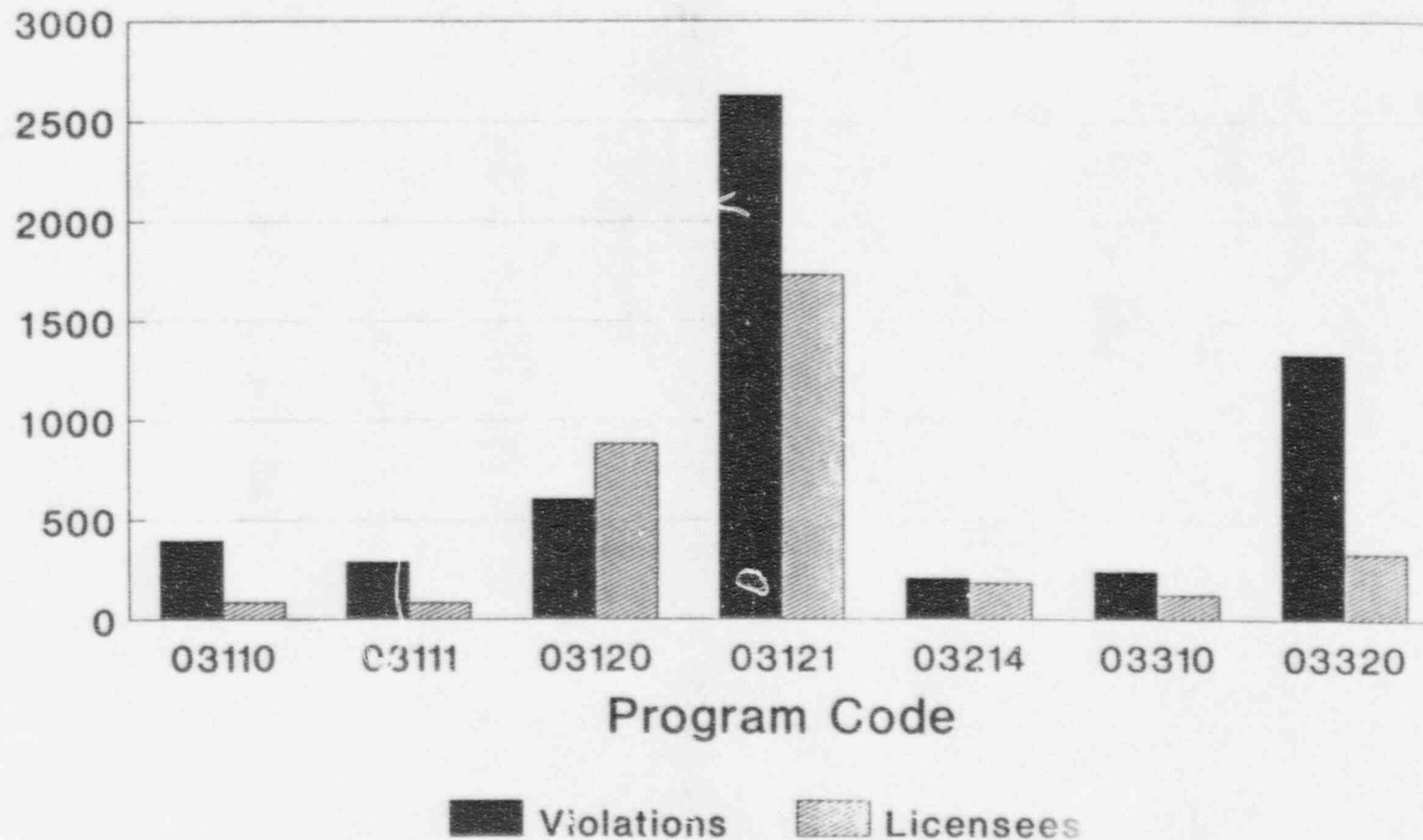
Violations by Program Code

(less than 100 violations)



Violations by Program Code

(greater than 100 violations)



C. Inspection Frequencies

Program Codes

03110
03111
03112
03120
03121
03122
03124
03211
03212
03213
03214
03218
03234
03240
03310
03320
03511
03521

Frequency

3 Years
3 Years
3 Years
5 Years
4 Years
7 Years
7 Years
1 Year
3 Years
5 Years
3 Years
3 Years
1 Year
4 Years
1 Year
1 Year
3 Years
1 Year

D. Detailed Findings by Activity Type

I. Well Logging Byproduct and/or SNM Tracer and Sealed Sources
Program Code 03110

Approximately 85 licenses have been issued for this activity, of which only 45 are currently active. The number of reported inspections from 1984 to the present is 201. There are 90 reports that show no violation of regulatory requirements. Violations are shown in 111 inspection reports.

The following is a breakdown of the types of violations noted in the 111 reports and their frequency of occurrence.

1.	Calibration of survey meters and pocket dosimeters.	36
2.	Surveys (failure to perform, inadequate records)...	36
3.	Leak tests (failure to perform, records).....	30
4.	Labeling/markings of shipping container.....	28
5.	Personnel monitoring (film badges, records, etc.)..	25
6.	Shipping papers (10 CFR 71.5, 172.203, 172.800, 177.817).....	25
7.	Inventory (failure to perform, records).....	22
8.	Posting (10 CFR 19.11).....	18
9.	Failure to conduct audits/reviews/inspections.....	17
10.	Unauthorized users.....	16
11.	Record of safety evaluation for type 7A packaging..	16
12.	Record of safety evaluation for special form.....	16
13.	Procedures for pickup, receiving, and/or opening of packages.....	10
14.	Approved operating procedures not followed.....	9
15.	Training and records of training.....	9
16.	Unauthorized use or storage location.....	9
17.	Posting of storage location.....	7
18.	Failure to use approved survey meter.....	7
19.	Records of receipt, transfer and disposal.....	6
20.	Radiation safety officer.....	6
21.	Operating and emergency procedures.....	6
22.	Unrestricted area radiation levels(20.105).....	6
23.	Unauthorized possession.....	5
24.	Failure to maintain utilization log.....	5
25.	Approved transport package.....	4
26.	Reports not sent to commission as required.....	3
27.	Failure to have copy of safety requirements for well logging.....	3
28.	Unsecured storage.....	3
29.	Overexposure.....	2
30.	Failure to obtain a license.....	2
31.	Radiation area or radioactive materials signs.....	2
32.	Labels on source holder not visible and durable....	2
33.	Agreement with well owners(39.15).....	1
34.	Failure to secure in unrestricted area (20.207(a)).	1
35.	Secure during transport.....	1
36.	Failure to verify transferee's authority to receive	1
Total Violations =		395

Average # of violations per report with violations - 3.56/report

II. Well Logging Byproduct and/or Sealed Sources Only
Program Code 03111

Approximately 79 licenses have been issued for this activity, of which only 52 are currently active. The number of reported inspections from 1984 to the present is 145. There are 53 reports that shows no violation of regulatory requirements. Violations are shown in 92 inspection reports.

The following is a breakdown of the types of violations noted in the 92 reports and their frequency of occurrence.

1.	Marking/labeling of shipping container.....	26
2.	Calibration of survey meter and pocket dosimeter....	25
3.	Shipping papers (10 CFR 19.12, 172.203, 172.800, 177.817).....	23
4.	Inventory (failure to perform, inadequate records)..	23
5.	Surveys (failure to perform, inadequate records)....	22
6.	Leak tests (failure to perform, records).....	20
7.	Personnel monitoring (film badges, records).....	17
8.	Record of safety evaluation for type 7A package.....	17
9.	Unauthorized use or storage location.....	16
10.	Posting (10 CFR 19.11).....	12
11.	Record of safety evaluation for special form.....	10
12.	Failure to conduct annual audit/inspection.....	8
13.	Unauthorized users.....	7
14.	Radiation safety officer.....	7
15.	Radiation area or radioactive materials signs.....	6
16.	Posting of storage location.....	5
17.	Unrestricted area radiation levels(20.105).....	5
18.	Failure to maintain utilization records.....	5
19.	Unauthorized possession.....	4
20.	Records of receipt, transfer and disposal (30.51)...	4
21.	Training and records of training of users.....	4
22.	Approved operating procedures not followed.....	3
23.	Failure to secure in unrestricted areas.....	3
24.	Failure to report change of address or name.....	3
25.	Reports not sent to commission as required.....	2
26.	QA program for transporting packages.....	2
27.	Agreement with well owners (39.15).....	2
28.	Survey meter availability.....	1
29.	Secure during transport.....	1
30.	Labeling of sealed source.....	1
31.	Failure to possess all of (39.73).....	1
32.	Marking/labeling of storage container.....	1
Total Violations =		286

Average # of violations per report with violations - 3.11/report

III. Well Logging Byproduct Only-Tracers Only
Program Code 03112

Approximately 9 licenses have been issued for this activity, of which only 6 are currently active. The number of reported inspections from 1984 to the present is 21. There are 8 reports that show no violation of regulatory requirements. Violations are shown in 13 inspection reports.

The following is a breakdown of the types of violations noted in the 13 reports and their frequency of occurrence.

1.	Unauthorized use or storage.....	6
2.	Calibration of survey meter and availability.....	5
3.	Surveys (failure to perform, inadequate records).....	4
4.	Personnel monitoring (film badges, records).....	4
5.	Approved operating procedures not followed.....	4
6.	Records of receipt, transfer and disposal (30.51)....	3
7.	Posting (19.11).....	3
8.	Failure to secure in unrestricted areas.....	2
9.	Instructions to workers (10 CFR 19.12).....	2
10.	Labeling of transportation carton.....	2
11.	Labeling of storage area.....	1
12.	Leak test (failure to perform, inadequate records)...	1
13.	Inventory (failure to perform, inadequate records)...	1
14.	Shipping papers (10 CFR 71.5, 172.203, 172.800, 177.817).....	1
15.	Record of safety evaluation of type 7A package (10 CFR 173.476(a) and 173.394(a)).....	1
Total Violations =		40

Average # of violations per report with violations - 3.08/report

IV. Measuring Systems Fixed Gauges
Program Code 03120

Approximately 882 licenses have been issued for this activity, of which only 776 are currently active. The number of reported inspections from 1984 to the present is 992. There are 659 reports that show no violations of regulatory requirements. Violations are shown in 333 inspection reports.

The following is a breakdown of the types of violations noted in the 333 reports and their frequency of occurrence.

1.	Inventory (failure to perform, inadequate records).	117
2.	Leak test (failure to perform, inadequate records).	95
3.	Posting (19.11).....	77
4.	Radiation safety officer.....	32
5.	Calibration of survey meter and pocket dosimeter...	27
6.	Approved operating procedures not followed.....	26
7.	Unauthorized installation, removal, relocation, repair	26
8.	Surveys (failure to perform, records).....	23
9.	Unauthorized user.....	21
10.	Radiation area or radioactive materials signs.....	19
11.	Failure to secure in unrestricted area.....	17
12.	Records of receipt, transfer and disposal (30.51)..	15
13.	Distribution of unlicensed material.....	13
14.	Unauthorized place of use or storage.....	12
15.	Failure to verify transferee's authority to receive (10 CFR 30.41).....	10
16.	Unrestricted area radiation levels.....	9
17.	Personnel monitoring (film badges, records).....	9
18.	Labels on gauges not visible and durable.....	8
19.	Failure to report change of address or name.....	8
20.	Training and records of training for users.....	6
21.	Shipping papers (10 CFR 71.5, 172.203, 172.800, 177.817).....	6
22.	Unauthorized possession.....	6
23.	Instructions to workers (19.12).....	6
24.	Labeling/marketing of storage container.....	3
25.	Survey meter availability.....	2
26.	Record of safety evaluation for type 7A package (10 CFR 173.476(a) and 173.394(a)).....	2
27.	Overexposure (including 20.101).....	1
28.	Failure to notify NRC upon termination of activities involving licensed material.....	1
29.	Incomplete data in 766.....	1
30.	Approved transport package.....	1
31.	Record of safety evaluation for special form.....	1
Total Violations =		601

Average # of violations per report with violations - 1.80/report

V. Measuring Systems Portable Gauges
Program Code 03121

Approximately 1,726 licenses have been issued for this activity, of which only 1,546 are currently active. The number of reported inspections from 1984 to the present is 2,272. There are 1,131 reports that show no violation of regulatory requirements. Violations are shown in 1,141 inspection reports.

The following is a breakdown of the types of violations noted in the 1,141 reports and their frequency of occurrence.

1.	Leak test (failure to perform, inadequate records).	538
2.	Inventory (failure to perform, inadequate records).	355
3.	Shipping papers (10 CFR 71.5, 172.203, 172.800, 177.817).....	306
4.	Posting (19.11).....	278
5.	Personnel monitoring and exposure records.....	193
6.	Unauthorized user.....	113
7.	Unauthorized use or storage.....	100
8.	Unsecured storage or unattended.....	82
9.	Radiation safety officer.....	65
10.	Record of safety evaluation for special form.....	65
11.	Record of safety evaluation for type 7A package....	62
12.	Posting of storage location.....	57
13.	Record of receipt, transfer, and disposal.....	57
14.	Block and brace or secure during transport.....	47
15.	Approved operating procedures not followed.....	39
16.	Training and records of training for users.....	36
17.	Surveys (failure to perform, inadequate records)...	34
18.	Labeling of transportation package.....	29
19.	Calibration of survey meter.....	25
20.	Failure to verify transferee's authority to receive	25
21.	Unauthorized possession.....	21
22.	Unrestricted area radiation levels (20.105(b))....	20
23.	Failure to report change of address or name.....	19
24.	Failure to use approved transport package.....	16
25.	Transport of gauge in vehicle's passenger compartment contrary to application for license.....	11
26.	Instructions to workers.....	9
27.	Unauthorized installation, removal, repair, or relocation.....	6
28.	Labeling of devices.....	5
29.	Timely report of loss or theft.....	5
30.	Timely report of damage.....	4
31.	Overexposure.....	2
32.	Failure to report out of business.....	1

Total Violations = 2,625

Average # of violations per report with violations - 2.30/report

VI. Measuring System Analytical Instruments
Program Code 03122

Approximately 127 licenses have been issued for this activity, of which only 110 are currently active. The number of reported inspections from 1984 to the present is 147. There are 94 reports that show no violation of regulatory requirements. Violations are shown in 53 inspection reports.

The following is a breakdown of the types of violations noted in the 53 reports and their frequency of occurrence.

1.	Leak test (failure to perform, inadequate records) ..	24
2.	Posting (NRC-3, 19.11)	13
3.	Personnel monitoring and exposure records	12
4.	Inventory (failure to perform, inadequate records) ..	9
5.	Approved operating procedures not followed	5
6.	Surveys (failure to perform, inadequate records)	5
7.	Unauthorized user	4
8.	Records of receipt, transfer, and disposal (30.51) ..	4
9.	Unauthorized possession	4
10.	Calibration of survey meter and pocket dosimeters ...	3
11.	Unsecured storage or unattended	3
12.	Posting of storage area	2
13.	Unauthorized place of use	1
14.	Radiation protection officer	1
15.	Failure to verify transferee's authority to receive. 1	
Total Violations =		91
Average # of violations per report with violations - 1.72/report		

VII. Measuring Systems Other
Program Code 03124

Approximately 116 licenses have been issued for this activity, of which only 83 are currently active. The number of reported inspections from 1984 to the present is 153. There are 105 reports that show no violation of regulatory requirements. Violations are shown in 48 inspection reports.

The following is a breakdown of the types of violations noted in the 48 reports and their frequency of occurrence.

1.	Leak test (failure to perform, inadequate records)...	16
2.	Posting (NRC-3, 19.11).....	9
3.	Calibration of survey meter and pocket dosimeters...	7
4.	Inventory (failure to perform, inadequate records)...	7
5.	Approved operating procedures not followed.....	6
6.	Unauthorized users.....	6
7.	Radiation safety officer.....	5
8.	Radiation area or radioactive materials signs.....	5
9.	Unrestricted area radiation levels (20.105(b)).....	4
10.	Personnel monitoring and exposure records.....	4
11.	Failure to secure in unrestricted area.....	4
12.	Records of receipt, transfer, and disposal (30.51)...	3
13.	Records of safety evaluation for type 7A package....	3
14.	Surveys (Failure to perform, records).....	2
15.	Unauthorized possession.....	2
16.	Shipping papers.....	2
17.	Marking/labeling of storage container.....	2
18.	Instructions to workers.....	2
19.	Report not sent to commission.....	1
20.	Labels on gauges not visible and/or durable.....	1
21.	Unauthorized transfer of license.....	1
22.	Survey meter availability.....	1
23.	Failure to verify transferee's authority to receive.	1
24.	Marking/labeling of transport packaging.....	1
25.	Unsecured storage or unattended.....	1
26.	Incomplete data in 766.....	1

Total Violations = 97

Average # of violations per report with violations - 2.02/report

VIII. Manufacturing and Distribution Broad-Type A
Program Code 03211

Approximately 25 licenses have been issued for this activity, of which only 18 are currently active. The number of reported inspections from 1984 to the present is 90. There are 51 reports that show no violation of regulatory requirements. Violations are shown in 39 reports.

The following is a breakdown of the types of violations noted in the 39 reports and their frequency of occurrence.

1.	Approved operating procedures not followed.....	9
2.	Surveys (failure to perform, records).....	8
3.	Personnel monitoring and exposure records.....	7
4.	Failure to secure in unrestricted areas.....	7
5.	Inventory (failure to perform, inadequate records)...	6
6.	Calibration of survey meter and pocket dosimeters....	6
7.	Leak test (failure to perform, inadequate records)...	6
8.	Training and records of training of users.....	5
9.	Overexposures.....	5
10.	Approved transport packaging.....	4
11.	Procedure for safely opening incoming packages not followed.....	4
12.	Unrestricted area radiation levels (20.105(b)).....	4
13.	Radiation area or radioactive materials signs.....	4
14.	Unauthorized users.....	3
15.	Labels on gauges not visible/durable.....	2
16.	Shipping papers.....	2
17.	Failure to verify transferee's authority to receive..	2
18.	Training and records of training for users.....	1
19.	Posting (19.11).....	1
20.	Radiation safety officer.....	1
21.	Unlicensed distribution of radioactive material.....	1
22.	Package transported with >200 mr/h external radiation level (10 CFR 173.441(a)).....	1
23.	Reports not sent to commission as required.....	1
Total Violations =		90
Average # of violations per report with violations - 2.31/report		

IX. Manufacturing and Distribution Broad-Type B
Program Code 03212

Approximately 24 licenses have been issued for this activity, of which only 15 are currently active. The number of reported inspections from 1984 to the present is 47. There are 28 reports that show no violation of regulatory requirements. Violations are shown in 19 inspection reports.

The following is a breakdown of the types of violations noted in the 19 reports and their frequency of occurrence.

1.	Surveys (failure to perform, records).....	11
2.	Personnel monitoring and exposure records.....	7
3.	Calibration of survey meters.....	6
4.	Approved operating procedures not followed.....	4
5.	Incomplete data in 766.....	3
6.	Training and records of training for users.....	3
7.	Posting (19.11).....	2
8.	Leak test (failure to perform, inadequate records)..	2
9.	Radiation area or radioactive materials sign/alarms.	2
10.	Record of safety evaluation for type 7A package.....	2
11.	Record of safety evaluation for special form.....	1
12.	Marking/labeling of shipping container.....	1
13.	Approved transport packaging.....	1
14.	Failure to report change of address or name.....	1
15.	Unrestricted area radiation levels.....	1
16.	Shipping papers.....	1
17.	Failure to secure in unrestricted area.....	1
18.	Distribution of unlicensed material.....	1

Total Violations = 50

Average # of violations per report with violations - 2.63/report

X. Manufacturing and Distribution Broad-Type C
Program Code 03213

Approximately 4 licenses have been issued for this activity, of which only 3 currently active. The number of reported inspections from 1984 to the present is 4. There are 3 reports that show no violation of regulatory requirements. Violations are shown in one inspection report.

The following is a breakdown of the types of violations noted in that one report and their frequency of occurrence.

1. Gauges distributed without leak test and assay certificates	1
2. Survey of incoming packages	<u>1</u>
	Total violations = 2

Average # of violations per report with violations - 2.00/report

XI. Manufacturing and Distribution Other
Program Code 03214

Approximately 180 licenses have been issued for this activity, of which only 131 are currently active. The number of reported inspections from 1984 to the present is 273. There are 174 reports that show no violation of regulatory requirements. Violations are shown in 99 inspection reports.

The following is a breakdown of the types of violations noted in the 99 reports and their frequency of occurrence.

1. Personnel monitoring (film badges not supplied as agreed, records, etc.)	26
2. Surveys (failure to perform, inadequate records) ..	25
3. Approved operating procedures not followed (per license)	22
4. Leak test (failure to perform, inadequate records)	22
5. Calibration of survey instruments and pocket dosimeters	14
6. Inventory (failure to perform, inadequate records)	12
7. Unrestricted area radiation levels (10 CFR 20.105(b), 20.106)	9
8. Failure to verify transferees authority to receive (10 CFR 30.41)	8
9. Unauthorized use or storage location	8
10. Unauthorized possession (exceed possession limits, model not on license, etc.)	7
11. Records of receipt, transfer and disposal (30.51) ..	6
12. Radiation area, radioactive materials signs/alarm ..	5
13. Radiation Safety Officer (gone, replaced, not functioning)	5
14. Postings (10 CFR 19.11)	4
15. Unauthorized user	4
16. Distribution of unlicensed device/material	3
17. Records of Radiation Safety Review (missing, not kept, etc.)	3
18. Audits of records not performed	2
19. Failure to secure in unrestricted area (20.207(a)) ..	2
20. Greater than allowed concentrations of licensed material released into sanitary sewer	2
21. Instructions to workers (10 CFR 19.12)	2
22. Labeling of waste packages	2
23. Labels missing/not legible on devices	2
24. Shipping papers (10 CFR 71.5, 172.203(d), 172.800, 177.817)	2
25. Timely report of loss or theft or overexposure and 10 CFR 19.13(d)	2
26. Failure to close containment system (173.475(f)) ...	1
27. Maintaining utilization log	1

28.	Marking of shipping container	1
29.	Package transported having external radiation levels >200 mr/hr (10 CFR 173.441(a))	1
30.	Record of safety evaluation for Type 7A package (10 CFR 173.476(a) and 173.394(a))	1
31.	Shipping without security seals (173.412(b))	1
	Total violations =	205
Average # of violations per report with violations - 2.07/report		

XII. Nuclear Laundry
Program Code 03218

Approximately 5 licenses have been issued for this activity, of which all 5 are currently active. The number of reported inspections from 1984 to the present is 21. There are 12 reports that show no violation of regulatory requirements. Violations are shown in 9 inspection reports.

The following is a breakdown of the types of violations noted in the 9 reports and their frequency of occurrence.

1. Approved operating procedures not followed (per license)	6
2. Personnel monitoring (film badges not supplied as agreed, records, etc.)	4
3. Records of surveys	3
4. Unrestricted area radiation levels (20.105(b))	2
5. Approved transport packaging	1
6. Calibration of survey meter	1
7. Failure to secure in unrestricted areas (20.207) ...	1
8. Instructions to workers (10 CFR 19.12)	1
9. Labeling of storage container	1
10. Labeling of storage room and ropes	1
11. Labels on gauges not visible and durable (10 CFR 20.203(f))	1
12. Placarding of transport trucks	1
13. Shipping papers (71.5, 172.200 and 177.817)	1
14. Unauthorized possession	1
Total violations = 25	

Average # of violations per report with violations - 2.78/report

XIII. Waste Disposal Service Processing and/or Repackaging
Program Code 03234

Approximately 8 licenses have been issued for this activity, of which only 7 are currently active. The number of reported inspections from 1984 to the present is 23. There are 20 reports that show no violation of regulatory requirements. Violation are shown in 3 inspection reports.

The following is a breakdown of the types of violations noted in the 3 reports and their frequency of occurrence.

1. Personnel monitoring (film badges not supplied as agreed, record, etc.) 2
 2. Labeling of shipping container 1
 3. Shipping papers (71.5, 172.200, 177.817) 1
 4. Survey of compactor used to compact radioactive materials (records of swipe test) 1
 5. Survey of waste handling exhaust air flow 1
- Total violations = 6

Average # of violations per report with violations - 2.00/report

XIV. General License Distribution 32.51
Program Code 03240

Approximately 56 licenses have been issued for this activity, of which only 48 are currently active. The number of reported inspections from 1984 to the present is 88. There are 65 reports that show no violation of regulatory requirements. Violations are shown in 23 inspection reports.

The following is a breakdown of the types of violations noted in the 23 reports and their frequency of occurrence.

1. Reports not sent to commission as required (timely manner, etc.)	13
2. Approved operating procedures not followed	4
3. Inventory (failed to perform, missing records)	4
4. Postings (10 CFR 19.11)	4
5. Radiation area, radioactive materials signs/alarm .	3
6. Surveys (failed to perform, inadequate records) ...	3
7. Calibration of survey meters	2
8. Failure to secure in unrestricted area (20.207(a))	2
9. Leak test (failed to perform, inadequate records) .	2
10. Missing required labels on devices	2
11. Shipping papers (71.5, 172.200 and 177.817)	2
12. Approved transport package	1
13. Copies of reference documents (10 CFR 19.11(a)) ...	1
14. Copies of the general license not provided to transferee	1
15. Distribution of unlicensed device	1
16. Radiation Safety Officer (gone, replaced, not serving, etc.)	1
17. Training and records of training of users	1
18. Unsecured storage or unattended	1
19. Unauthorized transfer of device (10 CFR 31.5)	1
Total violations = 49	

Average # of violations per report with violations - 2.13/report

XV. Industrial Radiography - Fixed Location
Program Code 03310

Approximately 119 licenses have been issued for this activity, of which only 63 are currently active. The number of reported inspections from 1984 to the present is 444. There are 297 reports that show no violation of regulatory requirements. Violations are shown in 147 inspection reports.

The following is a breakdown of the types of violations noted in the 147 reports and their frequency of occurrence.

1. Training and records of training for users	52
2. Surveys (failed to perform, inadequate records) ...	27
3. Leak test (failed to perform, inadequate records) .	18
4. Personnel monitoring (film badges not supplied as agreed, records, etc.)	18
5. Calibration of survey meters and pocket dosimeters	17
6. Report not sent to commission (timely manner, etc.)	14
7. Radiation area, radioactive materials sign/alarm ..	10
8. Failure to document, conduct inspection of device per application	9
9. Reports of termination (10 CFR 20.408)	7
10. Inventory (failed to perform, inadequate records)..	6
11. Postings (10 CFR 19.11)	6
12. Audits (not performed, records missing/inadequate).	5
13. Records of safety evaluation for special form	5
14. Shipping papers (71.5, 172.200 and 177.817)	5
15. Alarm system tests (not performed, records, etc.)..	4
16. Approved operating procedures not followed (per license)	4
17. Radiation Safety Officer (gone, replaced, not functioning)	4
18. Unauthorized user	4
19. Maintain utilization log	3
20. QA program not approved by commission (71.12(b)) ..	3
21. Unsecured storage or unattended	3
22. Approved transport packaging (failure to use, not within application specs, etc.)	2
23. Maintain NRC Certificate of Compliance	2
24. Records of incoming shipments	2
25. Records of maintenance	2
26. Failure to notify RSO in emergency	1
27. Individual could be prevented from leaving a high radiation area (10 CFR 20.203(c)(3))	1
28. Procedure for safely opening packages (20.205(d)).	1
29. Records of receipt (10 CFR 30.51)	1
30. Unauthorized installation, removal, relocation, repair	1
31. Unauthorized possession (exceed possession limits, model not on license, etc.)	1

32. Unrestricted area radiation levels (20.105(b))1
Total violations = 239
Average # of violations per report with violations - 1.63/report

XVI. Industrial Radiography - Temporary Job-site
Program Code 03320

Approximately 331 licenses have been issued for this activity, of which only 193 are currently active. The number of reported inspections from 1984 to the present is 1193. There are 646 reports that show no violation of regulatory requirements. Violations are shown in 547 inspection reports.

The following is a breakdown of the types of violations noted in the 547 reports and their frequency of occurrence.

1. Training and records of training of users	236
2. Surveys (failed to perform, inadequate records) ..	133
3. Personnel monitoring (film badges not supplied as agreed, records, etc.)	124
4. Shipping papers (71.5, 172.200 and 177.817)	91
5. Calibration of survey meters and pocket dosimeters	78
6. Radiation area, radioactive materials sign/alarm .	75
7. Failure to document, conduct inspection of device per application	67
8. Reports not sent to commission as required (timely manner, etc.)	53
9. Inventory (failed to perform, inadequate records).	47
10. Marking of shipping container	47
11. Reports of termination (10 CFR 20.408)	45
12. Leak test (failed to perform, inadequate records).	39
13. Approved operating procedures not followed (per license)	37
*14. Transporting of radioactive material aboard passenger aircraft (10 CFR 173.448(f) et al)	35
15. Approved transport packaging (failure to use, not within application specs, etc.)	33
16. Unrestricted area radiation levels (20.105(b)) ...	33
17. Unsecured storage or unattended (10 CFR 20.207)...	29
18. QA program for transporting packages	24
19. Maintain utilization log	21
20. Maintain NRC Certificate of Compliance	20
21. Overexposure (10 CFR 20.101(a))	20
22. Record of safety evaluation for special form	19
23. Posting (10 CFR 19.11)	18
24. Radiation Safety Officer (gone, replaced, not serving, etc.)	13
25. Surveillance over a radiographic operation not maintained (10 CFR 34.41)	13
26. Failure to notify RSO in emergency	12
27. Secure during transport	12
28. Record of receipt, transfer and disposal	10
29. Unauthorized place of use or storage	9
30. Placarding of transport vehicle	7

31.	Individual could be prevented from leaving a high radiation area (10 CFR 21.203(c)(3))	6
32.	Unauthorized possession (exceed possession limit, wrong model, etc.)	6
33.	Procedure for safely opening packages (20.205(d)).	4
34.	Failure to report change of address or name	3
35.	Failure to verify transferee's authority to receive (10 CFR 30.41(c))	3
36.	Incineration of licensed material (20.305)	1
37.	Record of corporate audit	1
38.	Record of safety evaluation for Type 7A package (10 CFR 173.415)	1

Total violations = 1328

Average # of violations per report with violations - 2.43/report

* All 35 violations are due to one incident by Finlay Testing Labs., Inc. (docket number 03013435) on February 9, 1987.

XVII. Irradiators Other Less Than 10,000 Curie
Program Code 03511

Approximately 24 licenses have been issued for this activity, of which only 19 are currently active. The number of reported inspections from 1984 to the present is 50. There are 37 reports that show no violation of regulatory requirements. Violations are shown in 13 inspection reports.

The following is a breakdown of the types of violations noted in the 13 reports and their frequency of occurrence.

1. Leak test (failed to perform, inadequate records) ..	4
2. Radiation area, radioactive materials sign/alarm ...	3
3. Surveys (failed to perform, inadequate records)	3
4. Unauthorized user	3
5. Failure to document/conduct inspections of device per application (interlocks, etc.)	2
6. Personnel monitoring (film badges not supplied as agreed, records, etc.)	2
7. Calibration of survey meters and pocket dosimeters .	1
8. Calibration range entry control device not routinely tested	1
9. Calibration range operators do not assure radiation levels are <100 mrem/hr	1
10. Failure to maintain operable survey meter	1
11. On/off key maintained in unrestricted area	1
12. Posting (10 CFR 19.11)	1
13. Records of receipt, transfer and disposal	1
Total violations = 24	

Average # of violations per report with violations - 1.85/report

XVIII. Irradiators Other Greater Than 10,000 Curie
Program Code 03521

Approximately 30 licenses have been issued for this activity, of which only 20 are currently active. The number of reported inspections from 1984 to the present is 192. There are 154 reports that show no violation of regulatory requirements. Violations are shown in 38 inspection reports.

The following is a breakdown of the types of violations noted in the 38 reports and their frequency of occurrence.

1. Approved operating procedures not followed (unsupervised use, overexposure, etc.)	27
2. Operation of Irradiator without required interlocks, rad monitors or control cables functioning	7
3. Radiation area, radioactive materials signs/alarms	7
4. Monthly testing/weekly air surveys	6
5. Calibration of rad monitors	3
6. Check pool water (contaminated, level switch, etc.)	3
7. Personnel monitoring and records	3
8. Copy of instructions	2
9. Leak testing/wall tests	2
10. Posting of area radiation levels	2
11. Work permits	2
12. Inventory	1
13. Irradiator up/down log	1
14. Records of totes	1
15. Shipping papers	1
16. Training and records of training for users	1

Total violations = 69

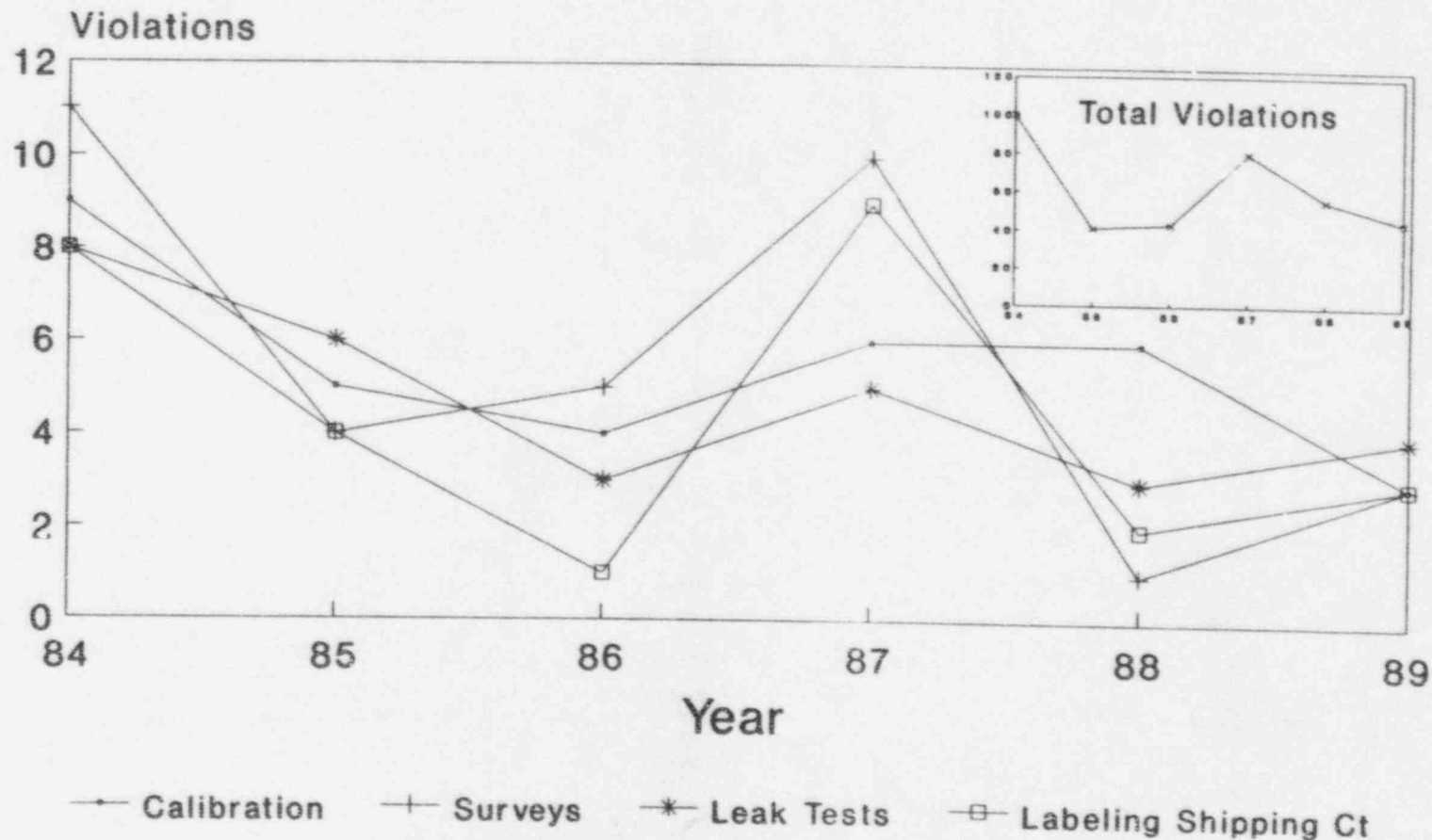
Average # of violations per report with violations - 1.82/report

E. Graphs of Findings

The following graphs represent those program codes with the most violations. The graphs show the number of violations per year for each of the four most common violations for that program code. The small graph inset on each graph represents the total number of violations per year for that program code. The years are from 1984 to 1989. 1990 violations were omitted because the year has not yet ended. As a footnote on each graph, the inspection frequency is listed.

Well Logging Byproduct

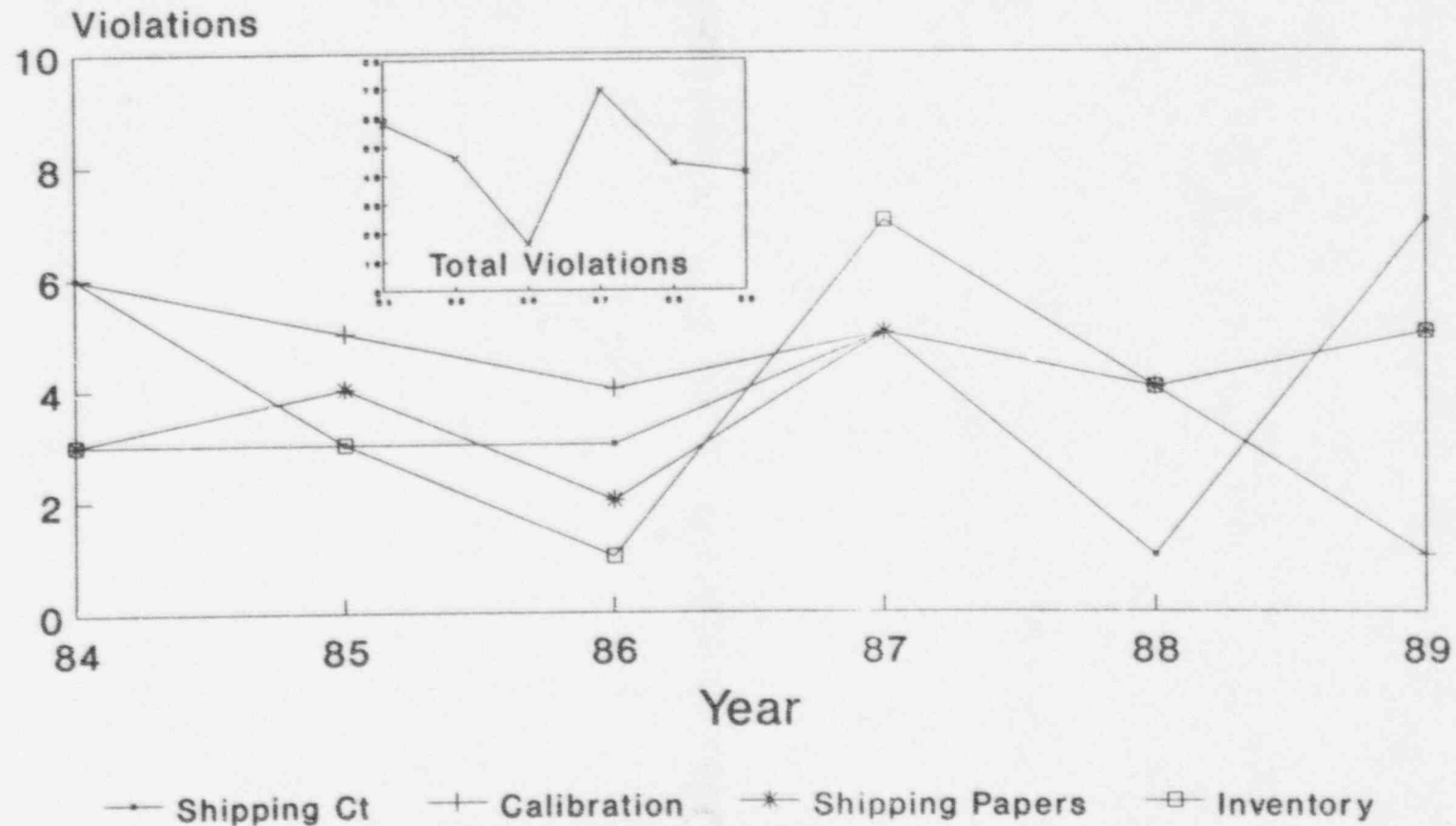
Program Code: 03110



Inspection Frequency: 3 Years

Well Logging Byproduct

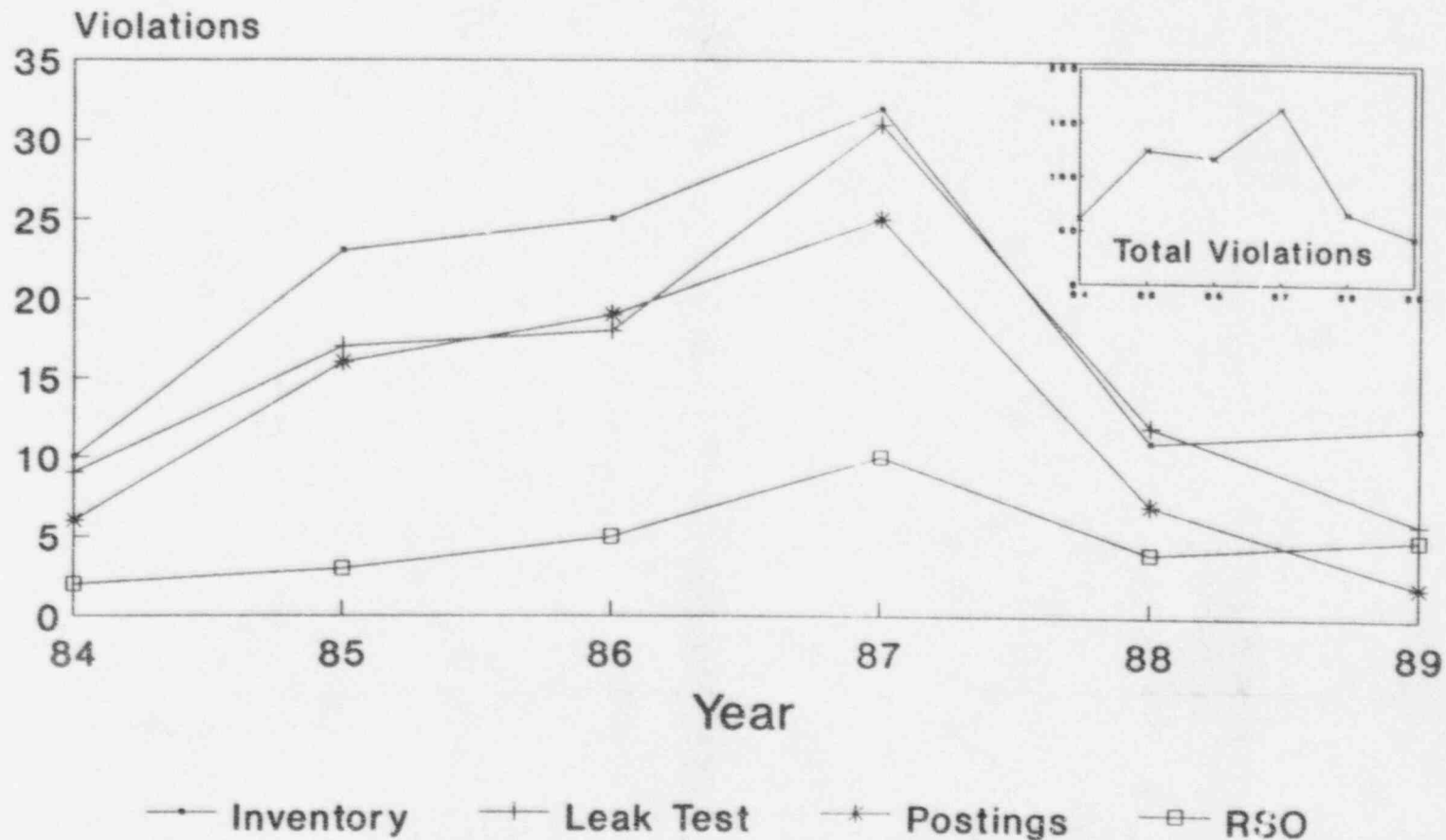
Program Code: 03111



Inspection Frequency: 3 Years

Measuring System Fixed Gauges

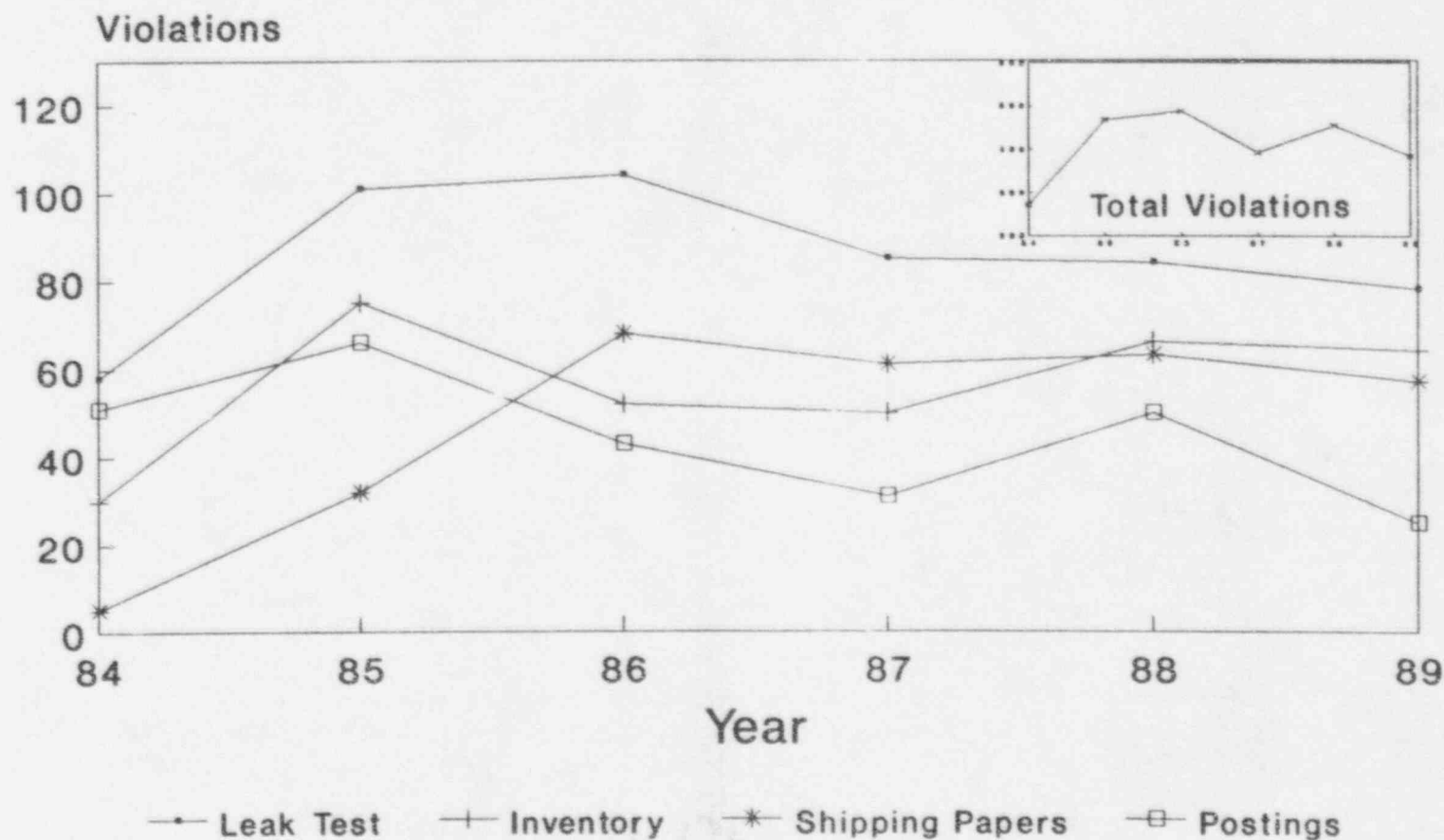
Program Code: 03120



Inspection Frequency: 5 Years

Measuring System Portable Gauges

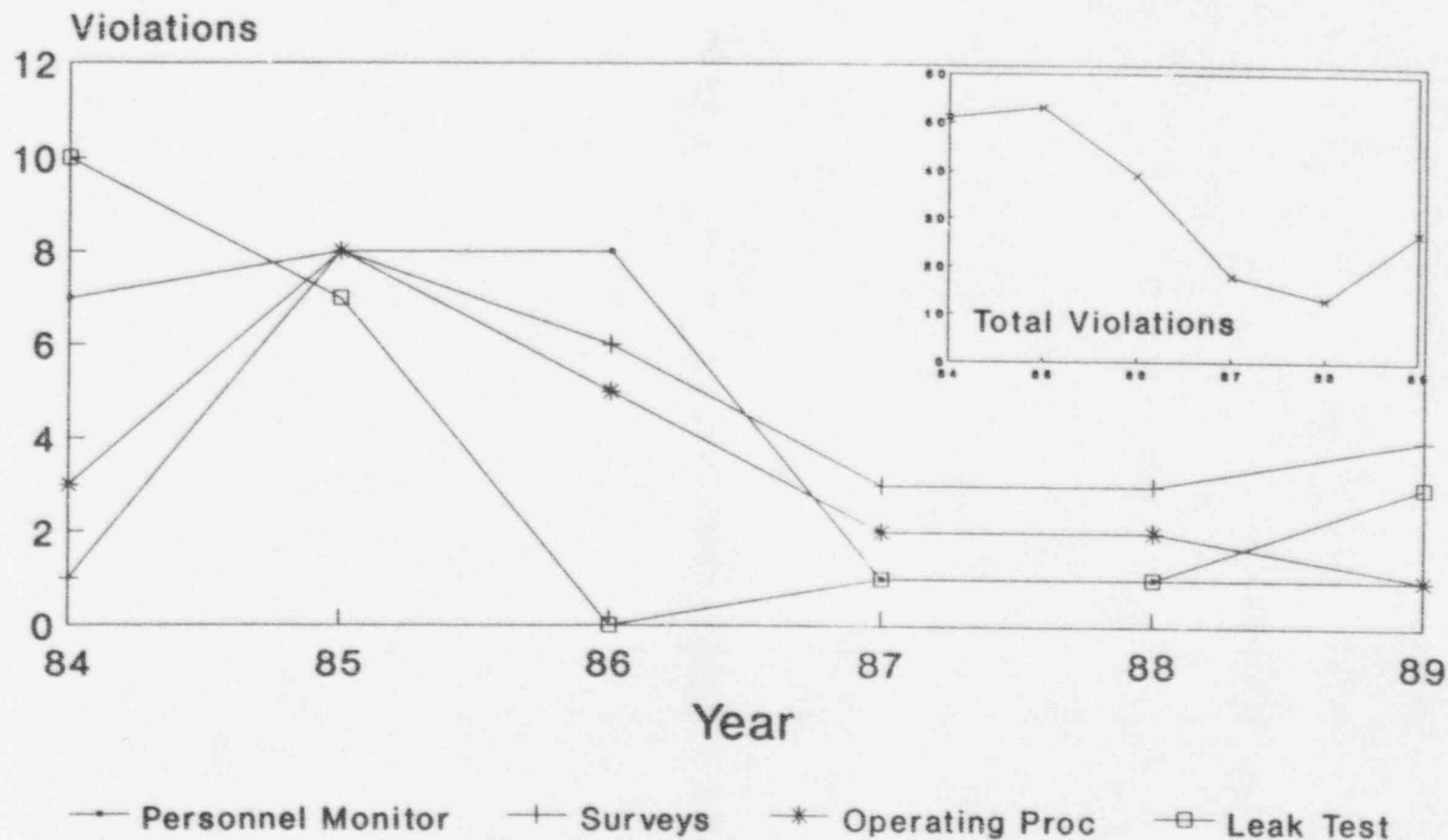
Program Code: 03121



Inspection Frequency: 4 Years

Manufacturing/Distribution Other

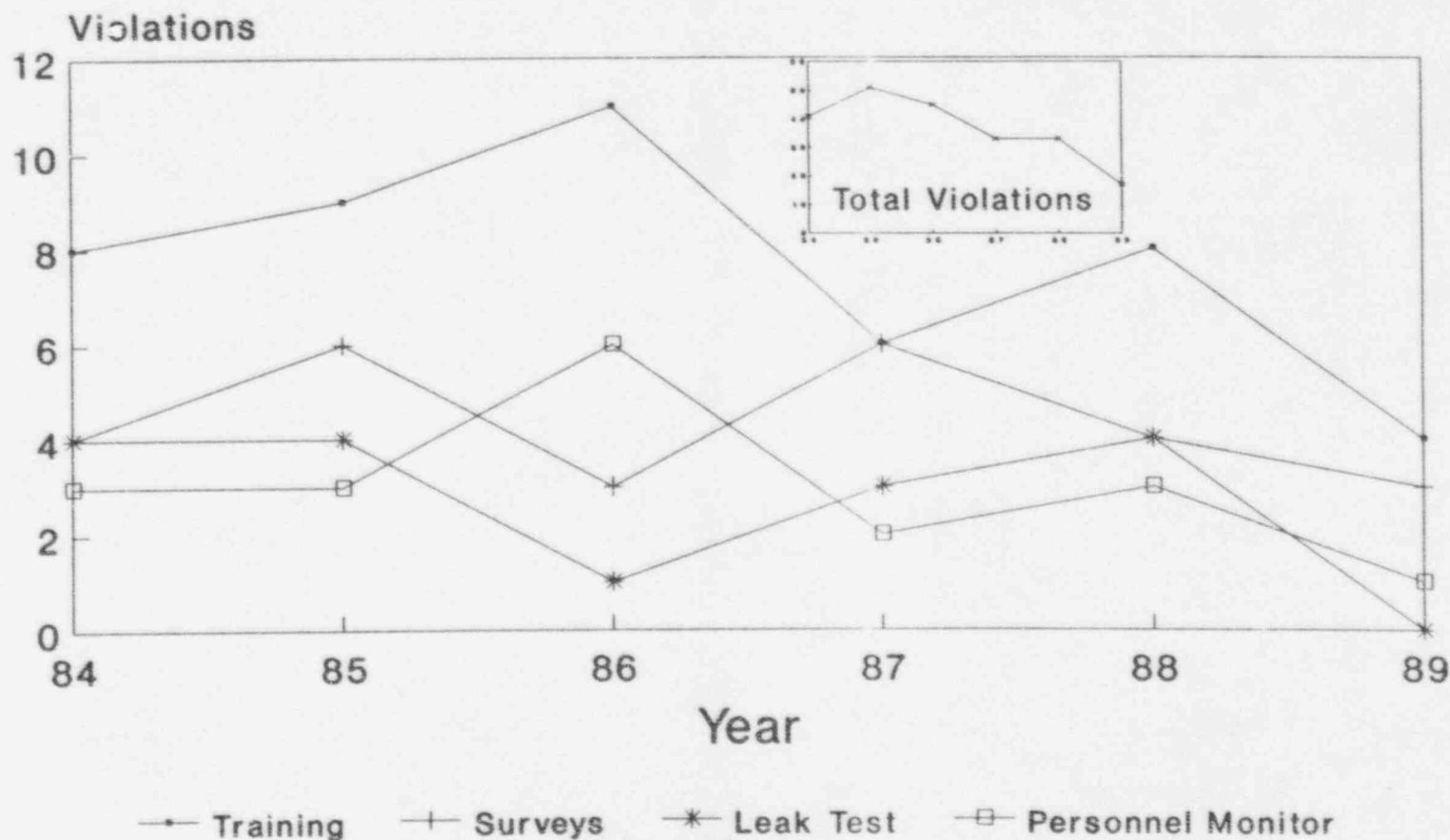
Program Code: 03214



Inspection Frequency: 3 Years

Industrial Radiography Fixed Location

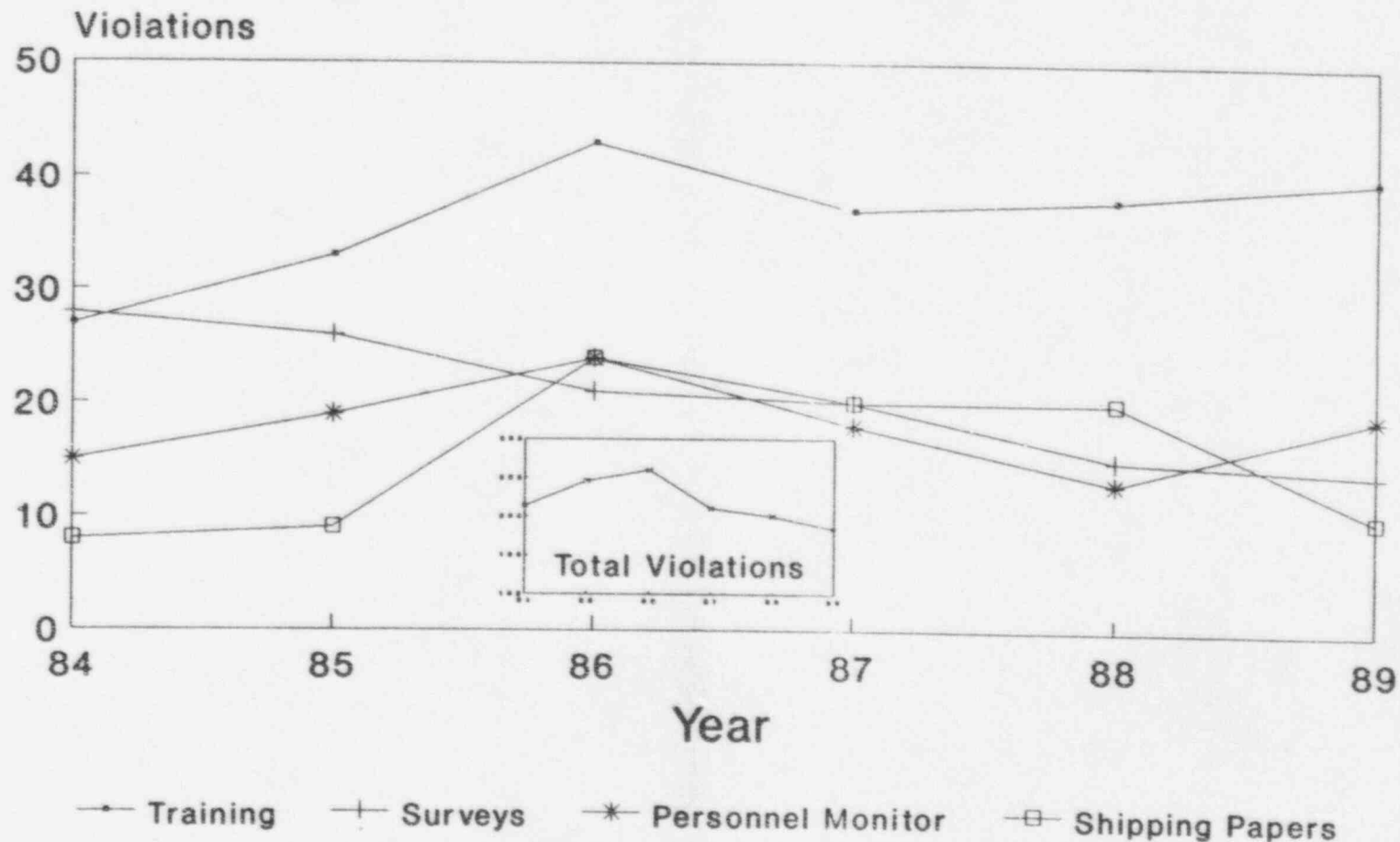
Program Code: 03310



Inspection Frequency: 1 Year

Industrial Radiography Temp. Job Site

Program Code: 03320



Inspection Frequency: 1 Year

F. Examples of Violations

Leak Test

LEAK TESTS OF SEALED SOURCES WERE NOT PERFORMED AT THE PROPER FREQUENCIES, AS REQUIRED BY LICENSE CONDITION NUMBER 13.

RECORDS OF LEAK TESTS OF CS-137 SOURCES UNDER LICENSE NO. 13-02557-02 WERE NOT PROPERLY MAINTAINED, AS REQUIRED BY LICENSE CONDITION NUMBER 14.

CONTRARY TO LICENSE CONDITION 14 A(I) TWO LEAK TESTS (5A AM) BE & 575M AM/BE/CS-137) OF SEALED SOURCES WERE NOT PERFORMED AT THE PROPER FREQUENCIES.

41

Change of Address

FAILURE TO REPORT CHANGE OF MAILING ADDRESS.

Shipping Papers

49 CFR 172.200 REQUIRES THAT EACH PERSON WHO TRANSPORTS OR OFFERS A PACKAGE OF HAZARDOUS MATERIAL FOR TRANSPORT DESCRIBE THE MATERIAL ON A SHIPPING PAPER AS DESCRIBED IN THIS SUBPART. CONTRARY TO THIS REQUIREMENT, THE LICENSEE'S REPRESENTATIVE STATED TO THE NRC INSPECTOR THAT SHIPPING PAPERS WERE NOT PREPARED AND CARRIED.

A. 49 CFR 172.200(A) REQUIRES, IN PART, THAT EACH PERSON WHO OFFERS A HAZARDOUS MATERIAL FOR TRANSPORTATION SHALL DESCRIBE THE HAZARDOUS MATERIAL ON THE SHIPPING PAPER IN THE MANNER REQUIRED BY SUBPART C OF PART 172.

CONTRARY TO THIS REQUIREMENT, ON 2/29/84, IT WAS DETERMINED THAT SHIPPING PAPERS HAD NOT BEEN PROVIDED FOR RADIOACTIVE MATERIAL BEING TRANSPORTED BY THE LICENSEE ON PUBLIC HIGHWAYS IN OKLAHOMA.

10 CFR 71.5(A) REQUIRES THAT NO LICENSEE DELIVER ANY LICENSED MATERIAL TO A CARRIER FOR TRANSPORT WITHOUT COMPLYING WITH THE APPLICABLE REQUIREMENTS OF THE REGULATIONS APPROPRIATE TO THE MODE OF TRANSPORT OF THE DEPARTMENT OF TRANSPORTATION IN 49 CFR PARTS 170-189. 49 CFR 172.202(A) REQUIRES THAT THE SHIPPING DESCRIPTION OF A HAZARDOUS MATERIAL ON THE SHIPPING PAPER (REQUIRED PER 49 CFR 172.200) INCLUDE THE HAZARD CLASS AND IDENTIFICATION NUMBER. IN ADDITION, 49 CFR 172.203(D) REQUIRES THAT THE DESCRIPTION ON THE SHIPPING PAPER FOR A SHIPMENT OF RADIOACTIVE MATERIAL MUST INCLUDE THE CATEGORY OF LABEL AND THE TRANSPORT INDEX. CONTRARY TO THE ABOVE, ON FEBRUARY 27, 1986, THE LICENSEE TRANSPORTED 38 CURIES OF IRIDIUM-192 TO A FIELD SITE AND THE ASSOCIATED SHIPPING PAPER DID NOT CONTAIN THE CORRECT HAZARD CLASS, AN IDENTIFICATION NUMBER, THE CATEGORY OF LABEL, AND THE TRANSPORT INDEX.

Records of Receipt, Transfer and Disposal

10 CFR 30.51(A) REQUIRES THAT EACH LICENSEE KEEP RECORDS SHOWING THE RECEIPT, TRANSFER, AND DISPOSAL OF BYPRODUCT MATERIAL. CONTRARY TO THE ABOVE, NO RECORDS OF THE TRANSFER OF BYPRODUCT MATERIAL HAD BEEN MAINTAINED BY THE LICENSEE. SPECIFICALLY NO RECORDS WERE MAINTAINED OF THE TRANSFER OF TWO 12.5 MILLICURIE CESIUM-137 SOURCES (SERIAL NOS. 159 AND 160) TRANSFERRED TO APPLIED HEALTH PHYSICS IN JANUARY OF 1984.

RECORDS OF RECEIPT OF MATERIALS WERE NOT PROPERLY MAINTAINED FOR OHMART SOURCE MODEL NO. W4000, SERIAL NO. AM 511 & AM 1558.

10 CFR 30.51(A) REQUIRES THAT EACH PERSON WHO RECEIVES BY PRODUCT MATERIAL PURSUANT TO THE REGULATIONS IN 10 CFR 30 THROUGH 35, SHALL KEEP RECORDS SHOWING THE RECEIPT, TRANSFER AND DISPOSAL OF SUCH BYPRODUCT MATERIAL. CONTRARY TO THIS REQUIREMENT, A RECEIPT RECORD WAS NOT AVAILABLE FOR DEVICE, SERIAL NUMBER 9929.

10 CFR 30.51(A) STATES THAT EACH PERSON WHO RECEIVES BYPRODUCT MATERIAL PURSUANT TO A LICENSE ISSUED PURSUANT TO THE REGULATIONS IN THIS PART AND PARTS 31-35 SHALL KEEP RECORDS SHOWING THE RECEIPT, TRANSFER, AND DISPOSAL OF BYPRODUCT MATERIAL. CONTRARY TO THE REQUIREMENT, AT THE TIME OF INSPECTION, A RECORD HAD NOT BEEN MAINTAINED SHOWING THE TRANSFER ON MAY 6, 1985, OF AN OHMART MODEL ED-8 DENSITY GAUGE CONTAINING 150 MILLICURIES OF CESIUM-137 IN A SEALED SOURCE TO LONE STAR HAWAII CEMENT CORPORATION, EWA BEACH, HAWAII.

Performance and Records of Surveys

A. SAFETY PROCEDURES FOR HANDLING DENSIOLOG SOURCES (RP-C1) CONTAINED IN THE LICENSE APPLICATION STATE THAT THE ENGINEER WILL PERFORM AND RECORD THE RESULTS OF SURVEYS PERFORMED AT THE WELL SITE BEFORE AND AFTER A JOB AND OF THE LOGGING TOOL AT THE END OF A JOB.

CONTRARY TO THIS REQUIREMENT, UP TO THE DATE OF THE INSPECTION ON MARCH 7-8, 1984, SURVEYS WERE NOT ALWAYS PERFORMED BY THE ENGINEER OF THE WELL SITE AND OF THE LOGGING TOOL AT THE END OF THE JOB.

RECORDS OF RECEIPT, INSTALLATION AND SURVEYS OF SEALED SOURCES (GAUGES) WERE NOT PROPERLY MAINTAINED AS REQUIRED BY 10 CFR 30.51(A).

A. SECTION I.A.1 OF THE ATTACHMENTS STATES THAT THE RADIATION SAFETY OFFICER IS RESPONSIBLE FOR MAKING SURE ALL FACILITIES ARE INSPECTED MONTHLY TO DETERMINE THE CONTAMINATION LEVELS, IF ANY. CONTRARY TO THIS REQUIREMENT, MONTHLY FACILITY CONTAMINATION SURVEYS WERE NOT CONDUCTED DURING THE PERIOD JULY 23, 1982, TO APRIL 19, 1984.

THE LETTER DATED JANUARY 17, 1984 ENCLOSED THE LICENSEE'S PROCEDURE FOR RECEIPT OF RADIOACTIVE MATERIAL. THIS PROCEDURE REQUIRES ALL INCOMING PACKAGES BE MONITORED FOR EXTERNAL RADIATION LEVELS AND THE RESULTS OF THESE SURVEYS BE DOCUMENTED ON THE RECEIVING PAPERS. CONTRARY TO THE ABOVE, AS OF NOVEMBER 30, 1984, THE DATE OF THE INSPECTION, RESULTS OF SURVEYS ON INCOMING PACKAGES WERE NOT DOCUMENTED FOR THOSE PACKAGES CONTAINING SEALED SOURCES.

Performance and Records of Inventory

CONDITION 16 OF LICENSE NO. 18-02326-03 REQUIRES THAT A PHYSICAL INVENTORY BE CONDUCTED EVERY SIX MONTHS TO ACCOUNT FOR ALL SEALED SOURCES. CONTRARY TO THIS REQUIREMENT, AS OF AUGUST 7, 1985, THE LICENSEE DID NOT PERFORM A PHYSICAL INVENTORY AT THE REQUIRED SIX MONTH FREQUENCY.

CONTRARY TO LICENSE CONDITION 16, SIX MONTH INVENTORIES NOT CONCLUDED AS REQUIRED.

43 REQUIRED PHYSICAL INVENTORIES OF SEALED SOURCES WERE NOT PERFORMED AT THE PROPER FREQUENCIES AS REQUIRED BY LICENSE CONDITION NUMBER 16.

RECORDS OF PHYSICAL INVENTORY WERE NOT PROPERLY MAINTAINED, AS REQUIRED BY LICENSE CONDITION NUMBER 17.

LICENSE CONDITION 16 REQUIRES, IN PART, THAT THE LICENSEE CONDUCT A PHYSICAL INVENTORY EVERY 6 MONTHS TO ACCOUNT FOR ALL SEALED SOURCES POSSESSED UNDER THE LICENSE AND THAT RECORDS OF THE INVENTORIES INCLUDE THE QUANTITIES AND KINDS OF BYPRODUCT MATERIAL, LOCATION OF SEALED SOURCES, AND THE DATE OF THE INVENTORY.

CONTRARY TO THIS REQUIREMENT, RECORDS OF INVENTORIES PERFORMED PRIOR TO JANUARY 1985 DID NOT SHOW THE LOCATION OF THE SEALED SOURCES.

Posting of 10 CFR 19.11

10 CFR 19.11(A) AND (B) REQUIRE THAT CURRENT COPIES OF PART 19, PART 20, THE LICENSE, LICENSE CONDITIONS, DOCUMENTS INCORPORATED INTO THE LICENSE, LICENSE AMENDMENTS AND OPERATING PROCEDURES BE POSTED, OR THAT A NOTICE DESCRIBING THESE DOCUMENTS AND WHERE THEY MAY BE EXAMINED, BE POSTED. 10 CFR 19.11(C) REQUIRES THAT FORM NRC-3, "NOTICE TO EMPLOYEES," BE POSTED. CONTRARY TO THE ABOVE, ON MAY 3, 1984, NEITHER THE DOCUMENTS OR THE NOTICES WERE POSTED. THIS IS A SEVERITY LEVEL V VIOLATION (SUPPLEMENT VI).

DOCUMENTS WERE NOT PROPERLY POSTED OR OTHERWISE MADE AVAILABLE AS REQUIRED BY 10 CFR 19.11.

10 CFR 19.11(A) REQUIRES, IN PART, THAT THE LICENSEE POST A CURRENT COPY OF THE OPERATING PROCEDURES APPLICABLE TO LICENSED ACTIVITIES. CONTRARY TO THIS REQUIREMENT, A COPY OF THE OPERATING PROCEDURES WAS NOT AVAILABLE AT THE TIME OF THE INSPECTION.

10 CFR 19.11(A) AND (B) REQUIRE THAT CURRENT COPIES OF PART 19, PART 20, THE LICENSE, LICENSE CONDITIONS, DOCUMENTS INCORPORATED INTO THE LICENSE, LICENSE AMENDMENTS AND OPERATING PROCEDURES BE POSTED, OR THAT A NOTICE DESCRIBING THESE DOCUMENTS AND WHERE THEY MAY BE EXAMINED, BE POSTED. 10 CFR 19.11(C) REQUIRES THAT FORM NRC-3, "NOTICE TO EMPLOYEES," BE POSTED. CONTRARY TO THE ABOVE, ON THE DAY OF THE INSPECTION, NEITHER THE DOCUMENTS NOR THE NOTICES WERE POSTED AT THE BILLINGS OFFICE.

10 CFR 19.11(A) AND (B) REQUIRE THAT CURRENT COPIES OF PART 19, PART 20, THE LICENSE, LICENSE CONDITIONS, DOCUMENTS INCORPORATED INTO THE LICENSE, LICENSE AMENDMENTS AND OPERATING PROCEDURES BE POSTED, OR THAT A NOTICE DESCRIBING THESE DOCUMENTS AND WHERE THEY MAY BE EXAMINED, BE POSTED. CONTRARY TO THE ABOVE, AT THE TIME OF INSPECTION, NEITHER THE DOCUMENTS NOR THE NOTICE WERE POSTED.

Calibration

10 CFR 34.33(C) REQUIRES THAT POCKET DOSI METERS BE CHECKED AT INTERVALS NOT TO EXCEED ONE YEAR FOR CORRECT RESPONSE TO RADIATION. CONTRARY TO THIS REQUIREMENT, YOU FAILED TO PERFORM THE REQUIRED CHECK FOR CORRECT RESPONSE TO RADIATION ON POCKET DOSI METERS USED AT YOUR FACILITY DURING 1984.

LICENSE CONDITION NO. 21 REQUIRES THAT LICENSED MATERIAL BE POSSESSED AND USED IN ACCORDANCE WITH THE STATEMENTS, REPRESENTATIONS, AND PROCEDURES CONTAINED IN CERTAIN REFERENCED APPLICATIONS AND LETTERS. THE REFERENCED APPLICATION RECEIVED JANUARY 26, 1976, ITEM 2, AND LETTER DATED AUGUST 31, 1983, ITEM 11, STATE THAT YOUR VICTOREEN MODEL 490 SURVEY METER WILL BE CALIBRATED EVERY SIX MONTHS AND YEARLY, RESPECTIVELY. CONTRARY TO THIS REQUIREMENT, ONE OF YOUR VICTOREEN MODEL 490 SURVEY METERS HAS NOT BEEN CALIBRATED AT LEAST YEARLY. SPECIFICALLY, THE VICTOREEN MODEL 490 METER USED BY YOUR INSTRUMENT AND ELECTRICAL/MAINTENANCE DEPARTMENTS, HAS NOT BEEN CALIBRATED SINCE JANUARY 1983.

CONDITION 18 OF LICENSE NO 20-12743-01 REQUIRES THAT LICENSED MATERIAL BE POSSESSED AND USED IN ACCORDANCE WITH STATEMENTS, REPRESENTATIONS AND PROCEDURES CONTAINED IN APPLICATION DATED FEBRUARY 17, 1984. ITEM NO. 11 OF THIS APPLICATION REQUIRES THAT SURVEY INSTRUMENTS BE CALIBRATED ANNUALLY. CONTRARY TO THE ABOVE, AS OF JANUARY 29, 1985, A SURVEY INSTRUMENT LAST CALIBRATED ON DECEMBER 23, 1983, HAD NOT BEEN CALIBRATED. THESE ARE SEVERITY LEVEL IV VIOLATION (SUPPLEMENT VI).

CONTRARY TO LICENSE CONDITION 17, PORTABLE GM SURVEY UNIT NOT CALIBRATED AS REQUIRED.

RECORDS OF SURVEYS OF INSTRUMENT CALIBRATION WERE NOT PROPERLY MAINTAINED, LICENSE CONDITION NO. 17.

CONTRARY TO 10 CFRE 39.33(A), THE LICENSEE DID NOT POSSESS A CURRENT CALIBRATED SURVEY INSTRUMENT AT A TEMPORARY JOBSITE.

Verify Transferee's Authority to Receive

10 CFR 30.41(C) REQUIRES THAT, PRIOR TO TRANSFERRING LICENSED MATERIAL, EACH LICENSEE VERIFY THAT THE TRANSFEE'S LICENSE AUTHORIZES THE RECEIPT OF THE TYPE, FORM, AND QUANTITY OF BYPRODUCT MATERIAL TO BE TRANSFERRED. 10 CFR 30.41(D) SPECIFIES THE REQUIREMENTS FOR VERIFYING AUTHORIZATION. CONTRARY TO THE ABOVE, IN SEPTEMBER 1981, 10 MILLICURIES OF CESIUM-137 AND 50 MILLICURIES OF AMERICIUM-241 AS SEALED SOURCES IN A TROXLER MODEL 2401 PORTABLE MOISTURE/DENSITY GAUGE WERE TRANSFERRED WITHOUT UTILIZING ONE OF THE VERIFICATION PROCEDURES.

10 CFR 30.41(C) STATES, IN PART, THAT BEFORE TRANSFERRING BYPRODUCT MATERIAL TO A LICENSEE OF THE COMMISSION, THE LICENSEE TRANSFERRING THE MATERIAL SHALL VERIFY THAT THE TRANSFEE'S LICENSE AUTHORIZES THE RECEIPT OF THE TYPE, FORM, AND QUANTITY OF BYPRODUCT MATERIAL TO BE TRANSFERRED. CONTRARY TO THE REQUIREMENT, THE LICENSEE DID NOT VERIFY THAT THE TRANSFEE'S NRC LICENSE AUTHORIZED THE RECEIPT OF THE OHMART MODEL ED-8 DENSITY GAUGE CONTAINING 150 MILLICURIES OF CESIUM-137 IN A SEALED SOURCE PRIOR TO THE TRANSFER OF THE GAUGE ON MAY 6, 1985, TO LONE STAR HAWAII CEMENT CORPORATION, EWA BEACH, HAWAII.

CONTRARY TO 10CFR 30.41 THE LICENSEE TRANSFERRED 50 MILLICURIES OF IODINE-131 ON AUGUST 7, 1984, TO AN NRC LICENSEE WITHOUT OBTAINING THE REQUIRED VERIFICATIONS THAT THE TRANSFEE'S LICENSE AUTHORIZED SUCH MATERIAL.

Transportation (special form, 7A, packages)

B. 49 CFR 173.415(A) REQUIRES, IN PART, THAT EACH SHIPPER OF A SPECIFICATION 7A PACKAGE MUST MAINTAIN ON FILE FOR AT LEAST 1 YEAR AFTER THE LAST SHIPMENT, A COMPLETE CERTIFICATION AND SUPPORTING SAFETY ANALYSIS DEMONSTRATING THAT THE CONSTRUCTION METHODS, PACKAGE DESIGN, AND MATERIALS ARE IN COMPLIANCE WITH THE SPECIFICATIONS.

CONTRARY TO THIS REQUIREMENT, ON 2/29/84, THE LICENSEE DID NOT HAVE THE SPECIFICATION 7A PACKAGE CERTIFICATION FOR SUCH PACKAGES TRANSPORTING RADIOACTIVE MATERIAL ON THE PUBLIC HIGHWAYS IN OKLAHOMA.

45 49 CFR 173.415(A) REQUIRES EACH SHIPPER OF A SPECIFICATION 7A PACKAGE TO MAINTAIN ON FILE A COMPLETE DOCUMENTATION OF TESTS SHOWING THAT THE PACKAGE MEETS THE SPECIFICATIONS FOR SPECIFICATION 7A PACKAGES. CONTRARY TO THE ABOVE, THE LICENSEE FAILED TO MAINTAIN DOCUMENTS SHOWING THAT THEIR PACKAGE MEETS SPECIFICATIONS FOR 7A PACKAGES. SPECIFICALLY, THE LICENSEE HAD NO DOCUMENTATION SHOWING THAT THE PACKAGE USED FOR ROUTINELY SHIPPING A 125 MILLICURIE CESIUM-137 COMPROBE WELL-LOGGING TOOL MET THE CRITERIA FOR SPECIFICATION 7A PACKAGES

C. 49 CFR 173.476(A) REQUIRES, IN PART, THAT EACH SHIPPER OF SPECIAL FORM RADIOACTIVE MATERIAL SHALL MAINTAIN ON FILE FOR AT LEAST 1 YEAR AFTER THE LAST SHIPMENT, A COMPLETE CERTIFICATION AND SUPPORTING SAFETY ANALYSIS DEMONSTRATING THAT THE SPECIAL FORM MATERIALS MEETS THE REQUIREMENTS OF 49 CFR 173.469.

CONTRARY TO THIS REQUIREMENT, THE LICENSEE DID NOT POSSESS THE CERTIFICATION FOR SPECIAL FORM MATERIAL TRANSPORTED ON THE PUBLIC HIGHWAYS IN THE STATE OF OKLAHOMA DURING THE PERIOD 2/29/83 - 2/29/84

49 CFR 173.398(A), NOTE 1, REQUIRES, IN PART, THAT EACH SHIPPER OF SPECIAL FORM RADIOACTIVE MATERIAL SHALL MAINTAIN ON FILE FOR AT LEAST ONE YEAR AFTER THE LAST SHIPMENT, A COMPLETE CERTIFICATION AND SUPPORTING SAFETY ANALYSIS DEMONSTRATING THAT THE SPECIAL FORM MATERIAL MEETS THE REQUIREMENTS OF PARAGRAPH (A) OF THE SECTION.

CONTRARY TO THIS REQUIREMENT, THE LICENSEE DID NOT HAVE THE CERTIFICATION FOR SPECIAL FORM RADIOACTIVE MATERIAL DELIVERED FOR SHIPMENT.

Personnel Monitoring and Exposure Records

10 CFR 20.401(A) REQUIRES THAT EACH LICENSEE SHALL MAINTAIN RECORDS SHOWING RADIATION EXPOSURES OF ALL INDIVIDUALS FOR WHOM PERSONNEL MONITORING IS REQUIRED. IT FURTHER REQUIRES THAT SUCH RECORDS SHALL BE KEPT ON FORM NRC-5 IN ACCORDANCE WITH THE INSTRUCTIONS CONTAINED IN THAT FORM OR CLEAR LEGIBLE RECORDS CONTAINING ALL THE INFORMATION REQUIRED BY FORM NRC-5. CONTRARY TO THIS REQUIREMENT THE LICENSEE'S ALTERNATE FORM DID NOT INCLUDE THE SOCIAL SECURITY NUMBERS OR DATES OF BIRTH FOR THE INDIVIDUALS MONITORED.

SECTION 2 OF THE RADIATION SAFETY PROCEDURES CONTAINED IN THE APPLICATION DATED 9/15/82, STATES, IN PART, THAT FILM BADGES WILL BE WORN BY ALL PERSONNEL WORKING WITH RADIOACTIVE MATERIAL. CONTRARY TO THIS REQUIREMENT, FILM BADGES WERE NOT WORN BY TWO DIFFERENT INDIVIDUALS WHO WORKED WITH RADIOACTIVE MATERIAL ON 11/10-11/81, AND 2/1/84.

CONTRARY TO LICENSE CONDITION 18, PERSONNEL MONITORING DEVICES (FILM BADGES) IN USE SINCE THE ISSUANCE OF YOUR LICENSE DID NOT HAVE THE CAPABILITY OF MEASURING EXPOSURE TO NEUTRON RADIATION.

10 CFR 20.401(A) REQUIRES THAT EACH LICENSEE MAINTAIN RECORDS SHOWING RADIATION EXPOSURES ON FORM NRC-5, IN ACCORDANCE WITH THE INSTRUCTIONS CONTAINED IN THAT FORM OR ON CLEAR AND LEGIBLE RECORDS CONTAINING ALL THE INFORMATION REQUIRED BY FORM NRC-5. CONTRARY TO THE ABOVE, ON MAY 3, 1984, EXPOSURE RECORDS CONTAINING THE REQUIRED INFORMATION WERE NOT MAINTAINED. SPECIFICALLY, MONTHLY FILM BADGE RECORDS WERE MISSING FOR THE MONTHS OF MARCH, MAY, SEPTEMBER AND DECEMBER OF 1983 AND JANUARY 1984. THIS IS A SEVERITY LEVEL V VIOLATION (SUPPLEMENT IV).

Unauthorized Use or Storage

LICENSE CONDITION 10 STATES THAT LICENSED MATERIAL MAY BE USED AT THE FACILITIES SPECIFIED IN ITEM 1 OF THE LICENSEE'S LETTER RECEIVED FEB. 3, 1983 AND AT TEMPORARY JOB SITES OF THE LICENSEE ANYWHERE IN THE U.S. WHERE THE U.S. NUCLEAR REGULATORY COMM. MAINTAINS JURISDICTION FOR REGULATING THE USE OF LICENSED MATERIAL. CONTRARY TO THIS REQUIREMENT, THE RADIATION SAFETY OFFICER STATED TO THE NRC INSPECTOR THAT A DEVICE IS PERMANENTLY STORED AT THE LAGUNA AGENCY, A LOCATION NOT LISTED AS A STORAGE LOCATION. RECORDS SHOW THAT THE DEVICE WAS RECEIVED IN JULY OF 1983.

46
CONDITION 10 OF LICENSE NO. 18-02326-03 LIMITS THE USE OF LICENSED MATERIAL TO THE ONE KATAHDIN AVENUE, MILLINOCKET, MAINE. CONTRARY TO THE ABOVE, ON AUGUST 7, 1985, LICENSED MATERIAL WAS BEING USED AT MAIN ROAD, EAST MILLINOCKET, MAINE.

L.C. 17 REQUIRES THAT LICENSED MATERIAL BE POSSESSED AND USED IN ACCORDANCE WITH THE STATEMENTS, REPRESENTATIONS, AND PROCEDURES CONTAINED IN THE LETTER DATED DECEMBER 3, 1985, & THE APPLICATION DATED JULY 18, 1985. ITEM 15 OF THE APPLICATION SPECIFIES THAT GAUGES WILL BE STORED IN A SAFE LOCATED IN THE PUBLIC WORKS OFFICE, COURTHOUSE BUTTE, MONTANA WHEN NOT IN USE. CONTRARY TO THE ABOVE, SINCE SEPTEMBER 28, 1989, THE LICENSEE STORED A CAMPBELL PACIFIC MODEL MC-2 MOISTURE/DENSITY GAUGE AT ITS MAINTENANCE FACILITY AT 1700 CIVIC CENTER ROAD, BUTTE, MONTANA.

Labeling of Gauges

IN ADDITION, ITEM 8(E) OF YOUR LETTER DATED SEPTEMBER 25, 1984, REFERENCED IN LICENSE CONDITION 21, STATES THAT EQUIPMENT ON WHICH SOURCES ARE MOUNTED SHALL BE POSTED AT ACCESS PARTS AND/OR MANWAYS WITH SIGNS BEARING THE YELLOW AND MAGENTA RADIATION WARNING SYMBOL AND THE WORDS "CAUTION RADIOACTIVE MATERIAL, DO NOT ENTER WITHOUT PERMISSION OF THE RADIATION SAFETY PERSONNEL." CONTRARY TO THE ABOVE, ON THE DAY OF THIS INSPECTION, OCTOBER 4, 1985, AT LEAST TWO KAY RAY GAUGES EACH CONTAINING A NOMINAL 1.0 CURIE CESIUM-137 SOURCE, DID NOT BEAR A LABEL IDENTIFYING THE RADIOACTIVE CONTENTS OR THE RADIATION CAUTION SYMBOL AND REQUIRED INFORMATION.

Block and Brace (transport packages)

10 CFR 71.5(A) REQUIRES THAT EACH LICENSEE WHO TRANSPORTS LICENSED MATERIAL OUTSIDE THE CONFINES OF ITS PLANT COMPLY WITH THE APPLICABLE REQUIREMENTS OF THE REGULATIONS APPROPRIATE TO THE MODE OF TRANSPORT OF THE DEPARTMENT OF TRANSPORTATION IN 49 CFR PARTS 170 THROUGH 189. 49 CFR 177.843(D) STATES THAT PACKAGES CONTAINING RADIOACTIVE MATERIAL MUST BE SO BLOCKED AND BRACED THAT THEY CANNOT CHANGE POSITION DURING CONDITIONS NORMALLY INCIDENT TO TRANSPORTATION. CONTRARY TO THIS REQUIREMENT AS OF JULY 8, 1987, A PORTABLE DENSITY GAUGE CONTAINING RADIOACTIVE MATERIAL WAS TRANSPORTED TO A TEMPORARY JOB SITE WITHOUT BLOCKING OR BRACING.

47

Report of Loss or Theft

-10 CFR 20.402 (A)(1) STATES EACH LICENSEE SHALL REPORT TO THE COMMISSION BY TELEPHONE, IMMEDIATELY AFTER IT DETERMINES THAT A LOSS OR THEFT OF LICENSED MATERIAL HAS OCCURRED IN SUCH QUANTITIES AND UNDER SUCH CIRCUMSTANCES THAT IT APPEARS TO THE LICENSEE THAT A SUBSTANTIAL HAZARD MAY RESULT TO PERSONS IN UNRESTRICTED AREAS. CONTRARY TO THE ABOVE, THE LICENSEE DID NOT IMMEDIATELY REPORT THE THEFT OF LICENSED MATERIAL. SPECIFICALLY, A NUCLEAR MOISTURE-DENSITY GAUGE (CONTAINING 8.8 MILLICURIES OF CESIUM-137 AND 40 MILLICURIES OF AMERICIUM-241) WAS STOLEN AT 1:00 A.M. ON NOVEMBER 21, 1987, AND THE THEFT WAS NOT REPORTED TO THE COMMISSION UNTIL NOVEMBER 23, 1987.

Labeling of Transport Packages

49 CFR 172.403(C) REQUIRES A CATEGORY YELLOW III LABEL BE AFFIXED TO EACH RADIOACTIVE MATERIAL PACKAGE THAT EXCEEDS 50 MR/HR AT CONTACT WITH THE OUTER SURFACE OF THE PACKAGE, AND EXCEEDS 1.0 MR/HR AT ONE METER FROM THE OUTER SURFACE OF THE PACKAGE. 49 CFR 172.403(F) REQUIRES THAT EACH PACKAGE REQUIRED TO BE LABELED MUST HAVE TWO LABELS AFFIXED TO OPPOSITE SIDES OF THE PACKAGE. (C) 49 CFR 173.475 (1) REQUIRES THAT BEFORE EACH SHIPMENT OF RADIOACTIVE MATERIAL PACKAGE, THE SHIPPER SHALL ENSURE BY EXAMINATION OR APPROPRIATE TESTS, THAT EXTERNAL RADIATION LEVELS ARE WITHIN THE ALLOWABLE LIMITS SPECIFIED IN THIS SUBCHAPTER. CONTRARY TO THE ABOVE IT WAS LEARNED FROM STATEMENTS OF LICENSEE REPRESENTATIVES, AN EXAMINATION OF PACKAGES AND A REVIEW OF RECORDS, THAT THESE REQUIREMENTS WERE NOT MET. SPECIFICALLY, YOU TRANSPORTED LICENSED MATERIAL TO VARIOUS AREAS IN THE STATES OF ILLINOIS AND INDIANA ON NUMEROUS OCCASIONS DURING 1982 AND TO THE DAY OF THE INSPECTION, AUGUST 2, 1984, WITH ONE CATEGORY YELLOW II LABEL AFFIXED TO THE PACKAGES, AND YOU FAILED TO ENSURE THAT THE RADIATION LEVELS WERE WITHIN THE ALLOWABLE LIMITS FOR CATEGORY YELLOW II LABELS.

- CONTRARY TO 49 CFR 172.301(A), THE LICENSEE DID NOT PROPERLY MARK A HAZARDOUS MATERIAL PACKAGE FOR SHIPMENT IN THAT THE MARKINGS DID NOT INCLUDE THE PROPER SHIPPING NAME AND IDENTIFICATION NUMBER OF THE HAZARDOUS MATERIAL.

Training and Records of Training

CONDITION 17 OF LICENSE NO. 06-02024-01 REQUIRES THAT LICENSED MATERIAL BE POSSESSED AND USED IN ACCORDANCE WITH STATEMENTS, REPRESENTATIONS AND PROCEDURES CONTAINED IN AN APPLICATION DATED SEPTEMBER 10, 1980. THE TRAINING PROGRAM DESCRIBED IN APPLICATION DATED SEPTEMBER 10, 1980 REQUIRES THAT PERSONNEL BE GIVEN REFRESHER TRAINING ANNUALLY AND THAT THIS TRAINING COVER THE HAZARDS, RULES, AND REGULATIONS ASSOCIATED WITH RADIOGRAPHY. CONTRARY TO THE ABOVE, AS OF MAY 22, 1986, A RADIOGRAPHER AND RADIOGRAPHER'S ASSISTANT HAD NOT BEEN PROVIDED REFRESHER TRAINING WITHIN THE LAST YEAR.

Approved Operating Procedures

THE LICENSE DID NOT OBTAIN A RECORD OF ANY RADIATION DOSE THAT MAY HAVE BEEN RECEIVED BY INDIVIDUALS FROM PREVIOUS EMPLOYMENT IN THE SAME CALENDAR QUARTER IN WHICH THEY WERE HIRED. 10 CFR 20.102(A) NO CORRECTION HAD BEEN MADE FOR DECAY IN DETERMINING THE ACTIVITY OF THE SOURCE USED FOR INSTRUMENT CALIBRATION. LICENSE CONDITION 16.

CONTRARY TO LICENSE CONDITION 10, ON JANUARY 22, 1986, THE LICENSEE USED A BUDD MULTITRON EXPOSURE DEVICE TO PERFORM RADIOGRAPHY. THIS EXPOSURE DEVICE IS NOT AUTHORIZED BY LICENSE CONDITION 10.

48

CONDITION 16 OF LICENSE NO. 37-11152-01 REQUIRES THAT LICENSED MATERIAL BE POSSESSED AND USED IN ACCORDANCE WITH STATEMENTS, REPRESENTATIONS AND PROCEDURES CONTAINED IN AN APPLICATION DATED SEPTEMBER 20, 1985. INCLUDED IN THIS APPLICATION IS SECTION 8. SECTION 8 (TESTING PROCEDURES, RADIOGRAPHERS) REQUIRES THAT INDIVIDUALS QUALIFYING AS RADIOGRAPHERS BE ADMINISTERED A WRITTEN EXAMINATION CONSISTING OF A MINIMUM OF 50 QUESTIONS COVERING ALL ITEMS IN APPENDIX A OF 10 CFR PART 34. CONTRARY TO THE ABOVE, AS OF MARCH 25, 1987, TWO INDIVIDUALS QUALIFYING AS RADIOGRAPHERS ON NOVEMBER 5, 1986, WERE NOT ADMINISTERED THE REQUIRED WRITTEN EXAMINATION CONSISTING OF A MINIMUM OF 50 QUESTIONS COVERING ALL ITEMS IN APPENDIX A OF 10 CFR PART 34.

10 CFR 34.41 REQUIRES THAT DURING EACH RADIOGRAPHIC OPERATION, THE RADIOGRAPHER OR RADIOGRAPHER'S ASSISTANT MAINTAIN DIRECT SURVEILLANCE OF THE OPERATION TO PROTECT AGAINST UNAUTHORIZED ENTRY INTO A HIGH RADIATION AREA. CONTRARY TO THE ABOVE, ON OCTOBER 18, 1984, AT A FIELD SITE IN ALPHA, NEW JERSEY, DIRECT SURVEILLANCE OVER A RADIOGRAPHIC OPERATION WAS NOT MAINTAINED.

Radiation Safety Officer

CONTRARY TO LICENSE CONDITION 18 & ITEM 7 OF APPLICATION DATED SEPT. 17, 1984 THE INDIVIDUAL DESIGNATED AS THE RADIATION PROTECTION OFFICER IS NO LONGER EMPLOYED BY THE COMPANY AND ANOTHER QUALIFIED INDIVIDUAL IS ACTING AS RSO.

49 II. VIOLATION NOT INVOLVED IN THE EVENT LICENSE CONDITION NO. 19 REQUIRES THAT LICENSED MATERIAL BE POSSESSED AND USED IN ACCORDANCE WITH THE STATEMENTS, REPRESENTATIONS, AND PROCEDURES CONTAINED IN A LETTER DATED APRIL 24, 1985. THE REFERENCED LETTER DATED APRIL 24, 1985, NAMES THE INDIVIDUAL DESIGNATED BY THE LICENSEE TO BE THE RADIATION PROTECTION OFFICER. CONTRARY TO THE ABOVE, FROM JUNE UNTIL OCTOBER, 1986, AN INDIVIDUAL OTHER THAN THE INDIVIDUAL DESIGNATED IN THE LICENSEE'S APRIL 24, 1985 LETTER, ACTED AS RADIATION PROTECTION OFFICER.

CONTRARY TO 10 CFR 30.9(A), IN A LICENSEE COMPLETED QUESTIONNAIRE RECEIVED BY THE COMMISSION ON 8/16/88, THE LICENSEE ANSWERED YES THAT THE RADIATION PROTECTION OFFICER WAS THE SAME AS STATED IN THE LICENSE AND THAT THE PERSONNEL DOSIMETRY PROGRAM MET THE REQUIREMENTS OF 10 CFR 39.65. ON 12/1/88 THE NRC INSPECTOR THAT THE DUTIES AND RESPONSIBILITIES OF THE RADIATION PROTECTION OFFICER WERE NOT CONDUCTED BY THE INDIVIDUAL SPECIFIED IN THE LICENSE ALTHOUGH AN APPLICATION REQUEST HAD BEEN SUBMITTED TO THE NRC REQUESTING THAT THE RADIATION PROTECTION OFFICER WHO ANSWERED THE QUESTIONNAIRE BE DESIGNATED AS SUCH. THAT REQUEST HAD NOT BEEN AUTHORIZED BY THE NRC AT THE TIME OF THE INSPECTION.

Unauthorized User

LICENSE CONDITION NO. 12 STATES LICENSED MATERIAL SHALL BE USED BY, OR UNDER THE SUPERVISION OF B. G. DELMONT. CONTRARY TO THE ABOVE, LICENSED MATERIAL HAS NOT ALWAYS BEEN USED BY OR UNDER THE SUPERVISION OF B. G. DELMONT. SPECIFICALLY, SINCE SEPTEMBER 1986, LICENSED MATERIAL HAS BEEN USED BY OR UNDER THE SUPERVISION OF AN INDIVIDUAL NOT AUTHORIZED BY LICENSE CONDITION NO. 12.

CONTRARY TO L.C. 11, THE LICENSEE HAD AN INDIVIDUAL OTHER THAN THE LICENSED INDIVIDUALS AS AUTHORIZED USER.

CONTRARY TO LICENSE CONDITION 12, TWO INDIVIDUALS WHO ARE NOT IDENTIFIED AS AUTHORIZED USERS, USED A 100 MCI, CS-137 SEALED SOURCE AT A TEMPORARY JOB SITE IN WEST VIRGINIA DURING SEPTEMBER, 1984.

CONTRARY TO LICENSE CONDITION 12, THE LICENSEE PERMITTED ONE INDIVIDUAL NOT NAMED IN LICENSE CONDITION 12 TO PERFORM WELL-LOGGING USING BYPRODUCT MATERIALS WITHOUT SUPERVISION FOR ABOUT 3 1/2 YEARS (FROM OCTOBER 1984 TO APRIL 1985) AND ANOTHER INDIVIDUAL TO DO THE SAME FOR ABOUT 2 YEARS (FROM APRIL 1985 TO APRIL 1987).

CONDITION 12 OF LICENSE NO. 20-01476-04 REQUIRES THAT LICENSED MATERIAL BE USED BY, OR UNDER THE SUPERVISION OF INDIVIDUALS SPECIFICALLY NAMED IN THIS LICENSE CONDITION. CONTRARY TO THE ABOVE, ON NOVEMBER 21, 1985, INDIVIDUALS NOT NAMED IN THIS LICENSE CONDITION WERE THE ONLY PERSONNEL USING OR SUPERVISING THE USE OF THIS LICENSED MATERIAL.

Visible/Durable Label

10 CFR 20.203(F) REQUIRES THAT EACH CONTAINER HOUSING LICENSED MATERIAL IN EXCESS OF SPECIFIED AMOUNTS BEAR A DURABLE, CLEARLY VISIBLE LABEL IDENTIFYING THE RADIOACTIVE CONTENTS; THIS LABEL SHALL BEAR THE RADIATION CAUTION SYMBOL AND THE WORDS "CAUTION, RADIOACTIVE MATERIAL" OR "DANGER, RADIOACTIVE MATERIAL."

50 C. 10 CFR 20.203(F) REQUIRES THAT EACH CONTAINER OF LICENSED MATERIAL BEAR A DURABLE, CLEARLY VISIBLE LABEL BEARING THE RADIATION CAUTION SYMBOL AND THE WORDS "CAUTION, RADIOACTIVE MATERIAL" OR "DANGER, RADIOACTIVE MATERIAL." CONTRARY TO THE ABOVE, ON OCTOBER 2, 1986, TWO GAUGES CONTAINING LICENSED MATERIAL HAD LABELS WHICH WERE NOT DURABLE AND CLEARLY VISIBLE BECAUSE THE LABELS WERE DAMAGED AND WORN.

10 CFR 39.31(A)(1) REQUIRES, IN PART, THAT A LICENSEE MAY NOT USE A SOURCE HOLDER THAT CONTAINS LICENSED MATERIAL UNLESS THE SMALLEST COMPONENT THAT IS TRANSPORTED BEARS A DURABLE, LEGIBLE, AND CLEARLY VISIBLE MARKING OR LABEL. THE MARKING OR LABEL MUST CONTAIN THE RADIATION SYMBOL SPECIFIED IN 20.203 AND THE WORDING "DANGER (OR CAUTION) RADIOACTIVE MATERIAL." CONTRARY TO THE ABOVE, FROM DECEMBER 1988 TO MARCH 1990, THE LICENSEE HAD USED SOURCE HOLDERS WHICH DID NOT BEAR THE REQUIRED MARKING OR LABEL TO TRANSPORT AMERICIUM-241 SEALED SOURCES TO TEMPORARY JOBSITES.

Unsecured Storage or Unattended

10 CFR 20.207(A) REQUIRES THAT LICENSED MATERIAL STORED IN AN UNRESTRICTED AREA BE SECURED FROM UNAUTHORIZED REMOVAL FROM THE PLACE OF STORAGE. 10 CFR 20.3(A)(17) DEFINES "UNRESTRICTED AREA" AS ANY AREA ACCESS TO WHICH IS NOT CONTROLLED BY THE LICENSEE FOR PURPOSES OF PROTECTION OF INDIVIDUALS FROM EXPOSURE TO RADIATION AND RADIOACTIVE MATERIALS. CONTRARY TO THE ABOVE, LICENSED MATERIAL CONSISTING OF A NOMINAL 500 MILLICURIE CESIUM-137 SEALED SOURCE CONTAINED IN A DENSITY GAUGE WAS STORED IN AN UNRESTRICTED AREA OUTSIDE BUILDING 34 IN 3M'S CHEMULITE COMPLEX AND WAS NOT SECURED FROM UNAUTHORIZED REMOVAL FROM DECEMBER 1983 UNTIL IT WAS LOST AT SOME TIME BETWEEN APRIL AND JULY 1984.

10 CFR 20.207 REQUIRES THAT LICENSED MATERIAL STORED IN AN UNRESTRICTED AREA SHALL BE SECURED FROM UNAUTHORIZED REMOVAL FROM THE PLACE OF STORAGE. CONTRARY TO THIS REQUIREMENT, ON MARCH 7, 1984, A 400 MILLICURIE (MCI) AMERICIUM-BERYLLIUM (AMBE) NEUTRON SOURCE IN AN UNLOCKED STORAGE PIT INSIDE THE LICENSEE'S ROCK SPRINGS FACILITY, WHICH WAS ALSO UNLOCKED AND UNATTENDED, WAS NOT SECURED FROM UNAUTHORIZED REMOVAL.

10 CFR 20.207(B) STATES, IN PART, THAT LICENSED MATERIALS IN AN UNRESTRICTED AREA & NOT IN STORAGE SHALL BE TENDED UNDER THE CONSTANT SURVEILLANCE & IMMEDIATE CONTROL OF THE LICENSEE. CONTRARY TO THE ABOVE, LICENSED MATERIAL IN A TROXLER NUCLEAR DENSITY GAUGE MODEL 2401, SERIAL NO. 1160, WAS NOT UNDER THE CONSTANT SURVEILLANCE & IMMEDIATE CONTROL OF THE LICENSEE IN THAT IT WAS DAMAGED BY A STEEL ROLLER ON SEPT. 1, 1987, AT NASHUA-WEST, HIGHWAY 2, GLENDIE DISTRICT, MONTANA. THE LICENSEE'S USER OF THE GAUGE WAS APPROXIMATELY 12 FT. FROM THE GAUGE AT THE TIME OF THE ACCIDENT & WAS UNABLE TO SIGNAL THE ROLLER OPERATOR TO STOP THE MACHINE BEFORE IT CRUSHED THE GAUGE. NO ACTIVITY ESCAPED THE SEALED SOURCES AS A RESULT OF THIS ACCIDENT.

Counts of Isotope Amounts within selected ranges, as of 04/10/96

	X < 1	1 <= X < 10	10 <= X < 100	100 <= X < 500	500 <= X < 1000	X > 1000	TOTAL
AM241	612	547	2112	3506	120	107	7,004.00
CD109	255	1366	82	4	1	0	1,708.00
CF252	71	0	0	0	0	0	71.00
CM244	12	1	367	81	8	3	472.00
CO60	5	21	27	7	5	2	67.00
CS137	4778	100	4397	5697	834	477	16,283.00
C14	508	22	0	0	0	3	533.00
EU152	115	0	9	0	0	0	124.00
FE55	243	26	1745	133	0	4	2,151.00
H3	828	2018	13652	2444	25136	424716	468,794.00
KR85	132	337	304	998	820	943	3,534.00
NI63	77	1370	5951	10	1	31	7,440.00
PO210	136	5687	32405	6290	1	521	45,040.00
SR90	2424	33	1904	512	212	133	5,218.00
TOTAL	10196	11528	62955	19682	27138	426940	558,439.00

** all isotopes units are MCI

ACTIVE LICENSES SORTED BY PRIORITY - 04/09/96

LICENSING REGION

0 1 2 3 4

PRIORITY TOTAL

	1	0	0	1	1	3
0	52	2	0	0	0	54
1	10	155	57	151	77	450
2	2	104	25	59	28	218
3	16	718	247	674	228	1883
4	0	5	2	14	1	22
5	129	1064	481	1171	493	3338
7	1	190	33	134	46	404
	-----	-----	-----	-----	-----	-----

TOTAL	211	2238	845	2204	874	6372
-------	-----	------	-----	------	-----	------

.....+(COL: 1)+...20.....+...30.....+...40.....+...50.(OUTPUT: HIT ENTER).....+...1

CMD:

FORWARD BLOCK 1 OVERLAP 0

For: Bill House

REVIEW GROUP -
RADIOACTIVE DEVICES1 curie Cs¹³⁷ sealed Source Disposal Estimate

- A. pre-encapsulation drum = \$ 600.00
 B. pre-encapsulation charge = \$ 250.00
 C. transportation charges = \$ 7134.00
 D. Broker charges = \$ 2600.00
 E. Out of Compact Surcharge = \$ 1650.00
 F. Disposal Charges = \$ 7405.50

(Based on 1000
miles one way)TOTAL = \$19639.57

C. Transportation charges 1000 miles $\times 2 \times 1.59 \times 30\% =$ \$4134.00
 Cask rental \$1000/day $\times 3 =$ \$3000.00
\$7134.00

D. Broker Charges \$550/day $\times 3 =$ \$1650
 Airfare = \$600
 Expenses 100/day $\times 2 =$ \$200
 Rental car 75/day \times \$150
\$2600

F. \$59/g $\times 3 \times 7.5 =$ \$442.5
 \$12.69/g $\times 3 \times 7.5 =$ \$94.5
 curie \$4150
 overpack \$750
 cask \$1795

\$7232 $\times 2.4\%$ \$7405.57

Post-It™ brand fax transmittal memo 7671

of pages 1

To: Joel Dubreuil	From: V. F. Fitch
Co: WRC	Co: SCDHEC
Dept: The Fed	Phone #
Fax #	Fax #