Washington State Department of Health
Division of Radiation Protection

# RHF-1IR
# Application for Radioactive Material License Industrial Radiography

**INSTRUCTIONS** — Complete all items in this application for a new license or the renewal of an existing license. Use supplemental sheets where necessary. Item 21 must be completed on all applications. **Mail original to:** Washington State Department of Health, in accordance with the directions contained in the application cover letter. Upon approval of this application, the applicant will receive a State of Washington Radioactive Material License issued in accordance with the general requirements contained in Washington State Department of Health, Division of Radiation Protection, Rules and Regulations for Radiation Protection, and the Washington Nuclear Energy and Radiation Control Act, Chapter 70.98 RCW.

1a. **Name and Address of Applicant** (Institution, Firm, individual owner, etc. Must include complete **STREET** address and zip code.)

Telephone No: _____

1b. **Address(es) where Radioactive Material will be used and/or stored** (if different than 1a.) INCLUDE ZIP CODE

1c. Will Radioactive Materials be used at temporary jobsites ❑ Yes ❑ No

1d. See instruction sheet for information concerning phone notification.

2. **Person to Contact Regarding this Application** — **Telephone No.**

3. **This is an Application for**: (Check appropriate item)
a. ❑ New License* b. ❑ Renewal of License No. _____ .

4. **Radiation Safety Officer (RSO)**
(Name of person designated as Radiation Safety Officer.)

(Include training certificates)

5. **Qualifications and Duties of Radiation Safety Officer**
❑ Training and experience attached
❑ Appendix "A" signed and attached , or
❑ Equivalent duties attached

| 6. **Radioactive Material** (Element and Mass number of each.) | 7. **Sealed Source Manufacturer and Model Number** | 8. **Activity of Each Source** (millicuries or becquerels) |
|---|---|---|
| a. | a. | a. |
| b. | b. | b. |
| c. | c. | c. |
| d. | d. | d. |

9. **Device Description** (Make lettering correspond to lettering in items 6, 7, and 8 above).

| | **Manufacturer of Exposure Device** | **Model No.** | **Manufacturer of Source Changer** | **Model No.** |
|---|---|---|---|---|
| a. | | | a. | |
| b. | | | b. | |
| c. | | | c. | |

*** License fee required with new license application (Complete item No. 20.)**

10. **Radiation Detection Instruments WAC 246-243-080**

List Radiation Detection instruments
(Range 2 mR/hr thru 1 R/hr)

| MANUFACTURER | MODEL # | RANGE |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

11. **Calibration of Survey Instruments** (Mandatory for all survey instruments possessed). WAC 246-243-080

(Check)

❑ Calibration will be done per WAC 246-243-080

(Check One)

❑ Applicant will perform survey instrument calibrations. (attach methods and procedures; include source manufacturer, model, isotope, activity, safety precautions, sample calibration record, sample calculations).

❑ Calibration will be done by calibration service agency.

Name, Address, and License Number of Calibration Service
Name _____
Address _____
_____
License Number _____

12. **Personnel Monitoring WAC 246-243-150**

(Check)

❑ Monthly film badge or TLD exchange.

Name and Address of NVLAP certified Film Badge or TLD Supplier providing initial service. Any subsequent suppliers must be NVLAP certified.
Name _____
Address _____
_____

❑ Direct Reading Pocket Dosimeter

| MANUFACTURER | MODEL # | RANGE |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

The following dosimeter requirements will be met:

1. 0-200 mR range;
2. Calibrated annually per WAC 246-243-150;
3. Zeroed/charged at beginning of each shift;
4. Shall be worn during all radiographic operations; and
5. Dosimeters, film badges, TLD stored in cool, dry place away from radiation sources when not in use

(Check one)

❑ Applicant will do pocket dosimeter checks (attach methods and procedures) WAC 246-243-150

❑ Checks will be done by approved service agency

Approved Service Agency
Name _____
Address _____
_____
License Number _____

❑ Alarming Ratemeter

Indicate name and model number of alarming ratemeter.
_____
_____
_____

Alarming Ratemeter meets ANSI N13.27 ❑ Yes ❑ No
Alarming Ratemeter preset alarm level set at a maximum of 500 mR/hr. ❑ Yes ❑ No

13. **Facilities** WAC 246-221-060 WAC 246-243-210
WAC 246-221-120 WAC 246-243-220

❑ Facilities and storage diagram attached.

(Line drawings of each radiographic vault and/or storage area, showing dimensions, shielding thickness, density, and type of material for all sides, above, and below. Show relationship (distance) to adjacent areas for side, above, and below, and dose rates with activity of source used in those areas.)

The following facility requirements will be met for a permanent radiographic installation:

1. Visible signal actuated by radiation;
2. Audible warning actuated by attempted entry;
3. Lock(s);
4. Unimpeded exit (WAC 246-221-120(1)(e)(iii); and
5. Sign(s) (posting).

14. **Leak Test Program** WAC 246-243-090

❑ Leaking source procedure attached

(Check one)

❑ Applicant will contract with approved outside consultant to do leak tests.
Name _____
Address _____
_____

❑ Applicant will do leak tests using approved leak test kit, mailing leak tests to kit manufacturer for counting. Manufacturer's leak test kit procedures attached.
Manufacturer name, address
Name _____
Address _____
_____

❑ Will do own leak test including counting. Detailed procedures attached. (Include instrumentation, calibration standard, sample calculation, action levels and sample report form.)

15. **Operating and Emergency Procedures Manual** WAC 246-243-140

(Indicate page number of following required items.)

Radiation surveys

_____ Perimeter of restricted area
_____ After each radiographic operation
_____ Before storing exposure device
_____ Outside of vehicle used for transportation
_____ Passenger compartment of vehicle used for transportation

Control of access to radiographic areas

_____ Roping or barricading of area
_____ Surveillance
_____ Locking of exposure device and source changers
_____ Control of keys to exposure devices and source changers
_____ Use of audible or visual alarms

Posting of radiographic areas

_____ Radiation areas or perimeter of restricted areas
_____ High radiation areas

Inspection/maintenance of equipment

_____ Daily inspection prior to use (checklist and instructions)

Quarterly inspection and preventative maintenance

_____ All connectors
_____ Drive cables
_____ Source guide tubes (check for corrosion, wear and contamination, clean and lube)
_____ On-off indicators
_____ Moving parts (check for defects and wear)
_____ Repair/replace defective/worn components or remove from service
_____ Records kept tor three years

Quarterly tests of fixed facilities

_____ Visible and audible warning systems
_____ Door interlocks
_____ Access door lock
_____ Signs (posting)

Transportation

_____ Securing and bracing of equipment
_____ Survey, label, shipping papers, placarding (DOT)
_____ Emergency information and 24 hour phone number

Use of equipment

_____ Step-by-step procedures for each exposure device
_____ Source changer step-by-step procedures

Locking and securing sources of radiation

_____ Post-exposure survey
_____ Securing device after post-exposure survey
_____ Procedures for storage of devices and sources

Product malfunction/defect

_____ Notification procedures

Emergency procedures

_____ Procedures to minimize exposure in accidents or unusual occurrence
_____ Notification procedures (include names, phone numbers)

Records (See Appendix B for required records)

❑ Appendix B completed, signed and attached
❑ Copies of record forms attached

16. **Waste Disposa**l WAC 246-232-080

❑ Return to manufacturer for disposal
❑ Other (detailed explanation attached)

17. **Management Controls** WAC 246-235-080

❑ Organizational chart attached
❑ Duties and responsibilities (other than RSO) (specific names/ positions)
❑ Checklist for quarterly internal audit attached
❑ Procedures for reporting and recording deficiencies attached
❑ Program to correct deficiencies attached

18. **Training** WAC 246-235-080

Full in-house training program or Limited in-house training program (Submit the information called for in Washington State Department of Health, Division of Radiation Protection, Regulatory Guide 10.6, "Guide for the Preparation of Applications for the Use of Sealed Sources and Devices for Performing Industrial Radiography:")

(Check One)

❑ Full in-house training program; ❑ Limited in-house training program; or ❑ Very limited in-house training program.

19. **Personnel**

19a. **Individual users** (Names of radiographers who will use or directly supervise use of Radioactive Materials).

19b. **Training and experience** (check one or both)

❑ Detailed training and experience attached
❑ Detailed training and experience previously filed under _ license number _____

20. **Annual License Fee Required** (see WAC 246-254-090)

License fee enclosed ❑ Yes ❑ No
Amount $ _____

# Item 21 - Certificate

(This item must be completed by management)

**The applicant and any official executing this certificate on behalf of the applicant named in Item 1a certify that this application is prepared in conformity with Washington State Department of Health, Division of Radiation Protection regulations and that all information contained herein, including any supplements attached hereto, is true and correct to the best of our knowledge and belief.**

_____ By: _____

(TYPE OR PRINT NAME OF CERTIFYING OFFICIAL) (SIGNATURE)

_____ Date: _____

(TITLE OF CERTIFYING OFFICIAL)

## Appendix A

## Qualifications and Duties of a Radiation Safety Officer

The individual assigned the responsibility of maintaining active management of the radiation control program must at least meet the requirements for an industrial radiographer. The Radiation Safety Officer must possess a thorough knowledge of equipment, procedures, and regulations, and a level of competency at or above that expected of a radiographer. As a general guideline, the department expects a Radiation Safety Officer to have at least two (2) years experience with the equipment and procedures that are likely to be encountered. The Radiation Safety Officer must be available for advice and assistance on radiation safety matters at all times while radiographic operations are in progress.

The following list of responsibilities and duties is neither all inclusive nor should it be interpreted as a requirement. Some duties may be delegated to persons with the appropriate training.

A. Serve as the licensee's liaison with Washington State Department of Health, Division of Radiation Protection, on license matters.

B. Serve as liaison between management and radiographers.

C. Be responsible for compliance with U.S. DOT regulations in the transportation of radioactive materials.

D. Develop and maintain up-to-date operating and emergency procedures.

E. Assume control and institute corrective action in emergency situations.

F. Investigate the cause of incidents and determine necessary preventive action.

G. Be responsible for safe source replacement.

H. Maintain exposure devices, storage facilities, fixed facilities, and equipment.

I. Establish and maintain the internal inspection program, including quarterly inventory.

J. Procure and maintain an adequate number of operable and properly calibrated radiation survey instruments.

K. Establish and conduct a survey instrument calibration program.

L. Establish and maintain the licensee's record-keeping system.

M. Establish and maintain the leak test program.

N. Establish and maintain a personnel monitoring program, and review exposures.

O. Establish and conduct a training program for radiographers and radiographers' assistants.

P. Examine and determine competency of radiographic personnel.

Approved By _____ Date _____

**RHF-1IR, Appendix B**

**Records Required for Industrial Radiography**

Industrial radiography licensees are required to maintain a number of records. Most records are required by regulation in Title 246 WAC. Some records are required by license condition. This form is designed to simplify your task of complying with the regulations in regards to record keeping. The different records requirements are listed below in the order they appear in Title 246 WAC and license conditions. It is your responsibility to develop your own record forms and make sure that all required records are accounted for in those record forms. Please assign some code number to each industrial radiography record form you will use in compliance with the regulations. Complete this appendix by indicating opposite each record description below the code number of your form in which the required record is covered. Attach completed RHF-1IR Appendix B form and a sample of each record form to your Industrial Radiography Radioactive Materials License Application.

| **Section of WAC** | **Type of Records** | **Form Code No.** |
|---|---|---|
| 246-220-020 | General provisions require records of receipt, use, storage, transfer or disposal of radiation sources. | |
| 246-221-020 | Written signed statements of employees regarding prior occupational exposure. | |
| 246-221-030(6) | Records of planned special exposures. | |
| 246-221-055(5) | Records of dose to an embryo/fetus. | |
| 246-221-060(4) | Records demonstrating compliance with dose limits for the public. | |
| 246-221-080 | Records of leak tests. | |
| 246-221-090 | Records of radiation exposures on form RHF-5A or equivalent. | |
| 246-221-110 | Records of surveys preserved as specified in WAC 246-221-230. | |
| 246-221-160 | Surveys upon receiving radioactive materials. | |
| 246-221-170 | Records of transfer or disposal. | |
| 246-243-050 | Records of quarterly management audit, radiographer's field audit, and periodic retraining. | |
| 246-243-080 | Records of calibrations shall be maintained for three years. | |
| 246-243-090 | Records of leak tests shall be maintained for three years. | |
| 246-243-100 | Records of quarterly inventories shall be maintained for three years. | |
| 246-243-110 | Utilization logs. Each licensee shall maintain current logs for three years. | |
| 246-243-120 | Inspection and maintenance of exposure devices, storage containers, and source changers at intervals not to exceed three months. Records shall be kept for three years. | |
| 246-243-130(2)(d)` | Records of training, including copies of written tests, dates and results of oral tests, and field examinations shall be maintained for at least one year following termination of employment. | |

| | | |
|---|---|---|
| 246-243-130(3) | Each licensee shall maintain records of training and testing which demonstrate that the requirements of WAC 246-243-130 and 246-235-080(5)(a) are met. | _____ |
| 246-243-150(2)(a) | Records of daily Pocket Dosimeter readings shall be maintained until the department authorizes their disposition. | _____ |
| (2)(b) | Records of alarming rate meter calibrations. | _____ |
| 246-243-190 | Physical radiation survey prior to securing a radiographic device as specified in WAC 246-243-060(3). | _____ |
| (4) | Physical radiation survey of boundary or restricted area. Maximum reading shall be recorded. | _____ |
| (5) | Physical radiation survey prior to device storage | _____ |
| (6) | Records required by paragraph (3), (4) and (5) shall be maintained for three years. | _____ |
| 246-243-200 | Records required at temporary job sites. | _____ |
| | (1) License | _____ |
| | (2) Operating/emergency procedures | _____ |
| | (3) Regulations | _____ |
| | (4) Survey records | _____ |
| | (5) Daily pocket dosimeter records | _____ |
| | (6) Latest calibration and leak test records | _____ |
| 246-243-210 | Records for enclosed radiography. | _____ |
| 246-243-220(2) | Alarm system shall be tested at intervals not to exceed three months and records shall be kept for three years. | _____ |
| License Conditions | These generally require additional records that are in the licensee's operating and emergency procedures. They are based on WAC 246-235-080 (5), Use of Sealed Sources in Industrial Radiography. This section requires among other things an adequate internal inspection program, of which records are necessary to document compliance. | _____ |

Note: Where records of surveys and monitoring are required, the records must show the appropriate units e.g., milliroentgen per hour for external radiation, microcuries for removable contamination, or S.I. equivalents. It is not sufficient to just indicate that a survey was performed. The actual reading has to be recorded with location of the reading (see WAC 246-243-190 (4)).

Approved By _____ Date _____