

APPENDIX B

INDUSTRIAL RADIOGRAPHY INSPECTION REFERENCES

General References: NUREG-1556, "Consolidated Guidance About Materials Licenses:
Vol.2 Program-Specific Guidance About Industrial Radiography
Licenses."
INEL-95/0387 "Human Performance Evaluation of Industrial Radiography
Exposure Events."

1. ORGANIZATION AND SCOPE OF PROGRAM

Information
Notice (IN)
89-25, Rev 1 "Unauthorized Transfer of Ownership or Control of
Licensed Activities"
NUREG-1556,
Vol. 15 "Consolidated Guidance About Materials Licenses:
Guidance About Changes of Control and About
Bankruptcy Involving Byproduct, Source, or Special
Nuclear Materials Licenses."
License application and applicable license conditions.

2. MANAGEMENT OVERSIGHT

A. Radiation Safety Officer

10 CFR 34.42 Radiation Safety Officer for industrial radiography.
Applicable license conditions.

B. Audits, Reviews, or Inspections

10 CFR 20.1101 Radiation protection programs.
10 CFR 20.2102 Records of radiation protection programs.
10 CFR 34.43 Training.
10 CFR 34.79 Records of training and certification.
Enforcement
Guidance
Memorandum
98-008 "Interim Guidance for Severity Level IV Violations-Material
Licensees."
Applicable license conditions.

C. Use by Authorized Individuals

10 CFR 34.46 Supervision of radiographers' assistants
Applicable license conditions.

D. As Low As Is Reasonably Achievable

10 CFR 20.1101 Radiation protection programs.

3. FACILITIES

- A. Facilities as Described
 - 10 CFR 20.1302 Compliance with dose limits for individual members of the public.
 - 10 CFR 34.33 Permanent Radiographic Installations
 - Applicable license conditions.

- B. Storage
 - 10 CFR 34.35 Labeling, storage, and transportation.

4. EQUIPMENT AND INSTRUMENTATION

- A. Instruments and Equipment
 - 10 CFR 34.25 Radiation survey instruments.
- B. Radiography Devices, Source Assemblies, Source Changers
 - 10 CFR 34.20 Performance requirements for industrial radiography equipment.
 - NUREG-1631 "Source Disconnects Resulting from Radiography Drive Cable Failures."
 - Applicable license conditions.

5. MATERIAL USE, CONTROL, AND TRANSFER

- A. Material Use
 - 10 CFR 34.13 Specific license for industrial radiography
 - 10 CFR 34.41 Conducting industrial radiographic operations.
 - 10 CFR 34.45 Operating and emergency procedures.
 - 10 CFR 34.51 Surveillance.
 - 10 CFR 34.53 Posting.
- B. Security and Control
 - 10 CFR 20.1003 Definitions (restricted area and unrestricted area).
 - 10 CFR 20.1801 Security of stored material.
 - 10 CFR 20.1802 Control of material not in storage.
 - 10 CFR 34.23 Locking of radiographic exposure devices, storage containers, and source changers.
 - 10 CFR 34.35 Labeling, storage, and transportation.
- C. Receipt and Transfer of Licensed Material
 - 10 CFR 20.1501 General.
 - 10 CFR 20.1906 Procedures for receiving and opening packages.
 - 10 CFR 20.2103 Records of surveys.
 - 10 CFR 30.41 Transfer of byproduct material.
 - 10 CFR 30.51 Records.
 - 10 CFR 34.27 Leak testing and replacement of sealed sources.
 - 10 CFR 34.35 Labeling, storage, and transportation.

10 CFR 34.63 Records of receipt and transfer of sealed sources.
10 CFR 71.5 Transportation of licensed material.

D. Inventories and Utilization Logs

10 CFR 34.29 Quarterly inventory.
10 CFR 34.71 Utilization logs.

6. INSPECTION AND MAINTENANCE:

10 CFR 34.27 Leak testing and replacement of sealed sources.
10 CFR 34.31 Inspection and maintenance of radiographic exposure
 devices, transport and storage containers, associated
 equipment, source changers, and survey instruments.
10 CFR 34.45 Operating and emergency procedures.
10 CFR 34.73 Records of inspection and maintenance of radiographic
 exposure devices, transport and storage containers,
 associated equipment, source changers, and survey
 instruments.
10 CFR 34.81 Copies of operating and emergency procedures.
10 CFR 21.21 Notification of failure to comply or existence of a defect
 and its evaluation.

Applicable license conditions.

7. FIELD STATIONS AND TEMPORARY JOB SITES

10 CFR 34.41 Conducting industrial radiographic operations.
10 CFR 34.45 Operating and emergency procedures.
10 CFR 34.51 Surveillance.
10 CFR 34.89 Location of documents and records.
10 CFR 34.101 Notifications.

8. AREA RADIATION AND CONTAMINATION CONTROL

A. Radiation Surveys

10 CFR 20.1302 Compliance with dose limits for individual members of the
 public.
10 CFR 20.1501 General.
10 CFR 20.2103 Records of surveys.
10 CFR 20.2107 Records of dose to individual members of the public.
10 CFR 34.21 Limits on external radiation levels from storage containers
 and source changers.
10 CFR 34.25 Radiation survey instruments.
10 CFR 34.45 Operating and emergency procedures.
10 CFR 34.49 Radiation surveys.

Applicable license conditions.

B. Leak Tests

10 CFR 34.13 Specific license for industrial radiography.
10 CFR 34.27 Leak testing and replacement of sealed sources.
Applicable license conditions.

9. TRAINING AND INSTRUCTIONS TO WORKERS:

- 10 CFR 19.12 Instruction to workers.
- 10 CFR 34.42 Radiation Safety Officer for industrial radiography.
- 10 CFR 34.43 Training.
- 10 CFR 34.45 Operating and emergency procedures.
- Knowledge of 10 CFR Part 20 radiation protection procedures and requirements.
- Applicable license conditions.

10. RADIATION PROTECTION

A. Radiation Protection Program

1. Exposure evaluation

10 CFR 20.1501 General.

2. Programs

10 CFR 20.1101 Radiation protection programs.
10 CFR 34.13 Specific license for industrial radiography.

B. Dosimetry

1. Dose Limits

10 CFR 20.1201 Occupational dose limits for adults.
10 CFR 20.1207 Occupational dose limits for minors.
10 CFR 20.1208 Doses to an embryo/fetus.

2. External

10 CFR 20.1501 General.
10 CFR 20.1502 Conditions requiring individual monitoring of external and internal occupational dose.
10 CFR 34.47 Personnel monitoring.
Applicable license conditions.

3. Planned Special Exposures

10 CFR 12.06 Planned special exposures.

C. Records

10 CFR 20.2102 Records of radiation protection programs.
10 CFR 20.2103 Records of surveys.
10 CFR 20.2104 Determination of prior occupational dose.
10 CFR 20.2106 Records of individual monitoring results.
10 CFR 34.83 Records of personnel monitoring procedures.
10 CFR 34.87 Form of records.

11. RADIOACTIVE WASTE MANAGEMENT

10 CFR 20.1801	Security of stored material.
10 CFR 20.2001	General requirements.
10 CFR 30.41	Transfer of byproduct material.
10 CFR 34.35	Labeling, storage, and transportation.
10 CFR 30.51	Records.
10 CFR 34.63	Records of receipt and transfer of sealed sources.
Inspection Procedure (IP) 84850	"Radioactive Waste Management - Inspection of Waste Generator Requirements of 10 CFR Part 20 and 10 CFR Part 61."

12. DECOMMISSIONING

10 CFR 30.35	Financial assurance and record keeping for decommissioning.
10 CFR 30.36	Expiration and termination of licenses and decommissioning of sites and separate buildings or outdoor areas.
Inspection Manual Chapter (IMC) 2602	"Decommissioning Inspection Program for Fuel Cycle Facilities and Materials Licensees."
IP 87104	"Decommissioning Inspection Procedure for Materials Licensees."
IMC 2605	"Decommissioning Procedures for Fuel Cycle and Materials Licensees."
NUREG/BR-0241	"NMSS Handbook for Decommissioning Fuel Cycle and Materials Licensees."

13. TRANSPORTATION

A. General

NRC Charts	"Hazard Communication for Class 7 (Radioactive) Materials."
10 CFR 71.5	Transportation of licensed material.
Temporary Instruction 2515/133	"Implementation of Revised 49 CFR Parts 100-179 and 10 CFR Part 71."

B. Shippers - Requirements for Shipments and Packaging

1. General Requirements

49 CFR Part 173, Subpart I	Class 7 (radioactive) materials.
49 CFR 173.24	General requirements for packagings and packages.
49 CFR 173.448	General transportation requirements.
49 CFR 173.435	Table of A ₁ and A ₂ values for radionuclides.

2. Transport Quantities

10 CFR 71.4	Definitions.
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- a. All quantities
 - 10 CFR 71.4 Definitions.
 - 49 CFR 173.410 General design requirements.
 - 49 CFR 173.441 Radiation level limitations.
 - 49 CFR 173.443 Contamination control.
 - 49 CFR 173.475 Quality control requirements prior to each shipment of Class 7 (radioactive) materials.
 - 49 CFR 173.476 Approval of special form Class 7 (radioactive) materials.
- b. Limited quantities
 - 49 CFR 173.421 Excepted packages for limited quantities of Class 7 (radioactive) materials.
 - 49 CFR 173.422 Additional requirements for excepted packages containing Class 7 (radioactive) materials.
- c. Type A quantities
 - 49 CFR 173.412 Additional design requirements for Type A packages.
 - 49 CFR 173.415 Authorized Type A packages.
 - 49 CFR 178.350 Specification 7A; general packaging, Type A.
- d. Type B quantities
 - IP 86740, Section 2 Inspection of Transportation Activities.
- e. LSA material and SCO
 - 49 CFR 173.403 Definitions.
 - 49 CFR 173.427 Transport requirements for low specific activity (LSA) Class 7 (radioactive) materials and surface contaminated objects (SCO).

3. Hazardous Materials (HAZMAT) Communication Requirements

- 49 CFR 172.200-205 Shipping papers.
- 49 CFR 172.300-338 Marking.
- 49 CFR 172.400-450 Labeling.
- 49 CFR 172.500-560 Placarding.
- 49 CFR 172.600-604 Emergency response information.

C. HAZMAT Training

- 49 CFR 172.702 Applicability and responsibility for training and testing.
- 49 CFR 172.704 Training requirements.

D. Transportation by Public Highway

49 CFR 171.15	Immediate notice of certain hazardous materials incidents.
49 CFR 171.16	Detailed hazardous materials incident reports.
49 CFR 177.800	Purpose and scope of this part and responsibility for compliance and training.
49 CFR 177.816	Driver training.
49 CFR 177.842	Loading and unloading: Class 7 (radioactive) material.

E. Inspection and Maintenance Program for Shipping Packages

10 CFR 34.31	Inspection and maintenance of radiographic exposure devices, transport and storage containers, associated equipment, source changers, and survey instruments.
10 CFR 71.12	General license: NRC-approved package.
10 CFR 71.101	Quality assurance requirements.

14. NOTIFICATIONS AND REPORTS

10 CFR 19.13	Notifications and reports to individuals.
10 CFR 20.2201	Reports of theft or loss of licensed material.
10 CFR 20.2202	Notification of incidents.
10 CFR 20.2203	Reports of exposures, radiation levels, and concentrations of radioactive material exceeding the constraints or limits.
10 CFR 21.21	Notification of failure to comply or existence of a defect and its evaluation.
10 CFR 30.50	Reporting requirements.
10 CFR 34.101	Notifications.

15. POSTING AND LABELING

10 CFR 19.11	Posting of notices to workers.
10 CFR 20.1902	Posting requirements.
10 CFR 21.6	Posting requirements.
10 CFR 34.20	Performance requirements for industrial radiography equipment.
10 CFR 34.35	Labeling, storage, and transportation.
10 CFR 34.53	Posting.

16. INDEPENDENT AND CONFIRMATORY MEASUREMENTS

No references.

17. VIOLATIONS, NON-CITED VIOLATIONS, AND OTHER SAFETY ISSUES

NUREG/BR-0195, Rev.1	"NRC Enforcement Manual."
NUREG-1600, Rev. 1	"General Statement of Policy and Procedures for NRC Enforcement Actions."

18. PERSONNEL CONTACTED

No references.

19. PERFORMANCE EVALUATION FACTORS

IP 87101 "Performance Evaluation Factors."

20. SPECIAL CONDITIONS OR ISSUES

IN 96-70 "Year 2000 Effect on Computer System Software."

IN 97-61 "U.S. Department of Health and Human Services Letter to Medical Device
Manufacturers, on the Year 2000 Problem."

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